aSc TimeTables - Online Help

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aSc TimeTables

1 General

1.1 Welcome

Dear Sir/Madam,

Thank you for your interest in **aSc TimeTables** and **aSc Substitutions**. We hope the software will become your useful tool and will make your timetabling work easier.

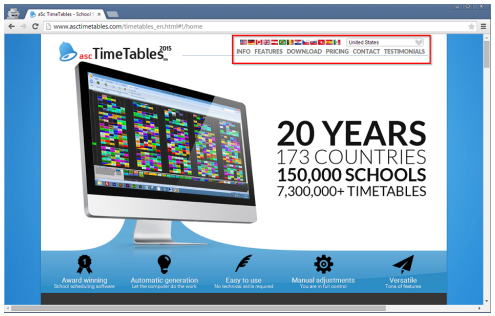
Please visit **www.asctimetables.com** to download the trial version or if you are already an aSc TimeTables user, visit the site to download the latest version.

You can download this documentation also in PDF format here: **1.6 PDF documentation**

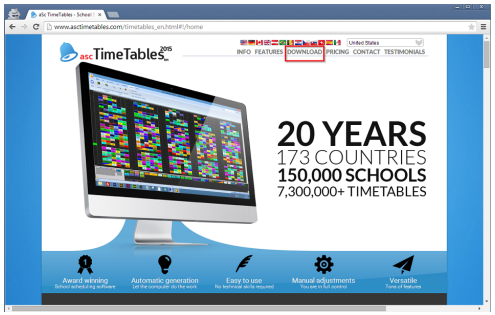
1.2 Download & Installation

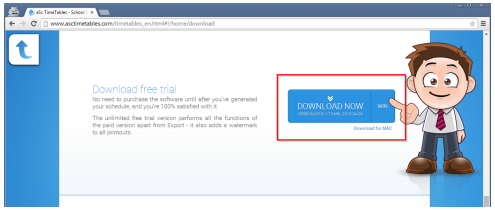
You can always download the latest version of aSc TimeTables from our web page:

1. Open http://www.aScTimeTables.com and choose your language:

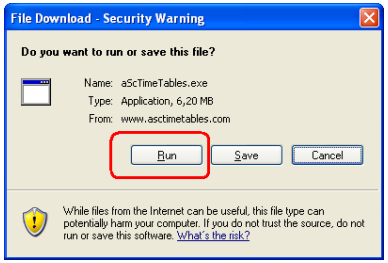


2. Click download on the download page:

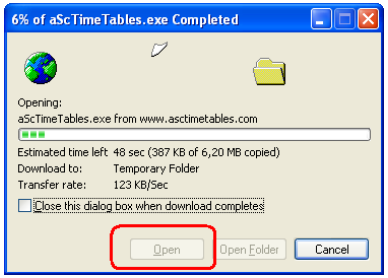




3. Click Run:



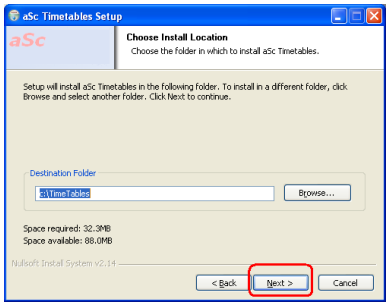
4. Wait until the download is finished and then click Open and then Run:



5. Choose your language:

Note: you can change the language anytime later in the software.

6. Click Next several times to finish the installation:



7. Wait until the files are copied. Then click Finish to run aSc TimeTables.

See also:
2.1 Starting the software

1.3 System requirements

aSc TimeTables will run fine on any PC that is able to run Windows 2000 or higher(2003/ME/NT/XP/Vista/7/10).

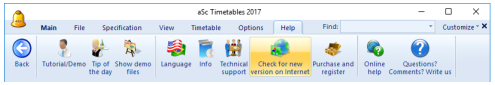
As always: the better the computer, the faster the software will generate the timetable.

The speed of the processor is most important. More system memory or a bigger hard disk will not help.

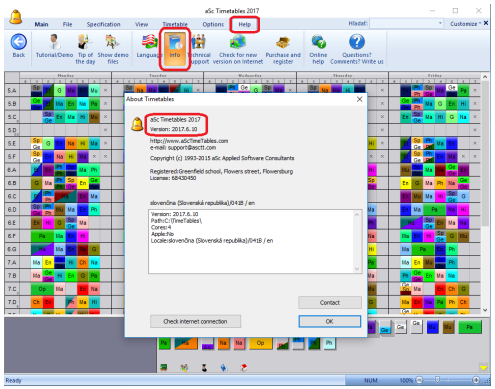
Note:
The software automatically supports MultiCore processors. MultiCore computers will generate your schedule faster.
24.8 Multiprocessor generation (dual-core...)

1.4 Am I using the latest version of the software?

To check if you are using the latest version of the software use menu **Help/Check for new version on the Internet**.
This function tells you if there is a newer version available on the internet.



Note: the actual version number can be found by using menu Help/Info. A dialog box appears, with the info about the version you have currently installed:

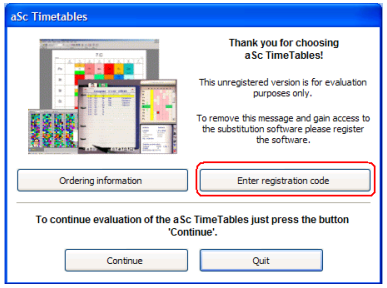


1.5 How to register the sofware?

The demo version that you can download at www.asctimetables.com is fully functional and you can create your school's timetable with it.

Once you see that the software is suitable for your school, you can purchase your copy at the Internet site www.asctimetables.com and you will receive the registration number so that you can print, export and gain access to the substitution software.

You have to input this registration number to the software. After starting the software, click the button **Registration**.



This dialog will appear:

Please input the Registration name and the Registration number **exactly** as they are stated in the registration email. The best way is to use Windows copy/paste functions (CTRL-C and CTRL-V).

If you wish to have a different registration name, please tell us and we will issue a new registration name and number for you. However the registration name always shall include the name and address of your school.

1.6 PDF documentation

You can download this online help in PDF format:

Several versions are available, the content is the same. Just select the layout that fits you more:

Portrait 1 column
Good for online reading or those who prefer big letters.

Portrait 2 columns
Save some space.

Also good when your printer can print booklets or more pages on one A4. You can also use FinePrint software to print booklets.

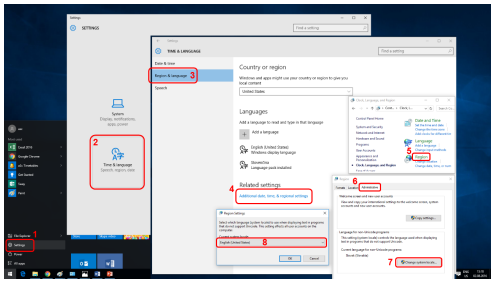
Landscape 4 columns
Good when you want to print less pages and do not want to bother with booklets.

The PDF for aSc Substitutions can be found here:

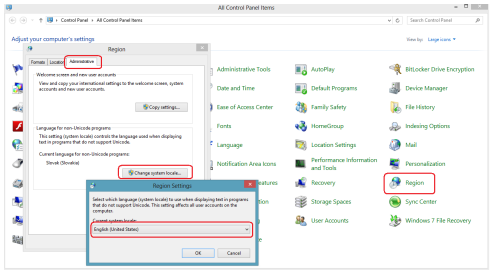
1.7 How to set Regional and Language options

Please go to Start, Control panel, Regional and Language options and set the Regional options and the Advanced (only Windows XP) into your language.

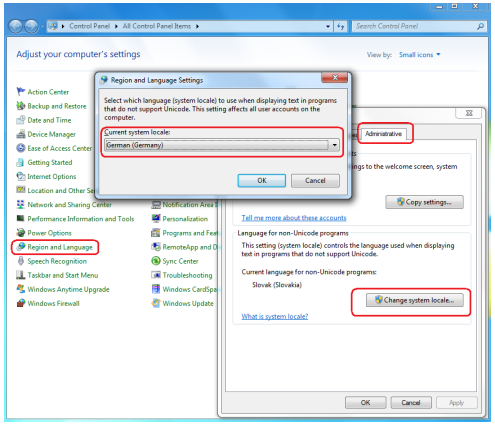
Windows 10:



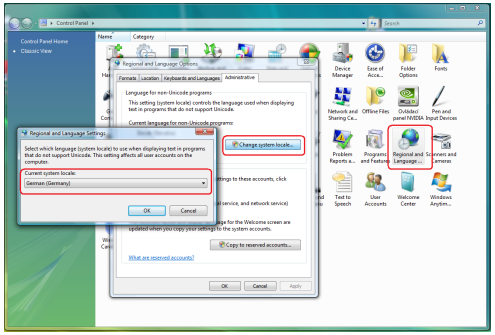
Windows 8:



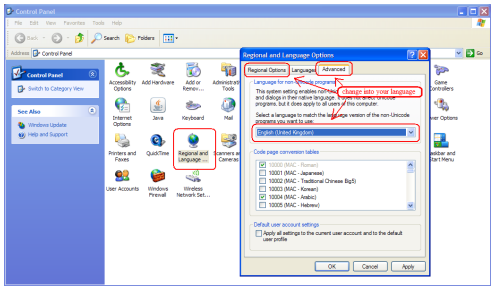
Windows 7:



Windows Vista:



Windows XP:



2 First steps

2.1 Starting the software

After the installation you can find aSc TimeTables and aSc Substitutions icons on your desktop and in the Start/Programs menu.

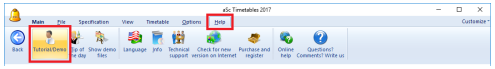
If you run aSc TimeTables in demo version mode you will see this screen:

We suggest you check the **Tutorial** first as it shows you the basics of the software and you can quickly get info on what the software can do and where to find it.

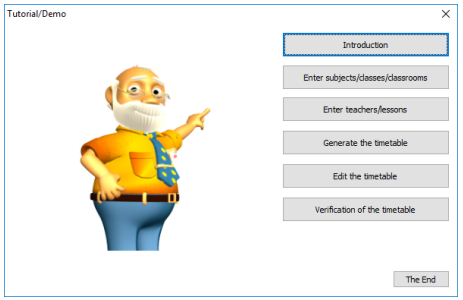
Once you've checked the tutorial you can create a timetable based on your data. Just choose the option **Work with the program**. See: 2.3 Creating a new or opening existing timetable

2.2 Checking the tutorial

Tutorial can be launched either from the demo dialog or from menu Help/Tutorial:



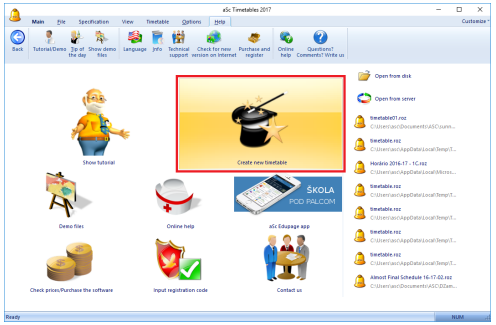
Tutorial consists of several parts. Click on the button you would like to learn about.



Then just read the texts and press Enter to follow the tutorial. Once the part is finished you are taken back to the tutorial dialog and you can choose different part.

2.3 Creating a new or opening existing timetable

After the program starts, the following screen will appear:

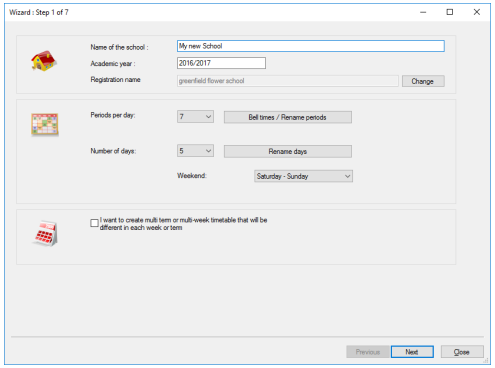


Create new timetable: The Timetable wizard will create a blank timetable and it will open a sequence of dialogs for entering data. This ensures that the data will be entered in the right order.

Existing timetable can be opened by clicking on the filename in the Recent files section that shows last 8 documents you have worked with. If you are looking for older file, click Browse... to seek the file on your computer.

Note:
- you can run the wizard anytime later via menu Specification/Wizard
- a good idea is to check also some demo files. First check the Basic demo files. Then you may want to check the country specific ones. All the demo files are timetables from real schools.

2.4 Basic data



Using menu Options/Settings or in Wizard step 1, you can enter the following data:

1. Name of your school

2. Academic year

3. Days for which you are going to create the timetable (if your school also teaches on Saturday, it is necessary to include Saturday in the list).

4. Number of lessons per day. This is the maximum number of lessons you have at your school.

5. Specify if you want to use zero lessons. Many schools have a special lesson before the main teaching starts. If this is not your case uncheck this option.

6. If you have a timetable for more than 7 days, you can input the number of days into the last combo box. If you have less than 7, just leave this combo box empty. If you have a 2 week timetable please read this article: 11.2 Two week timetable

Move from Step 2 to Step 3 by clicking on Next.

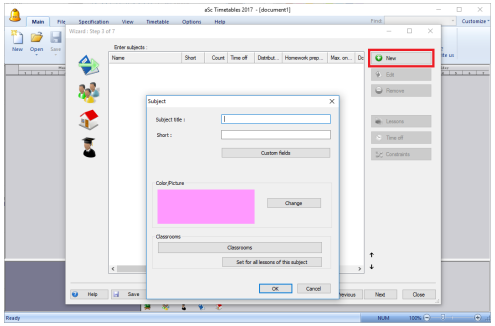
Note 1 - All data entered in the Wizard can be changed anytime later. You can recall the wizard via menu Specification/Wizard.

Note 2 - Your registration number is connected with your school's name, therefore if it changes, the program will be automatically closed. On the next run it is then necessary to enter the original name of the school and the registration number, or enter a new name of the school and register the program again.

Note 3 - Bells tabs specify when your lesson starts and ends. Please check this article:

2.5 Subjects

In this step you enter subjects which will be taught this school year. You can create a completely new subject or edit an existing one.

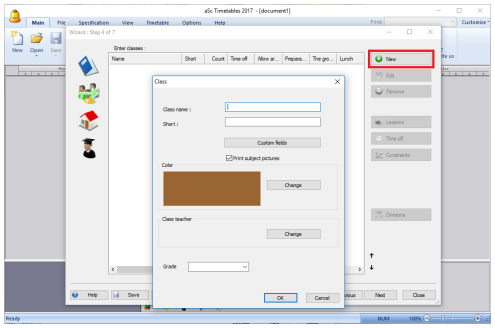


Here are the options you can input for each subject:

4.1 Homework preparation
16.1 Max one history lesson on 6th position in each class (solution 1)
4.2 Double lessons cannot span over "long breaks"
4.3 Subject classrooms

Please note that this is not a 'Tax declaration', you do not need to fill all the fields, just fill those you understand and really want to use. You can change any value anytime later so do not be afraid.

2.6 Classes

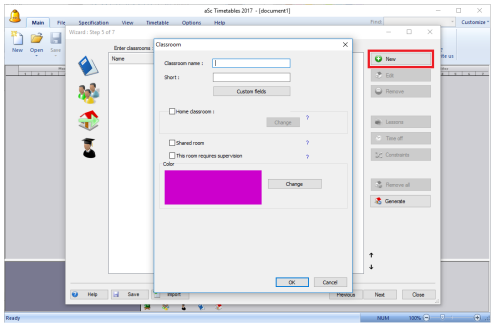


Similar to the previous step, here you can create, edit, or delete a class. You can enter other data for a class: Lessons..., Divisions... and Time off.

You can find more details about Classes here:
5.3 Divisions
5.2 Class time off
5.4 Class lessons
5.5 Details

Note:
- The order in which the classes are shown in this list is the same as in which the classes are shown on the main screen and in which they are printed. See: 3.1 How can I sort teachers/classes/subjects/classrooms?

2.7 Classrooms



As in the previous step, here you can create, edit or delete classrooms. You can also enter when a classroom is free to use.

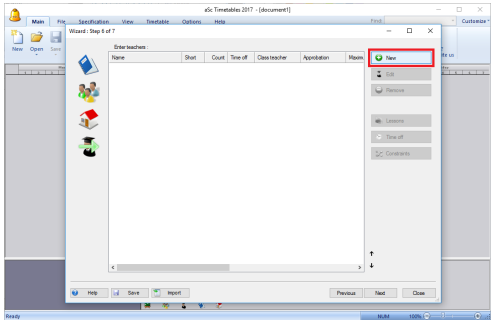
8.2 What is shared classroom? What is home classroom?
8.6 How to specify that we cannot use classroom at certain times?
8.4 How can I specify teachers home classrooms?
8.3 How can I specify default (usual) classrooms for certain subject?

Theoretically the classrooms can be omitted and you can create a timetable without entering any classrooms.

However most schools have serious

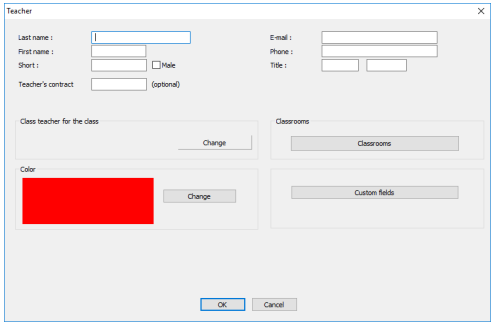
classroom shortages and the schedule generated without classrooms would be useless. So entering classrooms is not only good to tell the students where to go, but also to tell the generator algorithm not to put 3 Physical education lessons at the same time, when your school has only two Gym rooms.

2.8 Teachers



Here you can use buttons New..., Edit..., and Remove to add, edit and remove teachers. You can use the button Time off... to enter slots in which the selected teacher cannot teach.

You can also set:



Contract enter teacher's contract (lessons he is teaching)

Color select color for the teacher

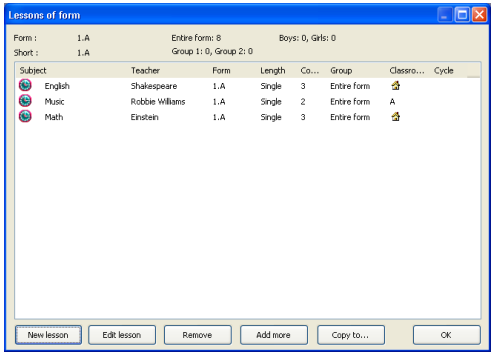
Details set other properties for the teacher. This includes the maximum number of windows (gaps), the number of days he/she can teach and the maximum number of lessons the teacher can teach consecutively.

Color all will assign standard colors to all teachers.

For details please check these articles:

6.4 Contracts
6.3 Inputting Teacher's details

2.9 Lessons



By clicking on Lessons... you can display the lessons for a specific class or a teacher.

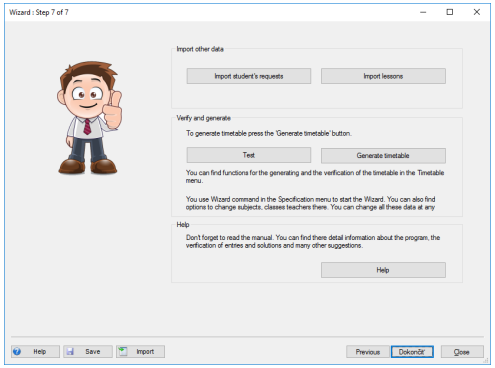
Here you can add new lessons, edit existing ones, remove some lessons, add more lessons at once and also copy some lessons to another class.

See this articles:

6.4 Contracts
7.1 Adding and Editing a lesson

2.10 Checking and generation

After you enter basic data, you can generate the timetable. Just press button "Generate" to generate the timetable and finish the wizard:



The generation dialog will suggest you to test the timetable before the generation. A good idea can be to check help topics explaining the generation:

24.1 Starting the generation
and
24.4 A good way to generate your timetable

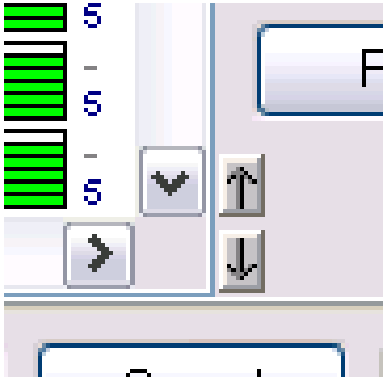
If you still haven't done so, we advise you also to check the Tutorial:

2.2 Checking the tutorial

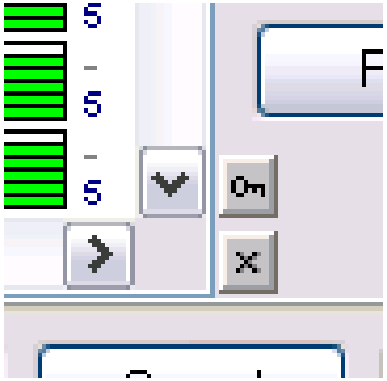
3 Data input

3.1 How can I sort teachers/classes/subjects/classrooms?

You can use the **two small buttons in the right-bottom corner** of teachers/classes/subjects/classrooms list box to reorder items in the list.



Just click on the item you wish to reposition in the list and use the up/down arrows to move it to the desired position. For classes, teachers, and classrooms, this will also change the order of timetable rows on the main screen in Whole/Teachers/Classrooms views.



Another way how to reorder items in the list is to click on the column header. This will reorder the list based on that column. This way you can sort items e.g. by Name, or Short name, or any other column. However this sort is just temporary - you can cancel it and return to use the original order.

When the list is sorted by some column, small buttons at the right-bottom change to lock (key) and cancel (cross) buttons:

With the lock button you can make the current (temporary) sorting permanent. Using the cancel button you can cancel the temporary sort order of the list items and return to the original (permanent) order.

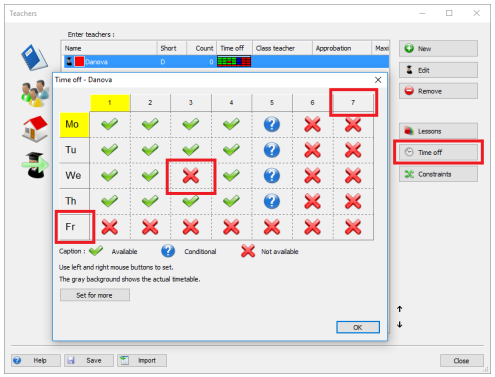
Notes:
1. Temporary sort will not change order of items in Whole/Teachers/Classrooms timetable views.

2. If you want to sort items in descending order, click on the same column header twice.

3. With Ctrl + click on a column header you can sort by multiple columns.

3.2 Time-off

For classes, teachers, classrooms and subjects you can define so called "Time-off". It defines when lessons can be (green), and when they cannot be (red). You can also define so called "question marked positions", where lessons can be, but you wish to avoid having lessons there:



You can click on an individual cell to change its status, or you can click on a column or a row header to change whole day status. So if your teacher cannot come on Friday, simply click on the Friday's row header and the whole Friday will be blocked.

Notes:
- Every lesson has multiple Time-offs - from subject, teacher(s), class(es), classroom(s). They apply together, so if some position is disabled in just one of these Time-offs, the position is disabled also for this lesson.

3.3 Can I reuse last year data?

Yes, you can. In fact it is quite simple:

Open your 2004/2005 file and use menu File/Save as. Then save this file under some different name for example "schedule2005-2006".

Then you can add new data and remove data that is not valid for the new year.

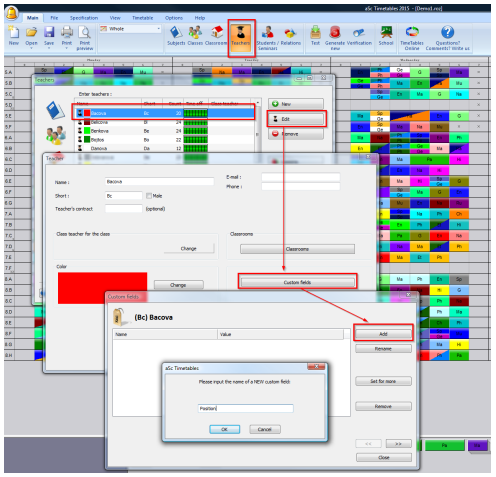
This way, you can save time by reusing already entered scheduling data.

Note: In some cases it makes sense to rename the classes. For example if your class 2.A has mostly the same lessons as it had last year, you can simply go to menu Specification/Classes, Edit the class 1.A and change the name to 2.A. By doing this, your new 2.A will have the same lessons as it had in the previous school year when it was called 1.A.

3.4 Custom fields

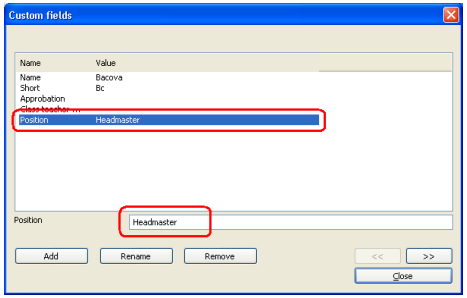
You can define and input your custom fields for each teacher, class, classroom or subject for the whole timetable.

For example: if you need to input and print for each teacher his or her school position, you can go to teacher's custom fields:



And in here you can press the button Add and create a new custom field called 'Position'.

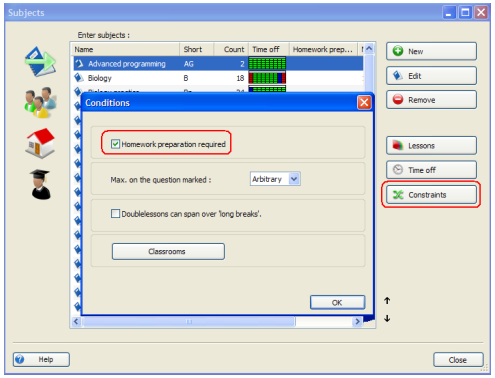
Once you create this field you can input the value for each teacher:



See also:
28.1 Print-out designs

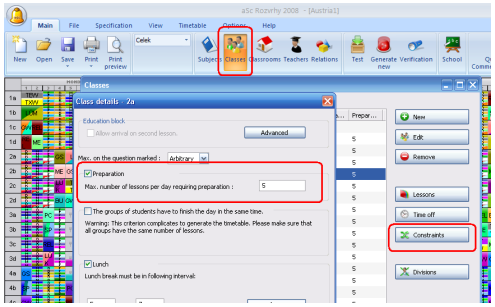
4 Data input - Subjects

4.1 Homework preparation



When adding a new subject or editing an existing one, you can use the check box highlighted in the picture to mark those subjects that require homework preparation.

You can then specify the maximum number of these subjects that can be taught in one day. You can specify this individually for every class:



This way you can balance the time students need to spend preparing for school every day. You can avoid situations where a class would have one 'easy' day, e.g. informatics, physical education or ethics, followed by a 'hard' day with a lot of subjects with home preparation.

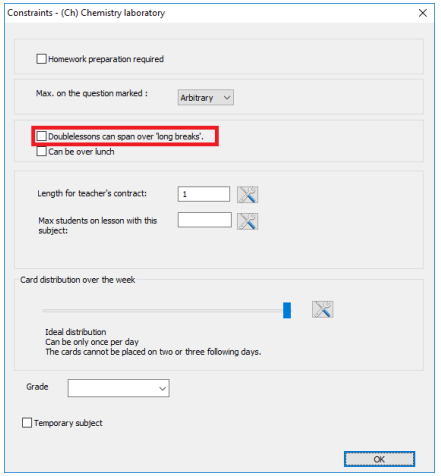
4.2 Double lessons cannot span over "long breaks"

For certain subjects you can specify that the double lessons cannot span over long breaks. For example you do not want to let children have their snacks in the middle of chemistry laboratory lesson.

First you have to add the breaks into the timetable:
10.5 How can I print breaks between lessons?

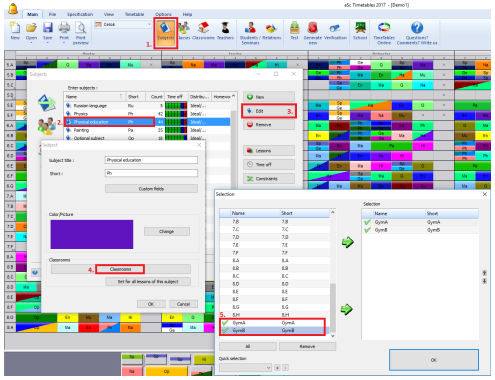
Then by default all double lessons cannot span over these breaks.

If you allow certain double lessons to span while others not that you can define for each subject individually if double lessons of this subject can or cannot span over the breaks. You can do this in subject's Constraints:



4.3 Subject classrooms

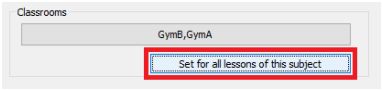
After you click in menu Subjects on Edit/Classrooms the following dialog will appear:



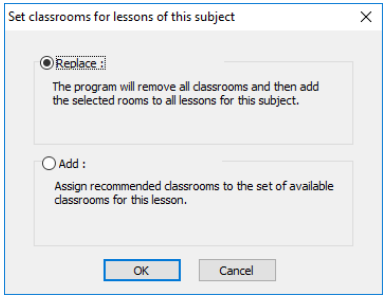
Here you can specify the classrooms in which a particular subject can be taught.

This function can be used in two different ways:
1. Every time you add a new lesson, the program will automatically, according to the entered subject, fill in classrooms and thus save you effort during entering. Of course, you can always change classrooms, if a specific lesson requires it.

2. The second option is to use the button 'Set for all lessons of this subject'.



By doing so you can Replace/Add classrooms for lessons you've already specified.

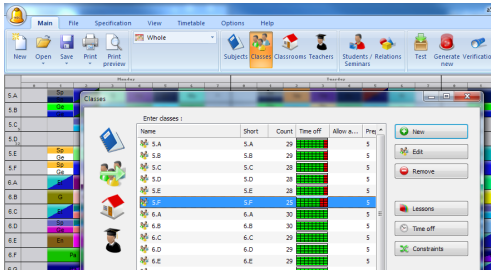


5 Data input - Classes

5.1 What are classes (grade levels)?

Class
is a group of students that have the similar schedule.

For example the school has divided the 5th grade students into six classes - 5A, 5B, 5C, 5D, 5E, 5F:

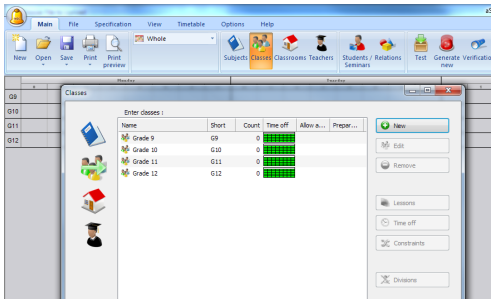


Students that belong to 5A then have more or less the same timetable. It will probably not be the same for each kid in 5A, because class "5A" can be further divided into groups.

Individual students/gymnasiums
Most schools do not need to individual students - the lessons are defined as Math for 6A.
Or Physical Education for 1A/boys.

For certain schedules it is however necessary to input individual students. Each student will belong to exactly one class. So for example John from 4A.

US high schools
If there are no clear groups of kids that have similar schedule, then you can just input one "class" for each grade. Something like:



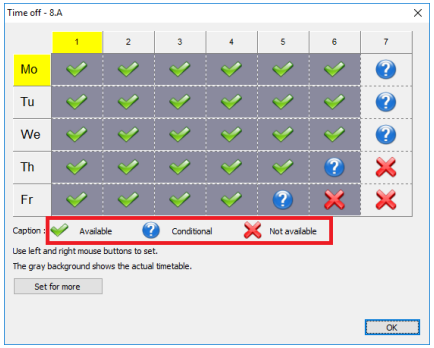
The word class will not represent individial lesson. For this we use words "section" or "lesson".

Notes:
- It is possible to freely combine both aproaches in one timetable - some lessons can be defined for classes, some lessons for individual students.
- you can also create lessons that will be for joined "classes".

5.2 Class time off

By clicking on Time off... you can specify when a specific class can and cannot have lessons. For example, if class 8.A attends a holy mass every Wednesday morning, or the children have to stand every Friday afternoon on honor guard at the monument of your famous national poet, you can disable lessons in the timetable for that time.

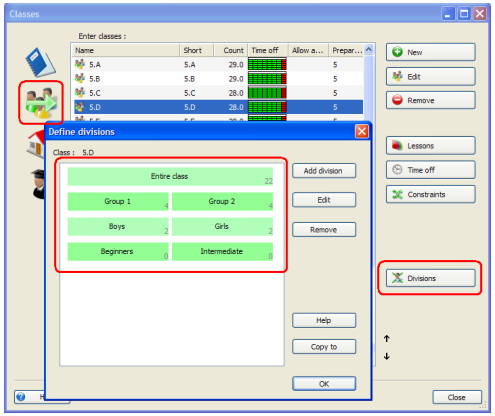
You can specify the suitability by clicking on the cells or row/column headers.



See also:
3.2 Time-off

5.3 Divisions

Each class can have any number of divisions. Each division can divide the Class into unlimited number of groups:



When creating a lesson, you always specify a group for this lesson. For example Physical education - 2 times per week for the group Boys. Or English lesson - 3 times per week for the group Advanced. Or Math - 3 times per week for the Whole class, since the Whole class is also a group.

The program will automatically create these initial divisions for a new class:

Division 1: 1st Group / 2nd Group
Division 2: Boys / Girls

Lessons for groups in one division can be taught simultaneously.

It means that if, for example, group 'Boys' have a lesson at a certain time, only lessons for 'Girls' can run simultaneously with it. Lessons for the '1st group' can't be taught at that time (because probably there are some boys in the '1st group').

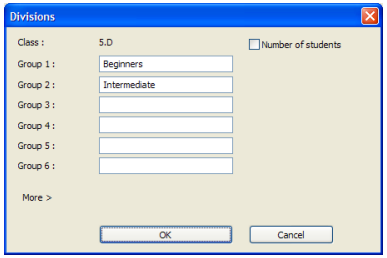
You can also create other divisions, e.g. divisions consisting of 3 groups according to the skill level or other criteria:

Division 3: 1st Third / 2nd Third / 3rd Third
Division 4: Beginners / Intermediate
Division 5: English students / German students

Again lessons for the '1st Third', the '2nd Third' and the '3rd Third' can be taught simultaneously. But a '1st Third' lesson can't be taught at the same time as Beginners or Intermediate lessons.

The dialog shows the divisions for a specific class. Each line represents one division, in which all groups are entered. Divisions can be changed by clicking on Edit or by double-clicking on a line in the dialog Define divisions.

It is also possible to add a new division by clicking on Add division. In both cases a dialog will appear inside which you can enter the names of individual groups.



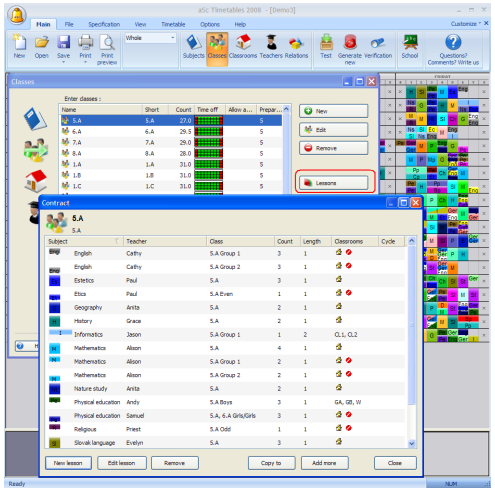
Type in the group names on respective lines. After you click on OK, the program will select filled in lines and it will interpret them as names of new groups.

It is possible to delete whole divisions. In that case all lessons that are assigned to these divisions will also be deleted. If you edit division group names and you don't change the number of groups in the given division, everything will be preserved. Thus you can correct spelling mistakes or modify group names in the division.

See also:
[9.1 Typical situation: Two teachers are teaching two subjects in one class at the same time]

5.4 Class lessons

By clicking on Lessons you can display lessons assigned to the class.

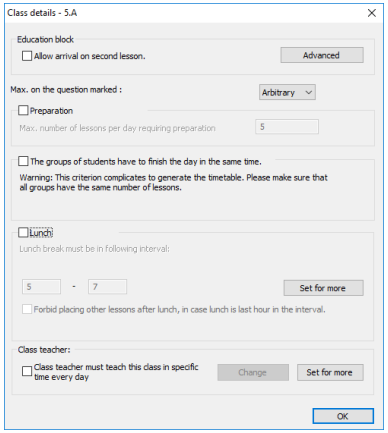


The standard procedure starts with entering of classes, followed by entering of teachers with their individual contracts.

As the procedure of entering of lessons for a class is the same as the procedure of entering of teacher contracts, we will describe both methods in the part about entering teacher contracts in this article: [6.4 Contracts]

5.5 Details

After you click on the button Constrains the following dialog will appear:



In this dialog you can:

1. Set the education block. You can allow the class to arrive on second lessons (students will stay at home during the 1st period). For the more advanced options you can use the button Advanced. See: [17.2 Education block - allow some classes to come later or to leave school later.]

2. Enter the maximum allowed number of lessons per day that require preparation. See: [4.1 Homework preparation]

3. Decide if the groups of students have to finish the day at the same time. See: [17.6 Both groups have to finish the education at the same time!]

4. Allow the time for Lunch. See: [5.6 How to specify when a class can have a lunch?]

5. Set maximum allowed number of lessons on question marked positions, i.e. the maximum number of lessons that can be placed in positions marked with the "?" in Time-off. See: [17.1 How to specify that class can have max one 7th lesson or max one 0lesson?]

6. You can set that the Class teacher must teach the class in a specific time during the week. See: [15.6 Our class teachers always have to teach the 1st lesson]

Note: You can input these options anytime during the schedule creation process. So for a start you can ignore them and maybe later when you are fine-tuning your schedule you can input more conditions.

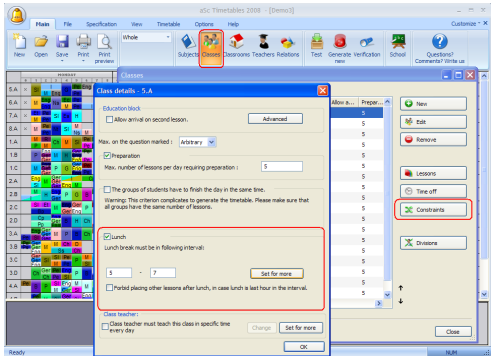
5.6 How to specify when a class can have a lunch?

If your students have the lunch during break between 5th and 6th period or if all your students can have their lunch after their lessons, you don't need to care about entering lunch in the program.

If all classes have lunch during 6th period, you can define this with Time-off for classes. Just check out period 6 in Time-off. (you can do this also if e.g. class 1-4 have lunch break on 6th periods and classes 5-8 have lunch break on 7th periods - just define Time-off for classes correspondingly).

However, if your students have to have the lunch during 5th or 6th period, and program has to choose one of these periods, you have to specify it, so that algorithm leaves some period empty for them each day. You

can specify this in Class/Constraints:



If you for example specify that the lunch must be between 5-7th periods, the software will then leave one free period in that interval. Either 5th or 6th or 7th. So the students will have at least one period free for lunch every day.

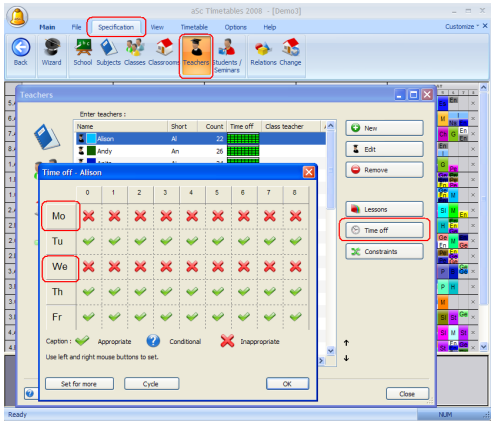
You can also specify that you do not want to have teaching after the lunch in case they have lunch in the last period of the specified lunch interval.

A special case when you do not want to have just one lesson after the lunch:
17.5 Avoid single lesson after lunch break.

6 Data input - Teachers

6.1 How to set teacher's timeoff

In Teachers dialog you can specify when each teacher can teach. It is possible to set this in menu Specification - Teachers - Time off.

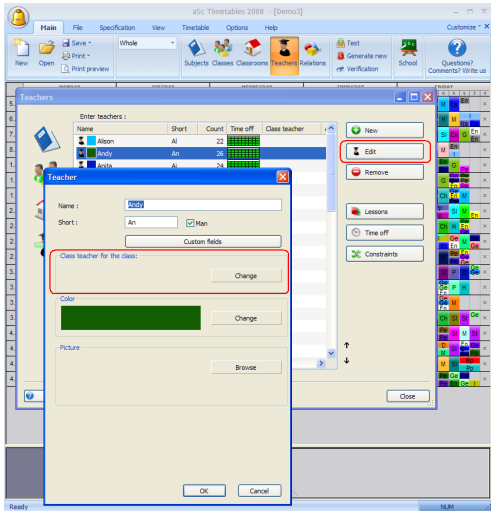


By clicking on a concrete day (in row) or a period (column) you can turn whole row or column into desired option. By one click you can set that this teacher cannot teach e.g. on Mondays or can not be teaching on 1st period.

If you have teachers who teach only two days per week and it doesn't matter which ones - please see also:
15.1 We have teacher who teaches only 2 days per week and it doesn't matter which

6.2 How can I specify CLASS main teacher?

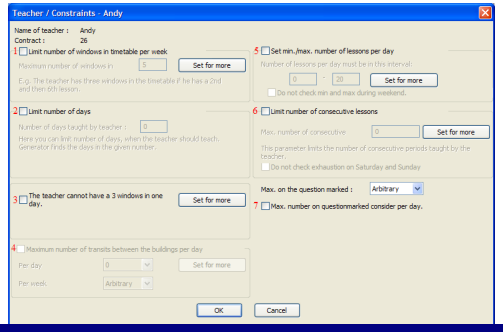
Please check this picture:



Note: the class teachers are used mostly for substitution software and in the printouts, they are printed in the top-right corner of class's timetable.

See also: 15.6 Our class teachers always have to teach the 1st lesson

6.3 Inputting Teacher's details



In this dialog you can do these things:

1. and 3. **Limit number of windows in timetable** for the teacher and **The teacher cannot have 3 windows in one day**. See: 15.2 Teachers' windows in timetable

2. **Limit number of days** during which teacher can teach. See: 15.1 We have teacher who teaches only 2 days per week and it doesn't matter which

4. **Maximum number of transits between the buildings per day.**
See: 21.2 Transfers between buildings

5. **Set min./max. number of lessons per day**. See: 15.9 How to specify min and max lesson teacher shall have on one day?

6.**Limit number of consecutive lessons**. The number specifies the maximum number of lessons the teacher can teach in a row without a break. See: 15.7 Our teachers cannot teach more than 6 lessons consecutively

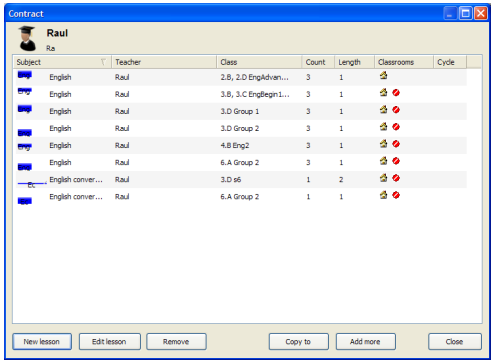
7. **Max. on the question marked.** See: 15.8 How to specify a teacher can teach only one 7th lesson

Notes:
- if you do not specify data in points 1 and 6, global values, set in Timetable/Parameters will be applied.

- you can also press "Set for all" button to copy the setting to more or all teachers.

6.4 Contracts

After you click on **Lessons** or after you enter a new teacher in wizard, the following dialog will appear:



The same dialog appears when you are editing lessons of certain Class.

Each line represents one lesson. Displayed data: subject, class(or classes in the case when he/she teaches joint classes), lesson duration, number per week, groups in a specific class, classroom, cycle and more teachers.

Double click on each line to edit the lessons properties.

At the bottom there are buttons for adding, editing, or deleting a contract.

As in other lists you have the option of sorting the list by clicking on the column headers. Using the maximize icon at the right upper corner you can maximize the window to full screen.

Using CTRL or SHIFT you can select more lessons and delete them or copy to another class/teacher.

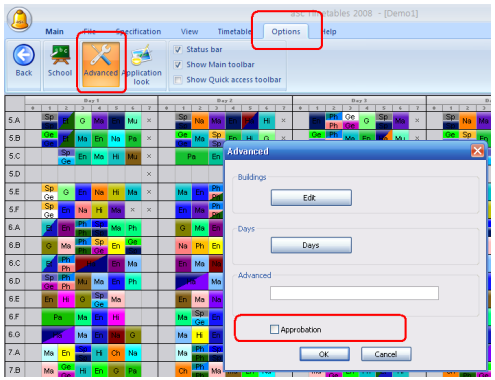
See also:
7.1 Adding and Editing a lesson

6.5 Approbation/Certification

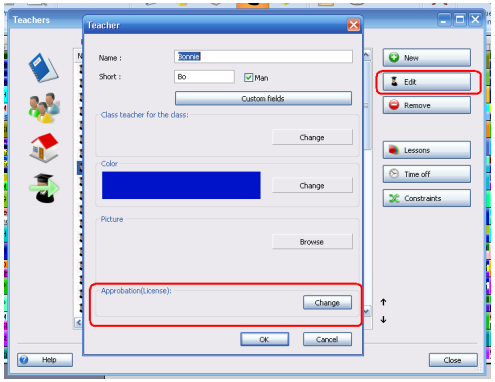
For each teacher you can to input subjects he/she has approbation/license to teach.

This information is used only in substitution software to determine appropriate replacement for the missing teacher.

First you have to tell the software you want to use the approbation:



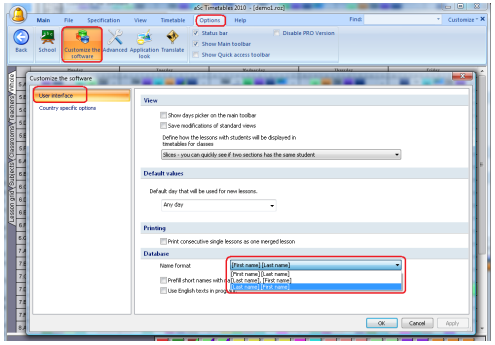
Then for each teacher you can select subjects he has license for:



6.6 Configure name format (First name / Last name)

When exporting data from aSc Timetables, you may sometimes find that first and last names are mismatched. You get "Last name" exported as "First name" in external system.

To fix this, you have to configure format of the names in aSc Timetables. You can do this in menu - Options - Customize the software - User interface - Database - Name format.



Usually you will want to set format from:

[First name] [Last name]

to:

[Last name] [First name]

or (names separated with comma):

[Last name], [First name]

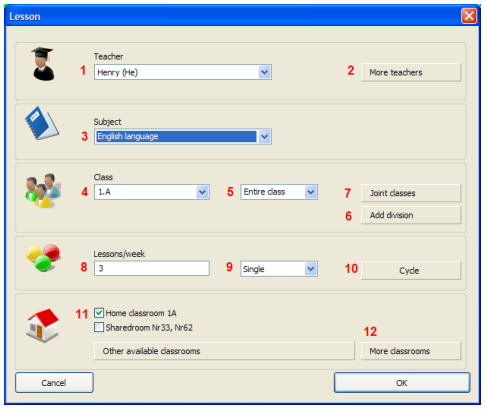
Don't forget to save your timetable after you have configured this. Then try export the data again.

Note: The same setting applies also to import. You have to configure this before you start import.

7 Data input - Lessons

7.1 Adding and Editing a lesson

Lesson is the most important item for the generation. Lessons can be created from Teacher's/Contract or Class/Lessons dialog. In both cases the following dialog is displayed:



1. **Teacher**: Here you can select teacher who is teaching this class. You can also choose "Without teacher" if you are inputting some special lessons or you have not yet decided about teacher for this lesson.

2. **More teachers** : By clicking on this button you can add other teachers to this lesson in case some teachers teach together. Be careful this means that those teachers will teach that lesson together in the same classroom. So if you specify that boys from 5A have lessons with 2 teachers then it means that boys will play football with two teachers. This can be good if one teacher is there just to take care of some disabled or talented boys. This is not the place where you specify teacher that will teach girls at the same time. You will specify the girl's teacher while inputting the girl's lessons.

3. **Subject**: By clicking on the arrow on the right you will display a list of subjects. You can select a subject with the mouse or by typing in starting letters.

4. **Class** - Similar to the subject, here you can select concrete class

5. **Group** - here you can choose group of class from existing divisions

6. **Division** - You can also add a new division.

7. **Joint classes** - If classes are put together, click on the button Joint classes...

8. **Number of lessons per week**: Enter the number directly.
This number means how many lessons of this subject should be taught in this class per week.

9. **Duration**: The lesson can last for one, two, three, or more lesson hours (periods).

10. **Cycle** - If your school runs on other than one week cycle then you can define it here.

11. **Home classroom** - Mark this option, if the lesson can be taught in the home (basic) classroom.
Shared classroom - Mark this option, if the lesson can be taught in one of the group (shared) classrooms.
Available classrooms - Abbreviations of other enabled classrooms. You can change them with the Change button.

12. A lesson might require **more classrooms**.

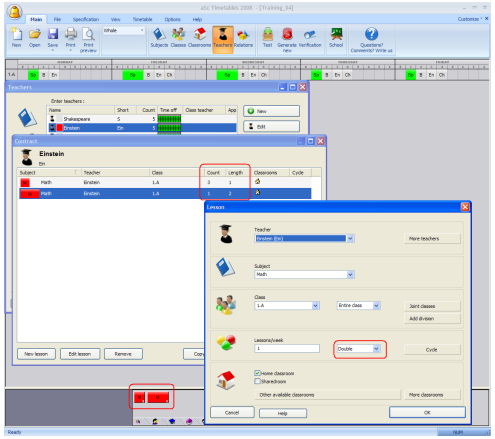
See some common special situations:
9.5 How to specify lessons where students are joined from two classes?
7.4 I want to have Single AND Double lessons of one subject! E.g 1+1+1+2
8.2 What is shared classroom? What is home classroom?
9.6 How to combine lessons of two divisions of class on one position?
7.2 How can I define Double/Triple etc lessons?

There are many different possibilities on how to input different situations. Please check all the 'Data Input' chapters on how to input the special situation you have on your school.

You might also want to use the lesson grid interface that allows you to input the lessons faster in many situations. Check this article: 12.1 Lesson grid overview

7.2 How can I define Double/Triple etc lessons?

For more details please check this picture:



7.3 Double lessons appear to be doubled in the timetable, what is wrong?

This happens when you enter one double lesson per week in the Lesson dialog with:

Lessons/week (count): 2
Duration: Double

If you enter this, it means that there are two lessons and each of them has duration 2 periods, and this is 4 periods together.
If you wish to have just one double lesson, enter:

Lessons/week (count): 1
Duration: Double

Similarly, if you want two double lessons, you should use:

Lessons/week (count): 2
Duration: Double

instead of:

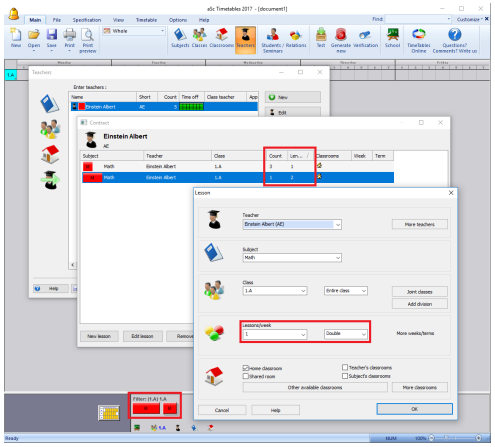
Lessons/week (count): 4
Duration: Double

and so on...

7.4 I want to have Single AND Double lessons of one subject! E.g 1+1+1+2

You can simply add into teachers' lessons that he is teaching e.g. 3 single and 1 double.

Please check this picture.



It means he is teaching 1+1+1+2 = 5 lessons per week.

Notes:
- If you do not know how many of these lessons will be double and how many single please read this article:
7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.

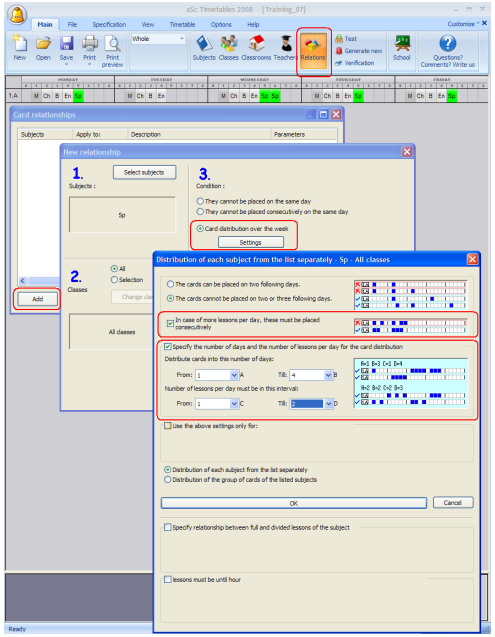
- You can also use lessongrid to input this combination in easier way. Just open lessongrid and type 2111 in desired cell. See 12.1 Lesson grid overview and 12.3 Count per week - format

7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.

If you do not know the distribution from the start and you want to computer to decide you have to do it like this:

1. Define that you have 5 single lessons per week.

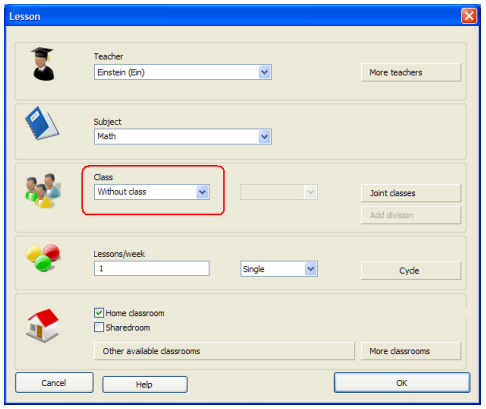
2. Define a card relationship like shown on this picture:



See also:
16.17 There can be two maths on one day, but not consecutivelly
16.18 There can be two math lessons on one day, but they need to be placed consecutivelly

7.6 How can I define lesson without class? Eg. Teacher's meeting or preparation time

Please check this picture:



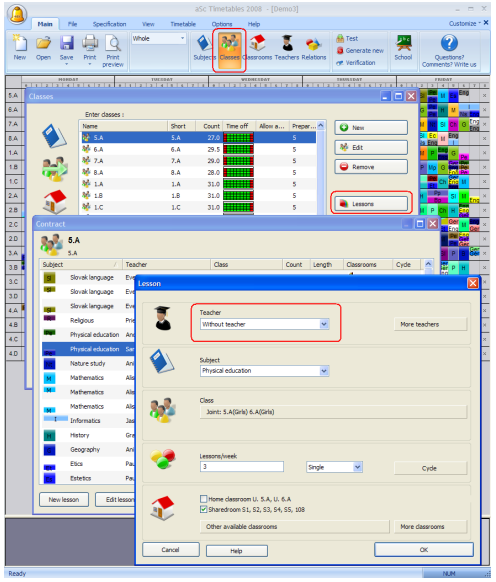
Lessons without class can be used to specify some activities for teachers only. Some administration work, preparation etc.

A good example is to create a lesson with all math teachers without any class. By doing this you can make sure that all math teachers have time to meet and discuss some math teaching strategies at the same time every week.

20.6 Maximum one planning time lesson per day

7.7 How can I define lesson without any teacher?

You can do this from Classes/Lessons dialog:

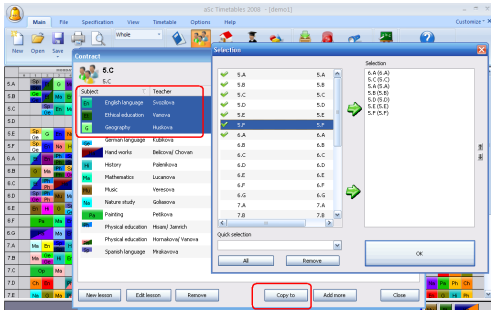


See also:
12.4 What do the colors in lesson grid mean?

7.8 How can I copy lessons

1. Select the lessons you want to copy. Press CTRL and click several rows if you want to copy more lessons.

2. Press Copy To button:



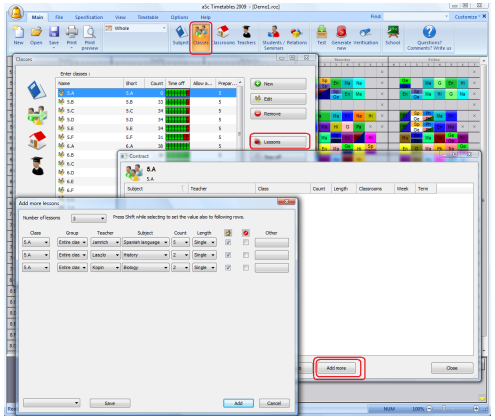
3. The software asks you to which classes you want to copy the selected lessons.

Note 1: if you are copying lessons without class, then the software asks you for teachers to which you the selected lessons will be copied.

Note 2: If you want to modify the lessons that are being copied a bit more, select them using CTRL and press 'Add more' button. Here you can change more then just class before the lessons are added back into the timetable. See:
7.9 Adding more lessons at once

7.9 Adding more lessons at once

If many of your teachers/classes have the same or similiar lessons, you can use button Add more and add several lessons at once:



Select the number of lessons that you want to add in the combobox and then each row will represent one lesson.

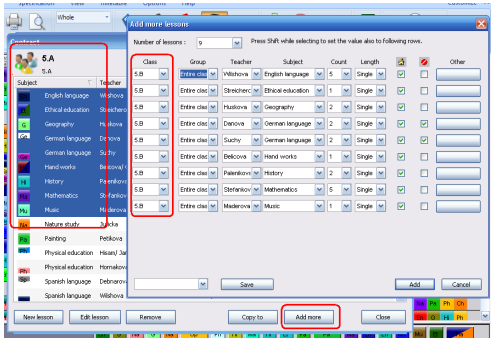
Press button Add when you are done with lesson input.

Using this dialog has several advantages:

1. After you input your lessons, you can save this lesson group by pressing Save button. The software will ask for a name of this lesson group. Next time you just need to select this name and the same lessons will be added to another class or teacher.

2. You can press SHIFT to modify the whole column at once.

3. Also you can select several lessons in the Lessons dialog, then press 'Add more'. The selected lessons are automatically filled into the dialog. Then use SHIFT to change columns if needed and add the modified lessons to the timetable:



See also:
7.8 How can I copy lessons

8 Data input - Classrooms

8.1 Assign lessons to classrooms

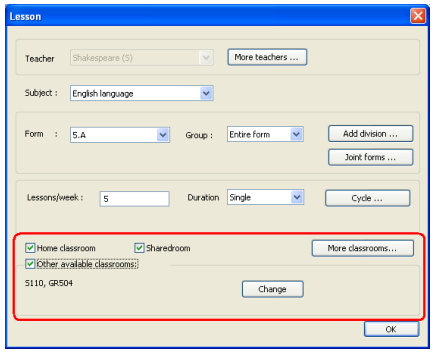
Question: How to assign lessons to classrooms? Our school has a limited number of classrooms and we need to check classroom availability during timetable creation.

1. First, you have to input classrooms.

Go to menu Specification/Classrooms. Here you have to input all the classrooms available at your school. For each classroom you can specify whether it is a shared classroom or a home classroom (see below).

2. Second step is to specify the available classrooms for every lesson.

You can specify the available classrooms for the lesson in the Lesson editing dialog. The bottom part of this dialog allows you to specify classrooms:



There are 3 check boxes that you can use to specify classrooms:
Home classroom, Shared room and Other available classrooms.

You can select one or more check boxes, e.g. both Home classroom and Shared room. In this case the software will assign either home classroom or one of the classrooms marked as shared.

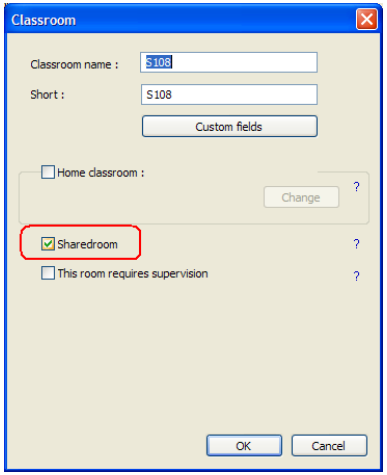
Every card of lesson goes to one of the available classrooms.

See also:
8.2 What is shared classroom? What is home classroom?
8.3 How can I specify default (usual) classrooms for certain subject?
8.4 How can I specify teachers home classrooms?
8.5 How can I assign classrooms to more lessons at once

8.2 What is shared classroom? What is home classroom?

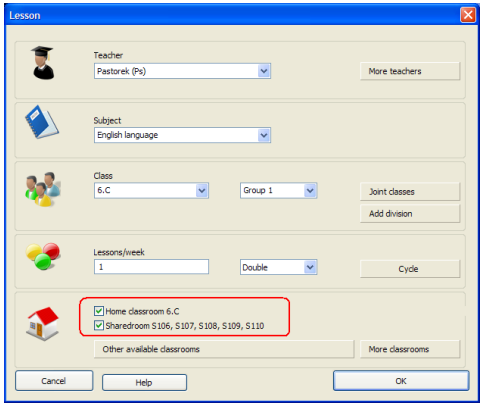
Shared classrooms and home classrooms are only shortcuts to make your data input easier.

When inputting classrooms, you can specify that some of them are 'Shared rooms' or 'Home classrooms' for certain classes:

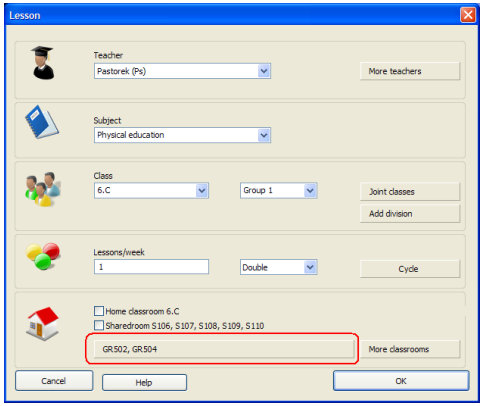


Later when you are inputting lessons you can specify that this lesson will be located in one of classrooms marked as shared. So you do not need to specify all these rooms, but rather with one click specify all the possible rooms.

For example the English lesson is divided into two groups, the first group stays in home classroom and second goes to any room marked as shared:



For specific lessons like physical education you will not use home classrooms or shared rooms but rather specify the exact room(s):

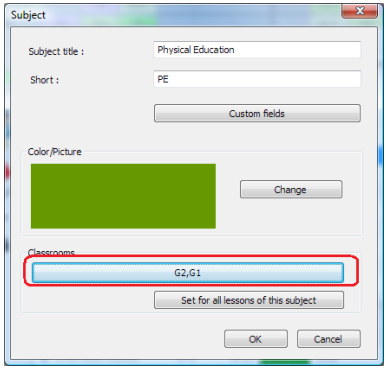


Important: the software will use ONE of the specified rooms. So if you say this lesson can be in shared classroom or in GR502 or in GR504 the software can use one of the shared classrooms or GR502 or GR504.

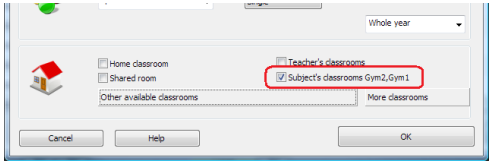
See all Classroom topics

8.3 How can I specify default (usual) classrooms for certain subject?

For each subject you can specify that lessons of this subject have to be in certain classroom:



Once you specify this information all newly inputted lessons of this subject will be set to use the specified classrooms:



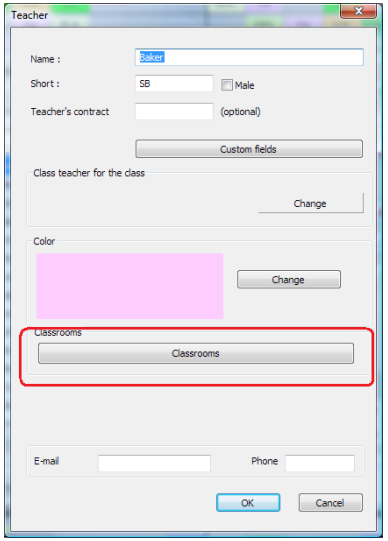
For existing lessons those with subject classroom checked will be affected. For example if you have PE lesson that has use subject's classrooms checked and you added new Gym classsroom to PE then all PE lessons will be allowed to go also into this new room. However if there is some special PE lesson that do not have this checkbox checked it will remain unchecked. For example that special PE lessons was in Swimming pool, so it will remain in swimming pool.

If you want to change the classrooms for already inputted lessons you can use the button "Set for all...", where you can add or completely replace the classroom information for all lessons of this subject.

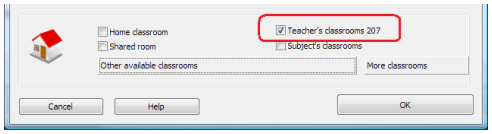
See also:
8.4 How can I specify teachers home classrooms?
or
8.2 What is shared classroom? What is home classroom?

8.4 How can I specify teachers home classrooms?

You can edit any teacher and specify his/her classrooms:



Then in the lesson definition you can specify that the lesson has to be in the one of the teacher's classrooms.



This option is automatically selected for new lessons that have teacher with own classrooms. You can of course allow another classrooms.

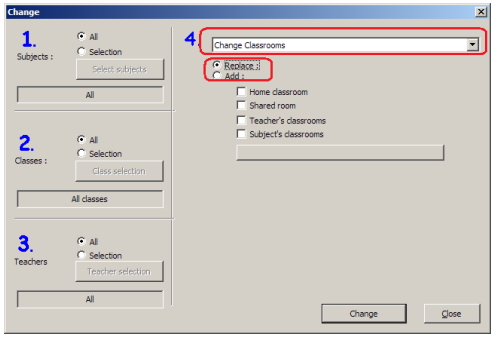
Note: if the subject has own classrooms then these are taken as priority and teacher's classrooms are not taken into account by default. So for example if teacher is teaching History in his room and he also teaches Physical Education then PE lessons will by default be only in Gym rooms defined by the subject. Again this can be changed by you at anytime.

See also:
8.5 How can I assign classrooms to more lessons at once
and
8.2 What is shared classroom? What is home classroom?

8.5 How can I assign classrooms to more lessons at once

You can do change the available classrooms for multiple/all lessons at once using menu Specification/Change.

Here you can specify, that for example all lessons of certain subject with certain teacher have to be in specific classroom:



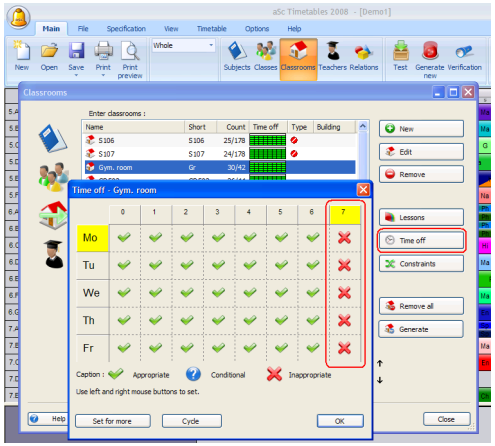
Note: this changes the available classrooms for all lessons that are already inputted. It does not affect the lessons that you will input later.

See also:
8.3 How can I specify default (usual) classrooms for certain subject?
8.4 How can I specify teachers home classrooms?

8.6 How to specify that we cannot use classroom at certain times?

As with other objects (teachers, classes,...) you can use time-off to define when you can use certain classroom.

So for example if you rent out the Gym room after 6th lessons you can specify it like this:



More on time-off can be find in this article:
3.2 Time-off

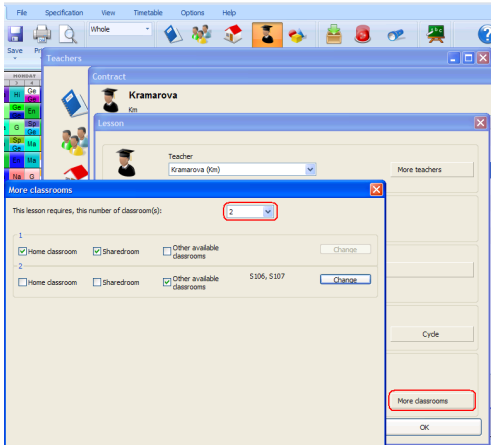
8.7 Lesson requires more classrooms

Some of my lessons require more classrooms.

Example 1: I have English lesson that has 2 classes and 2 teachers joined together, but I need them to have two rooms allocated.

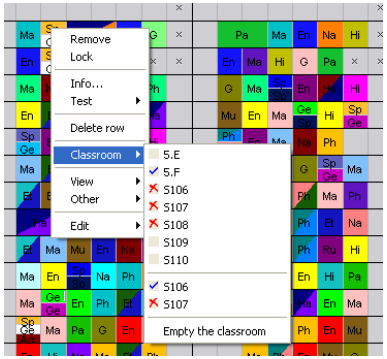
Example 2: I have only one gym room. But this one is big enough so in most cases it allocates two classes. So I divided this gym room to GymA and GymB. However there are some classes that have many boys and they require both A and B Sections.

Solution: When defining lesson you can use More classrooms button:



The above picture requires algorithm to allocate two classrooms. One will be home classroom or one on the classrooms marked as shared and second will be either S106 or S107.

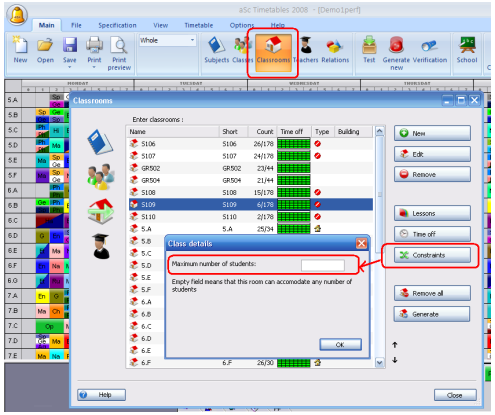
When editing the timetable manually you can see this in the classrooms pop up menu:



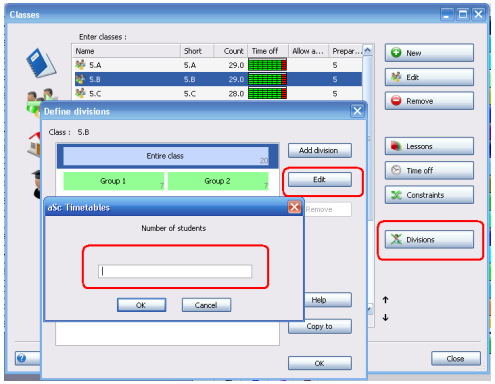
See also:
[8.1 Assign lessons to classrooms]

8.8 Classroom capacities

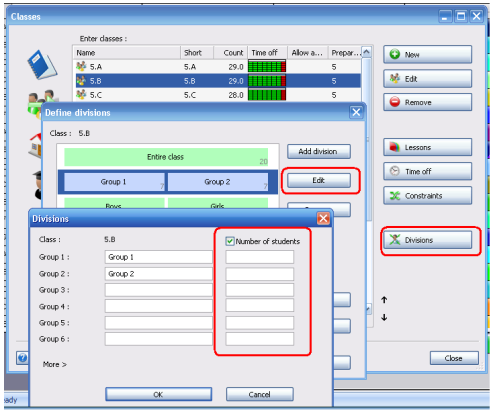
For each classroom you can specify the maximum number of students it can accommodate:



Then for each class you can specify the number of it's students:



You can also specify the size of each group if you are using the groups:

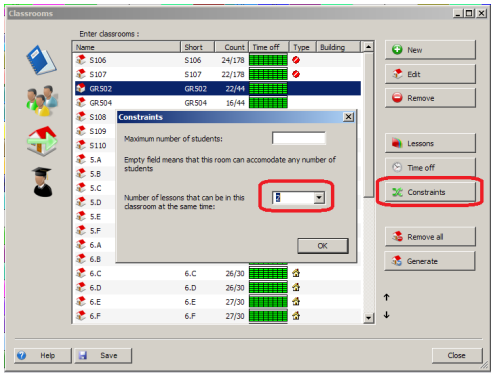


See also:
[22.16 How can I display capacities and students counts on the cards?]

Note: **you do not need to specify this information**. Specify it only for rooms where you are expecting the problems. Usually it is enough to specify the available classrooms for each lesson. See:
[8.1 Assign lessons to classrooms]

8.9 Two classes in the same room at the same time (Solution 1)

You can specify that classroom can accomodate more lessons at once:

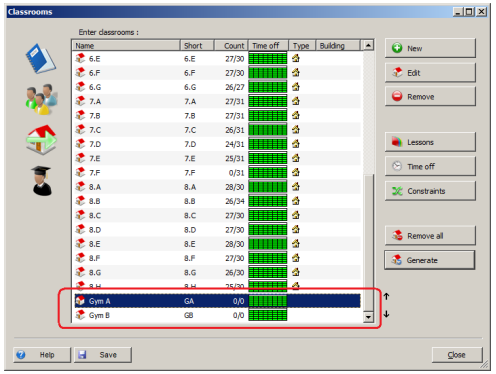


See also:
[8.10 Two classes in the same room at the same time (Solution 2)]

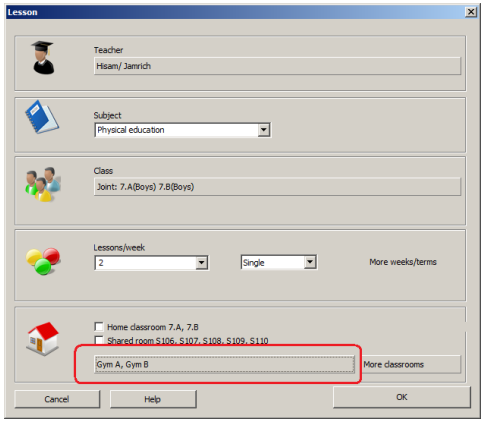
8.10 Two classes in the same room at the same time (Solution 2)

If a room can accomodate two classes at the same time, you can input it by creating two "rooms".

For example: if a Gym room can hold two classes, you can imagine it like having two rooms: GymA and GymB:



Then you can input that Physical Education lesson can be in GymA **OR** GymB:



Notes:
-you cannot use the original Gym room(because then software can place one lesson in Gym and another at the same time into GymA and third into GymB)
- if you have big class with many students that require the whole Gym, then you have to input that this lessons requires 2 classrooms GymA AND GymB.

[8.7 Lesson requires more classrooms]

See also:
[8.9 Two classes in the same room at the same time (Solution 1)]

8.11 My lessons are not placed in classrooms/Adding classrooms into created timetable

During the input you need to specify available rooms for each lessons. The generator then places a card only when one of the possible rooms is available. So in the generated timetable all lessons are placed in their rooms.

If you manually place a card into the timetable, the software again automatically selects one of the possible rooms.

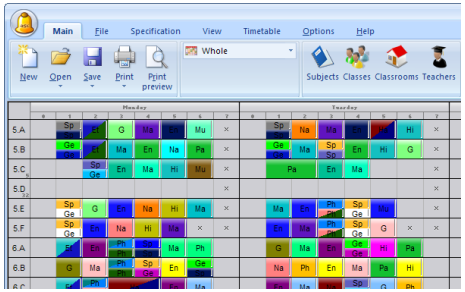
However, it can happen that some cards placed in your timetable are placed without proper classroom assigned. There are three ways how this can happen:

- you have manually placed the card into the positition where none of the possible rooms is free(they are all used by some other, already placed cards). The software will then put the card into the timetable, but without assigning a classroom. It will show this with white stripe on the card, plus a grayed card is put into the list of unplaced cards to remind you the room is not assigned.

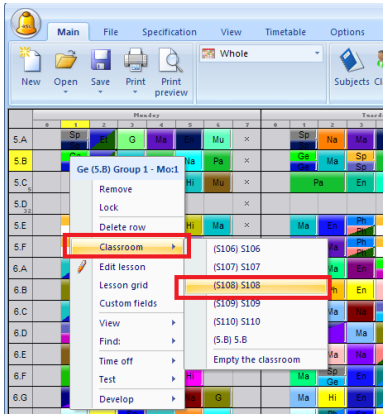
- if you have changed the room definition for some lessons that are already placed in the timetable, or you have removed classrooms completelly

- you have stopped the generator before finishing.

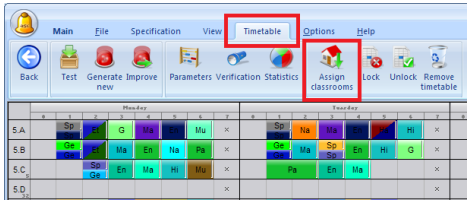
The above cases will leave some of your cards with white stripes:



What now?
1. You can manually choose classroom for each lesson by right clickin it:



2. You can assign all at once:



In both cases it may happen that you or the software will not be able to place all the cards.

For example: if you manually place 3 PE lessons on Monday 1st period, but you only have 2 PE classrooms, then you need to move the lessons.

So any times it is better to generate a new timetable than to manually fix the rooms.

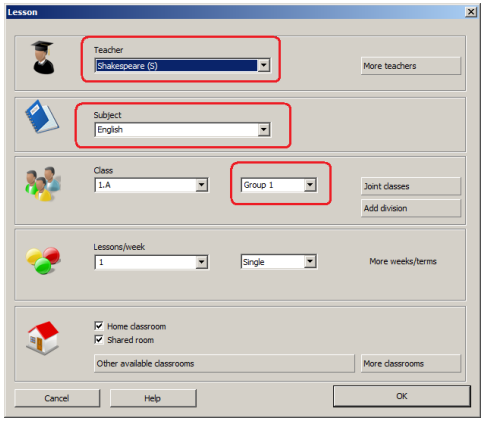
See also:
[8.1 Assign lessons to classrooms]

9 Data input - Groups & Joins

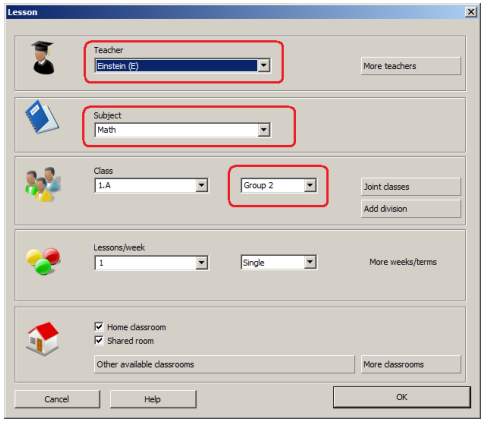
9.1 Typical situation: Two teachers are teaching two subjects in one class at the same time

The software allows you to create lesson not just for Entire class, but you can create lesson for each group of certain class.

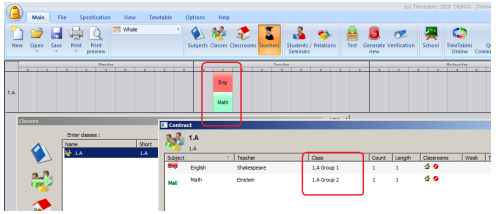
For example you can say the teacher Shakespeare is teaching English:



and the teacher Einstein is teaching Math:



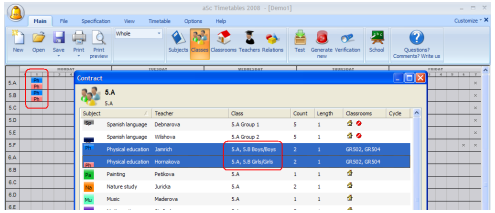
Then in the software you will see both lessons can be placed at the same time:



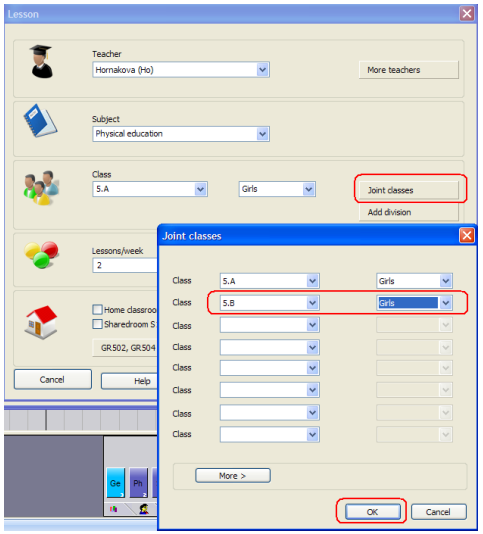
See also:
5.3 Divisions
and
20.3 Groups have to start at the same time
and
9.2 Typical situation: Physical education joined boys and girls from two classes:

9.2 Typical situation: Physical education joined boys and girls from two classes:

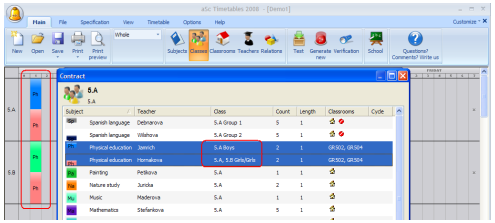
One teacher has boys from two classes, another teacher has girls from two classes:



Use the button Joint classes for this:



If the school has many boys, they have to create two groups of boys. So we have 3 teachers, one for boys in 5A, one for boys in 5B and one teacher that takes girls from 5A and 5B:

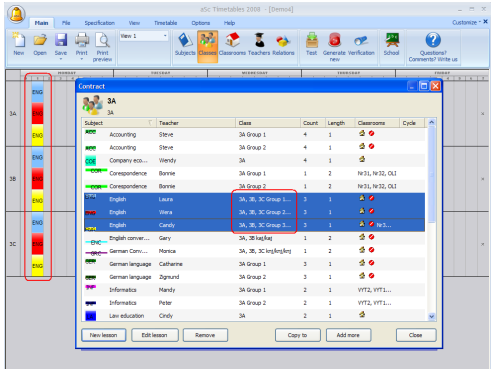


Be careful: The lessons dialog in the above picture shows only the rows for lessons in 5A. So the row for one lesson for boys in 5B is not on this picture.

9.3 Typical situation: Students from the whole grade are divided into groups

Many schools take the students from the whole grade and divide them into groups based on their level.

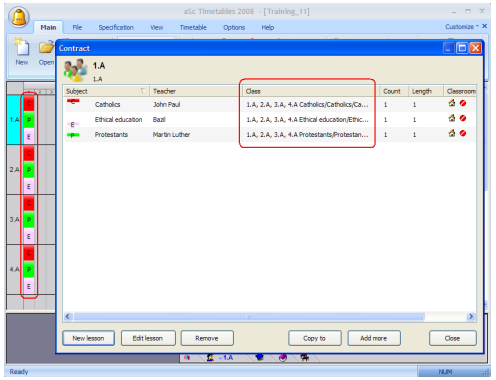
For example they combine the bests students in English from the whole grade:

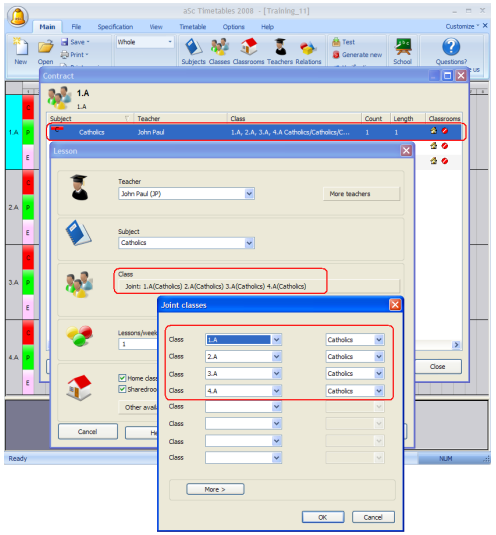


See also:
9.5 How to specify lessons where students are joined from two classes?
and
5.3 Divisions

9.4 Typical situation: Religions

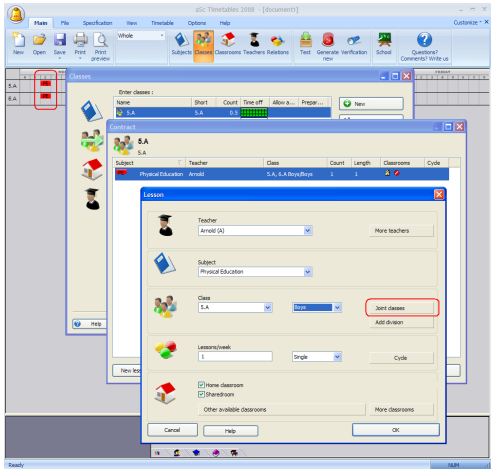
Students from the whole school can choose one of two religions or ethical education:





9.5 How to specify lessons where students are joined from two classes?

To specify such lessons you can use button **"Joined classes"** in **"Lesson"** dialog.

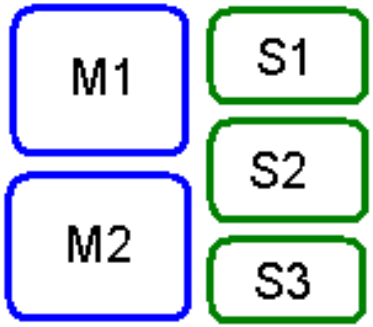


After pressing this button a new window will show up and in particular rows you can choose Classes from which students are joined in this lesson.

In case you want to combine only some students of a class (for example group Boys) then you need to fill field "Group" for each class.

9.6 How to combine lessons of two divisions of class on one position?

It is appropriate in some situations at your school to combine lessons of different divisions on one position. For example, let's have a class where students for Math divide in two groups (M1/M2) and for Spanish language they divide in 3 groups (S1/S2/S3) and content of education is the same in all groups. In such case we can decide to put some students from group M1 in to group S1, some students from group M2 to group S3 and the rest of the students of M1 and M2 we will put in group S2. This way we have provided that students from group M1 and S3 do not overlap so hypothetically particular cards could go on one position (similarly M2 and S1 also).

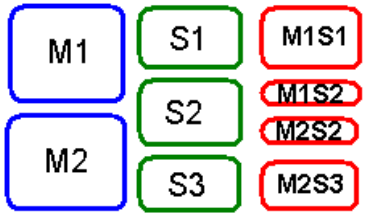


The problem is that program will not allow us to put these cards on one position because these cards are from different divisions. How to solve this situation?

Basically there are two options:

1st option - to create a combined division

Instead of two divisions M1/M2 and S1/S2/S3 we will create one combined division: M1S1/M1S2/M2S2/M2S3. This way in group MxSy there is an intersection of students of group Mx and Sx. Please see this picture:



Then we will specify lesson for M1 as a joined lesson of group M1S1 and M1S2 (with key "joined classes"). Similarly we will specify M2 as M2S2+M2S3 and S2 as M1S2+M2S2. Group S1 is identical with group M1S1 and group S3 is identical with M2S3. This way we achieve that program lets us to combine S1 with M2 and S3 with M1 on one position.

2nd option - to use Seminars

This option is a little bit more complicated and it is necessary to enter list of students into program but advantage is that this way you can solve even very complicated situations.

Please see also:
22.1 What are seminar/course lessons for?

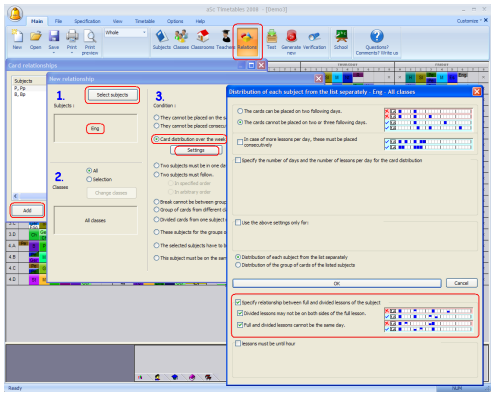
9.7 Full and divided lessons from one subject

On some schools some subjects are taught in the way that for most lessons from subject students have together as entire class, but for e.g. one lesson they split into two groups. In this case it is important to set some constraints so that timetable will be scheduled correctly:

- Divided lessons can not be around full lesson - this is important so that when all students have lesson together, one group will not be one lesson in advance against other.

- Divided lessons can not be on the same day as full - this is important only on some schools.

Please see ecnlosed picture on how to set these constraints.

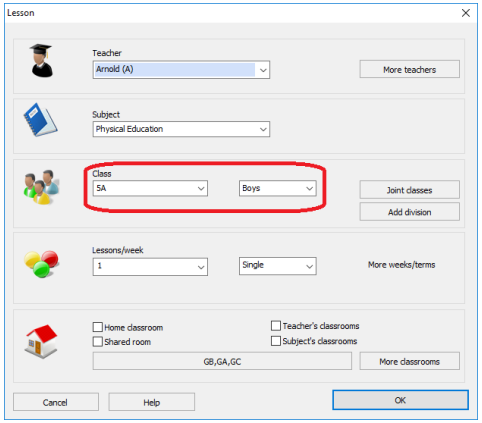


9.8 Typical situation: Physical education, 3 groups in 2 classes

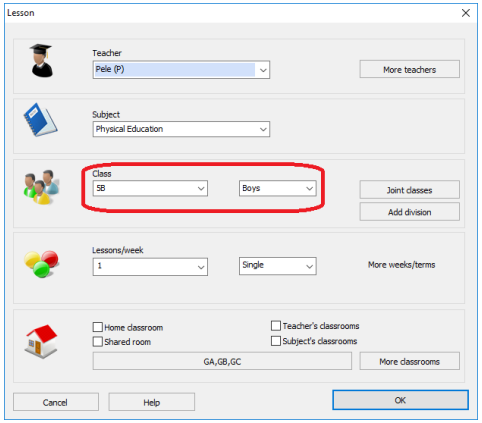
We have girls joined from 2 classes, however boys have separate lesson in each grade.

Solution:
You have to input 3 lessons.

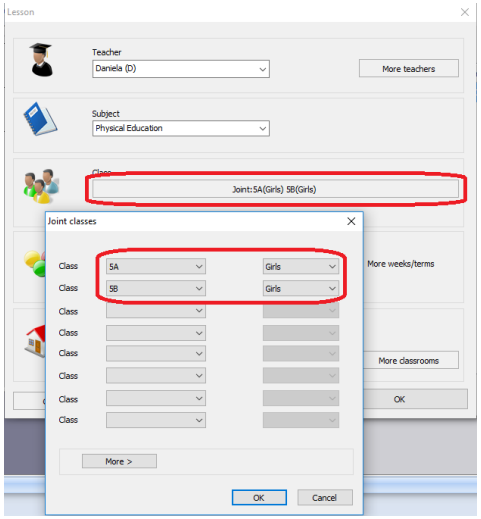
1. Boys in 5A:



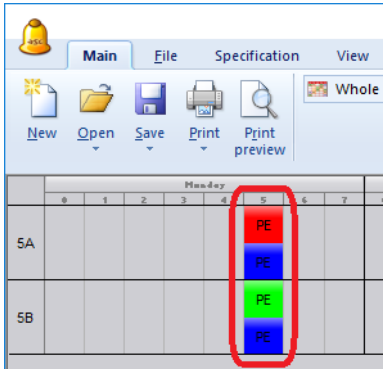
2. Boys in 5B:



3. Girls joined in 5A and 5B:



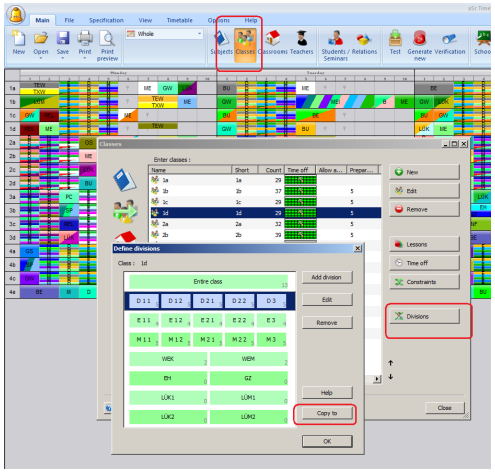
4. Result will look like:



[Sample file can be downloaded from here](#).

Note: for each lesson we have specified that it can be in either of 3 available Gym rooms.

9.9 How can I copy division/groups to different class



9.10 How to input Options - each student needs to select one course from Options1 and one from Options2

For example students from classes 901,902,903 need to select:

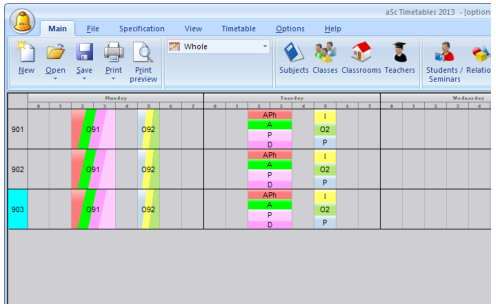
One subject from:
AdvancedPhysics / Algebra / Poetry / Drama

and one subject from:
Portraits / Sculptures / Impressionism

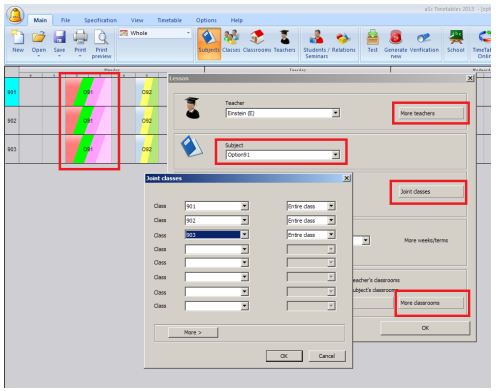
Subjects from option 1 shall be scheduled at the same time.

Solution:

There are two ways how to input the above options. One way is to input it as one big lesson with 4 teachers and second way as 4 lessons each with one teacher:



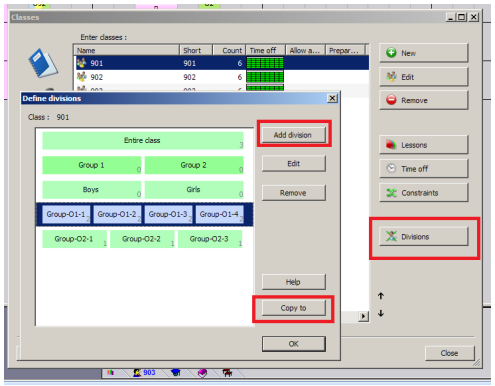
Solution 1:
The fastest solution is to create subjects named "Option1" and "Option2". Then create big lessons with all the teachers that teach subjects in Option1 and join all 3 classes. Use button "More teachers" and "Joint classes":



Make sure you also use button "More classrooms" because this lesson will in reality occupy more classrooms.

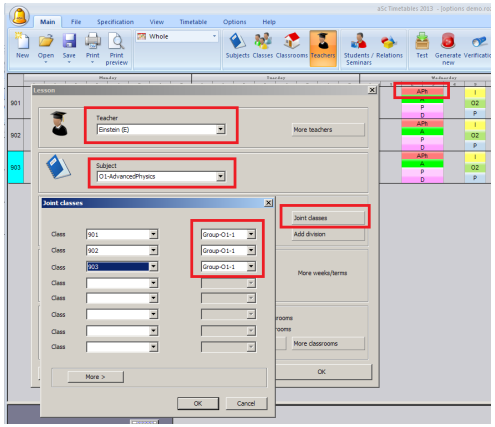
Solution 2:
This solution takes longer to input but has several advantages. First it is clear in the printouts which teacher is teaching what subject and in which room, second, if you are using Substitution software and certain teacher is missing, the software knows what and where has to be substituted.

To input this, you first need to divide your classes into groups:



You need to add one divistion for each option. If you reuse the groups from the same division, the software can mix the lessons from different options.
Use button "Copy" to copy the whole division to another classes.

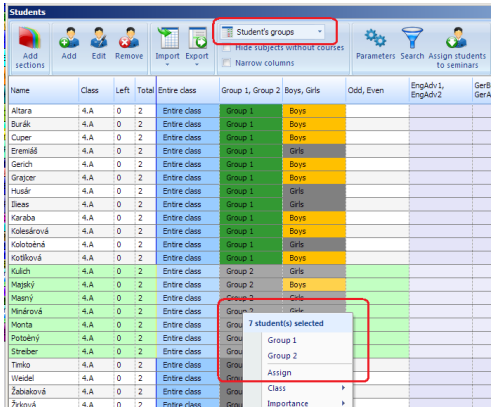
Then you need to input 4 lessons for Option1, one for each subject that can be picked in Option1. Each time you pick one teacher, one subject, joint 4 groups from each class:



You can find the sample file with both ways used here:download here.

9.11 How can I choose which student is in which group?

You can assign students to groups in "Students" window:



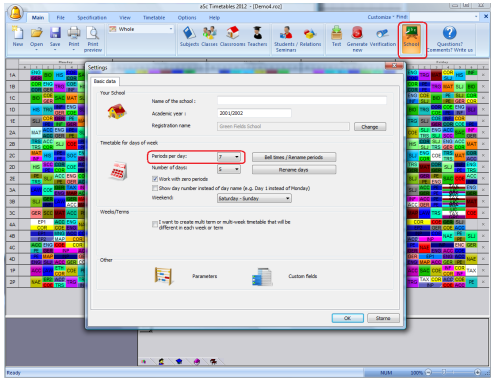
Select class on the right side, then select several students (with Shift+click or Ctrl+click), right click in corresponding column and select group for these students.

Notes:
- This dialog us useful e.g. if you want to print individual timetable for each student.
- Information from this window is used also in Electronic Class Register.
- You can not combine groups from different divisions on the same place in the timetable, even if these groups have different students selected in this window. If you need this, you will have to use Seminars instead of Groups/Divisions.

10 Data input - Bells/Breaks

10.1 Can I set the number of lessons per day?

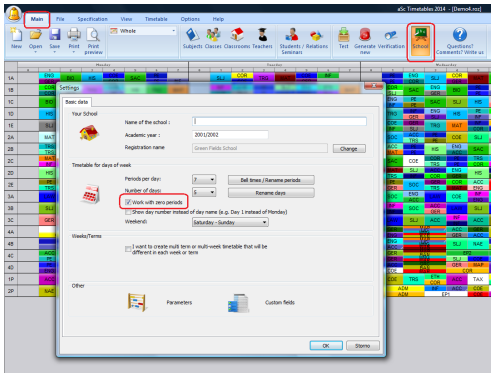
You can set this in menu Main/School:



Note: This is maximum you have on the school.
The software automatically balances the number of lessons per day. So even if you set this number to 15 and class 1A has 30 lessons the software will put 5-6 lessons on each day.

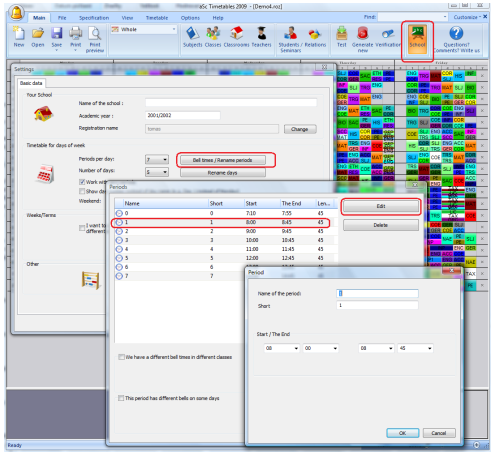
10.2 Can I remove 0. lesson? We are starting with 1. lesson.

If your school is not using 0.lesson(lesson before the first one) you can completely remove it in menu/Main/School. Please check this picture:



10.3 How can I rename periods and specify start and end times for each period? (Bell times)

Similar to renaming days, you can also rename periods. For each period, you can specify name, short name and also start and end times for each period.



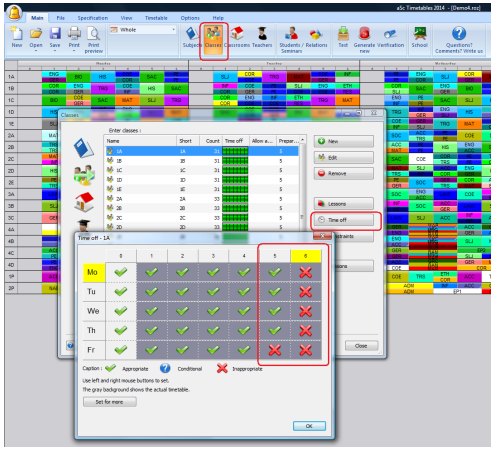
Note: you cannot delete the periods, only the breaks between periods. If you want to change the number of periods, use the combobox in the main dialog.

Notes:
Also please note the checkbox allow zero lesson: This checkbox will turn the period called 0 on or off if you are not using it on your school. You don t need to renumber the 0 to 1 in case you don t have this special 0th period.

See also:
10.6 We have different bells on some days.

10.4 We have 5 lessons each day but on Friday we have only 4

Please check the picture:

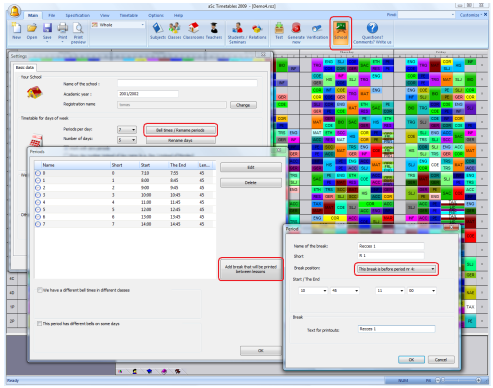


You can specify different timeoff for each class.

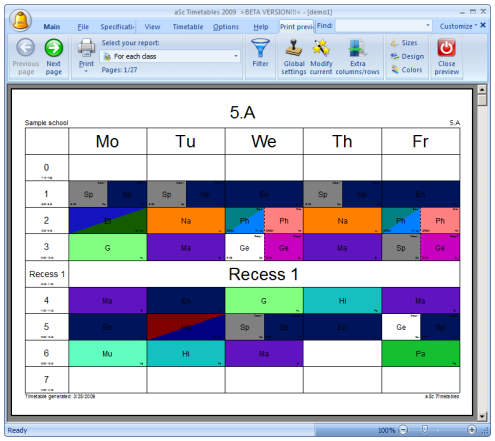
You can use button 'Set to all' to copy this timeoff to more classes.

10.5 How can I print breaks between lessons?

If you have longer breaks that shall be indicated in the timetable printouts, you can add them using button add breaks:



For each break, you can also define a custom text that will be printed in the printouts:

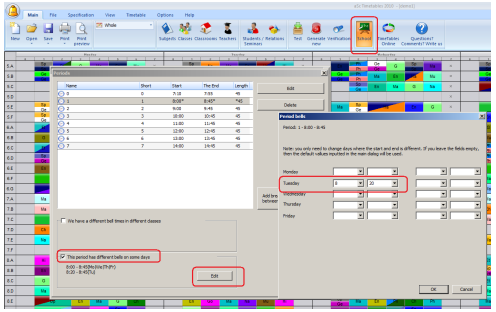


See also:
4.2 Double lessons cannot span over "long breaks"

10.6 We have different bells on some days.

In menu Main/School you can find a dialog for changing the bell times.

If you have different bells on some day, you need to select the period and click the checkbox, then click Edit:



A dialog appears where you can input the times for each day. The default time is displayed at a top, if you do not fill in, then the default time for this period is used.

So fill in just the times that are different comparing to other days.

See also:
27.21 Printing different bell times for school sections/days

10.7 We have different recess times in parts of school. How to input it? (Solution1)

There are some schools that use different recess times for various parts of school, e.g. one recess times for Elementary and other for High school. In aScTimetables you can input only one recess times (called Bells), but this situation can be in most cases handled quite easily with small trick: You have to input your recess not as recess in Bells (menu - Options - Settings - Bell), but as additional period in timetable, which will be disabled using Time-off for classes. Typical situation is like this:

Elementary
1 8:00-8:45
2 8:50-9:35
3 9:40-10:25
4 10:30-11:15
Break 11:20-11:45
5 11:45-12:35
6 12:40-13:25
7 13:35-14:15

High
1 8:00-8:45
2 8:50-9:35
3 9:40-10:25
4 10:30-11:15
5 11:20-12:05
Break 12:05-12:35
6 12:40-13:25
7 13:35-14:15

You can handle this situation by adding new period and setting bell times like this:

1 8:00-8:45
2 8:50-9:35
3 9:40-10:25
4 10:30-11:15
5 11:20-12:05
6 11:45-12:35
7 12:40-13:25
8 13:35-14:15

Then you have to disable period 5 for Elementary classes and period 6 for High classes. So now recess is inputted as disabled period.

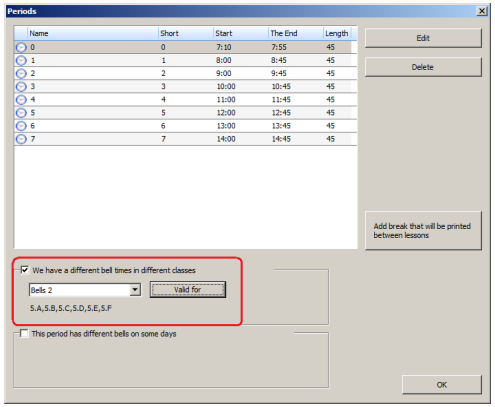
This solution solves problem for classes, but there is still problem with teachers who teach in both parts of school. Times for periods 5 and 6 overlap, so teacher can't teach both of these periods on the same day. You can handle this by creating advanced card relationship:
15.14 Teacher cannot teach 4th in Grade 5 and 5th lessons in Grade 6

Note: If this solution is not suitable for your school, please contact us, give us more details about your situation and we may give you further help.

See also:
10.8 We have different recess times in parts of school. How to input it? (Solution 2)

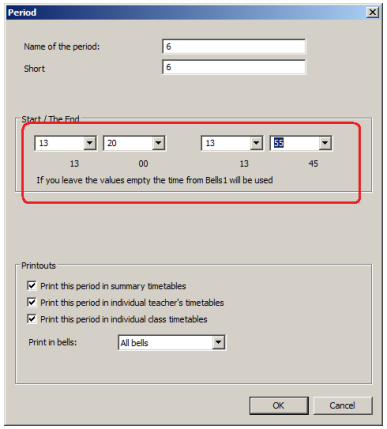
10.8 We have different recess times in parts of school. How to input it? (Solution 2)

1. Using menu School/Bell Times you can create more bells and specify that they are valid for some classes:



Then you can use the combobox to select Bell 1/Bell 2 etc. You will see the corresponding bell times in the list and you can change them via Edit.

For example this picture shows 6th period that has different start end times:



These times will not affect timetabling. If you have overlapping periods, you will need to add constraints for teachers.

See also:
15.14 Teacher cannot teach 4th in Grade 5 and 5th lessons in Grade 6
27.21 Printing different bell times for school sections/days
10.7 We have different recess times in parts of school. How to input it? (Solution1)

10.9 0.5 lessons

On some schools, there are some lessons with length half of period. aSc Timetables supports only period lengths 1,2,3..., so it is not possible to input this directly. However, in most cases this can be solved by one of these two solutions:

Solution 1: On many schools, only first period every day has length 0.5 and all 0.5 lessons must go on these periods. In this case, you can handle this situation be

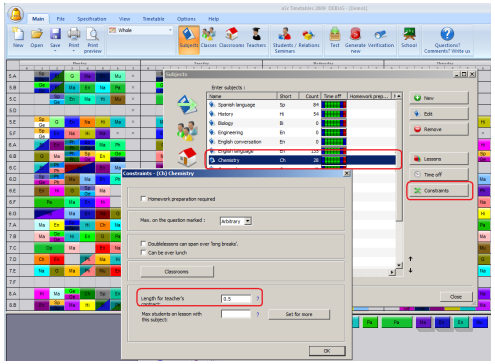
defining new Type of subject (Time-off) for 0.5 lesson's subject in the way that it can go only on this first period every day, and Type of subject for all other subjects that it can't go on the first period. With this solution everything will be ok, only you have to take in mind that program will show incorrect total number of lessons for teacher and class. You have to subtract from this 0.5*number of half lessons to get correct number.

Note: This solution may be applied on any type of school, where there are predefined positions for whole lessons and predefined positions for 0.5 lessons and these position do not overlap. E.g. on some school, all afternoon lessons might be 0.5.

Solution 2: Other solution is to double length of all lessons in timetable. So you will input lessons with length 0.5 as 1, with length 1 as length 2, with length 1.5 as length 3, with length 2 as length 4, etc. You will have also to adjust Bells and Time-offs accordingly.

10.10 Lesson's length counting in teacher's contract (available in version 2009)

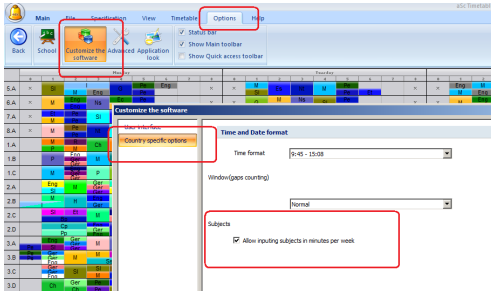
It is now possible to specify the length of each subject. So for example if you have English conversation lessons that do only add 0,5 to the total teachers contract, you can specify this in Subjects/Constraints dialog. This number only affects the teacher s contract.



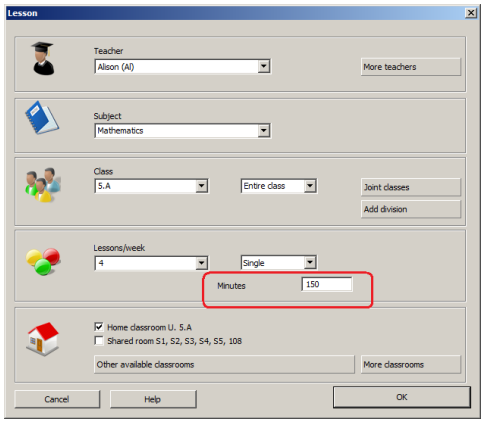
Note: If you also want to generate these lessons to be on certain positions, for example 0.5 lessons can only be at 1st period, you have to simply define timeoff.

10.11 Periods of varying lengths + subjects in minuters per week (Canada)

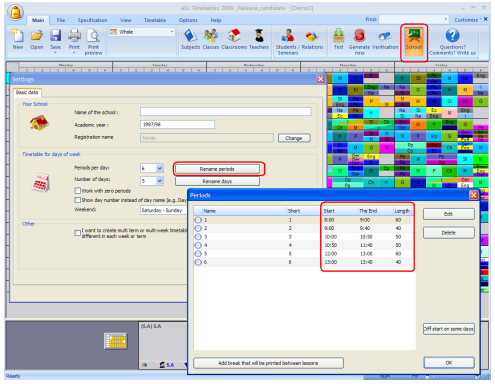
If your school have periods of varying lengths you can go to Menu Options/Customize the software. Then in Country specific check that you want to input subjects in minutes:



Then you will be able for each lesson to specify how many minutes per week that lesson shall have:



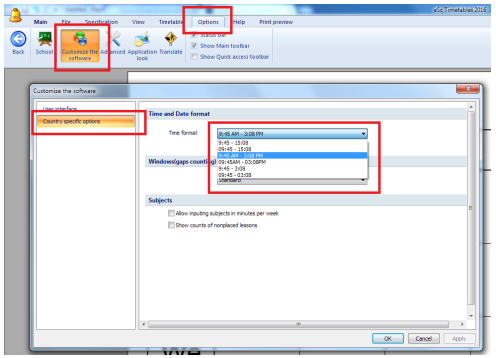
The length of each period is defined in the Period definition dialog:



Note: you still have to provide also the number of lessons per week. So if Math in 6A shall be 150 minutes, then if you specify 3 lessons per week, the software can decide 60+40+50 or 50+50+50.

10.12 Modifying the time format

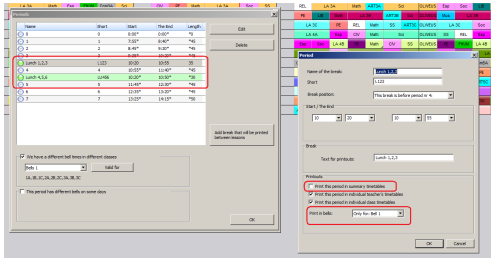
In menu Options/customize the software you can change the time format that will be used for the printouts of start and end of the period:



10.13 Do not print some breaks or periods in some classes(or teachers or in summary timetables)

For each period you can define that it shall not be printed in some classes. If you for example have a different lunch break in grades 1,2,3 and in grades 4,5,6, you can do the following:

1.Add two lunch breaks. Then for first break define that it shall only be pritned in 1,2,3(via Bells 1):



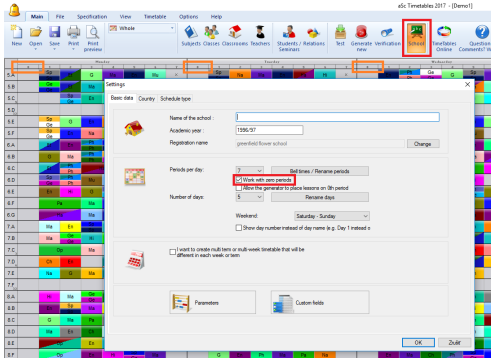
and for second break, you can define that it shall be printed only in Bells2.

See also:
10.13 Do not print some breaks or periods in some classes(or teachers or in summary timetables)

10.14 What is 0th period (zero period)?

The software allows you to use one special period before the regular teaching starts. So for example if your kids have periods 1,2,3,4,5,6 you can also add 0th period, before these regular lessons.

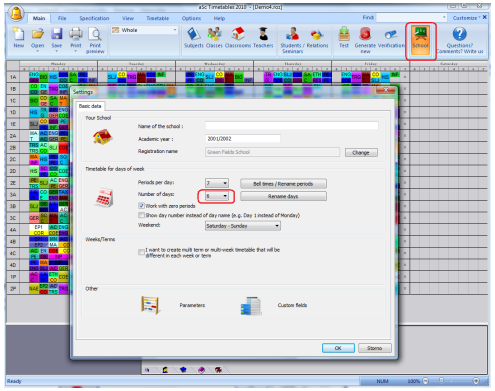
Possible usages:
- create some "assembly lessons" that will happen before the 1st period
- allow certain subjects to be placed here. If you for example have shortage of special classrooms it may help you in ask the kids to come once per week earlier to the school.



11 Data input - Days/Weeks

11.1 We are teaching also on Saturday. (We have 6day cycle)

Check the Saturday option:



See also:
26.2 We need Day 1, Day 2... rather then Monday - Friday
or
11.6 Can I rename the days?

11.2 Two week timetable

In case you use two week timetable on your school, you have two options how to input it in program:

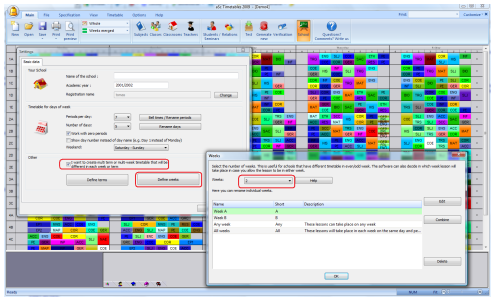
Option 1 - weekly timetables for each lesson you can precisely specify in which week it can take place.

This option is recommended in case, when you have just few lessons every other week and most of the lessons in timetable are ordinary one week lessons that are on the same postion every week. For more information please check:
11.3 How can I define weeks?

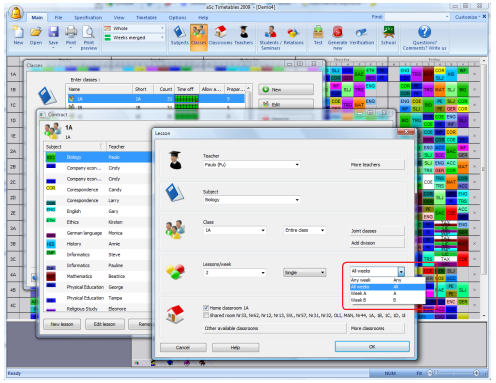
Option 2) 10 days timetable is usefull in case you have completely different timetable every other week.
Please check:
11.4 How to create a timetable for more than 5 days?

11.3 How can I define weeks?

If your school has different timetable on odd and even weeks (sometimes called weekA and weekB, you can simply define that you have two or more weeks:

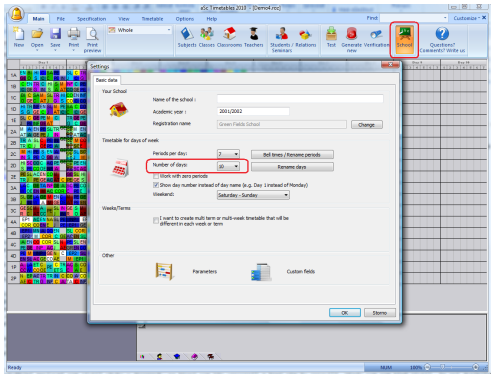


Then for each lesson, you can say in which week it can be. Default is All weeks. This means it will be at the same position in all weeks. If you change this to lets say Any week, the software will allow you to place this lesson into week 1 OR 2.



11.4 How to create a timetable for more than 5 days?

In menu Options/Settings it is possible to set the timetable to be for more days than just 5 days(e.g 10 days):

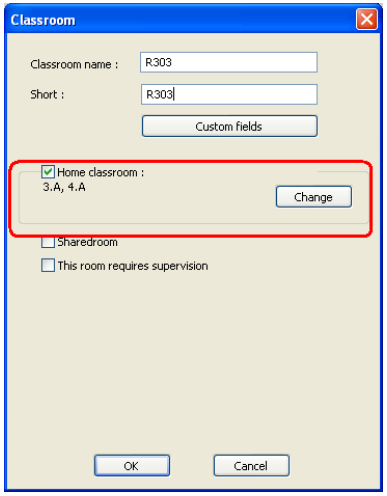


Please note that in this case you have to double the teachers lessons. For example if teacher is teaching 2 lessons per week, then in 10 days timetable he is teaching 4 lessons in 10 days.

Check also:
11.2 Two week timetable

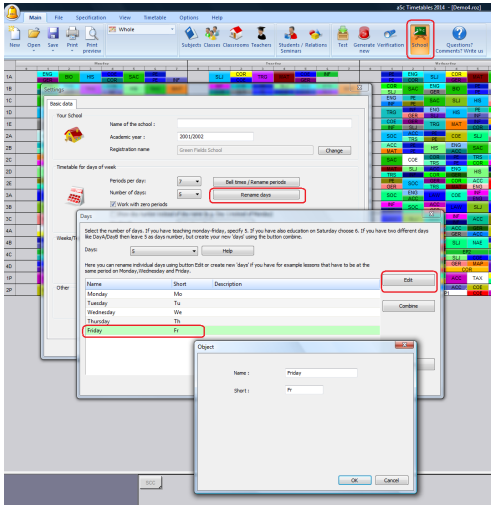
11.5 We have 10 days schedule. We need to assign one classroom as a home classroom for two classes.

Since version 2007 the classroom can be home classroom for more classes. Just specify those two classes:



11.6 Can I rename the days?

This can be done in menu Main/School:



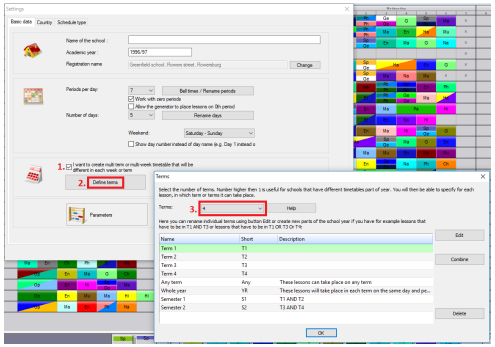
For each day you can write longname and shortname.

If you leave the field empty then the default names will be used. Default names are Monday,Tuesday(big suprise), in case of timetable for more than 7 days the default names are Day1,Day2...

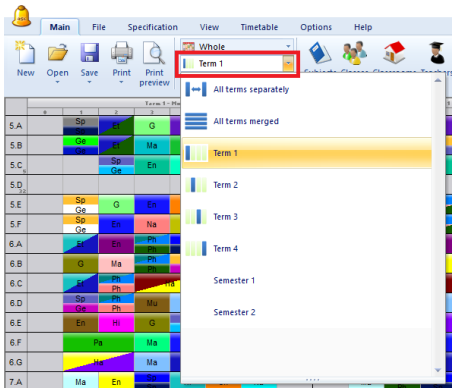
You can also manualy switch to Day1, Day2 this way:
26.2 We need Day 1, Day 2... rather then Monday - Friday

11.7 Multi term timetables

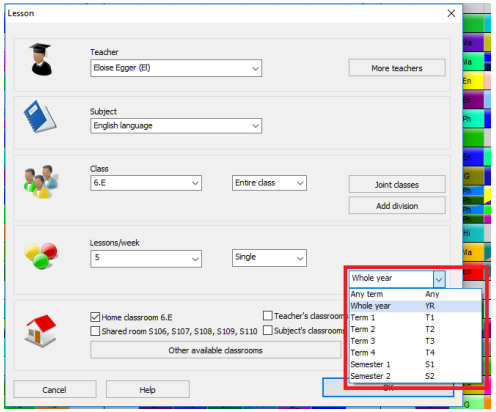
For each lesson, you can define in which terms this lesson can take place. You can specify one term, or you can say it can be in any term or on all terms. Moreover, you can say the lesson has to be in T1 and T2 or on T1 OR T2 or T4.
Here you can define your terms. Tick you have terms or weeks and then specify the appropriate amount of terms:



Use the button Edit if you want different names for terms.
Once you have said you are using terms, you can see a combobox where you can select a term you want to see:



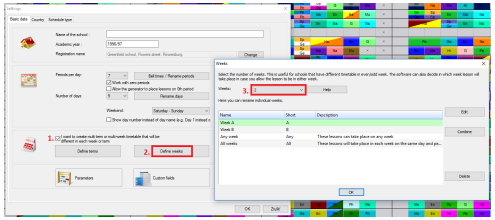
And for each lesson you can define the term when this lesson can be.



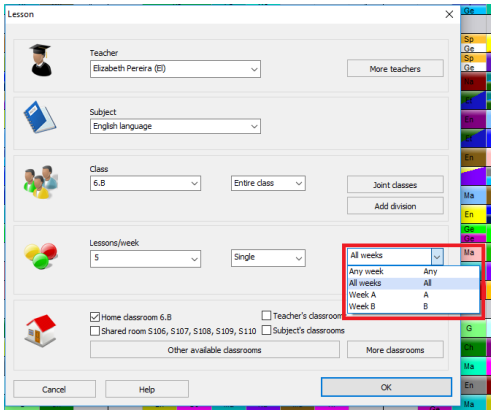
Similar to days also for terms you can define special terms. If you have 4 terms, the software automatically adds two special terms called Semester 1 and Semester 2. Semester 1 is in fact T1 AND T2 so if you for certain lesson/course specify S1 then it will be on both T1 and T2 at the same day/period.
But if you for example specify T1 OR T2, then this lesson can be on either one and the software can choose which one during the generation.

How can I specify lesson is only on odd/week A?

If your school has different timetable on odd and even weeks (sometimes called weekA and weekB, you can simply define that you have two weeks:



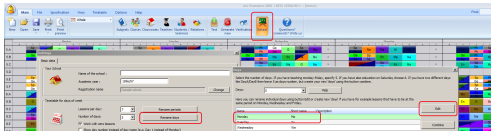
Then for each lesson, you can say in which week it can be. Default is All weeks. This means it will be at the same position in all weeks. If you change this to lets say Any week, the software will allow you to place this lesson into week 1 OR 2.



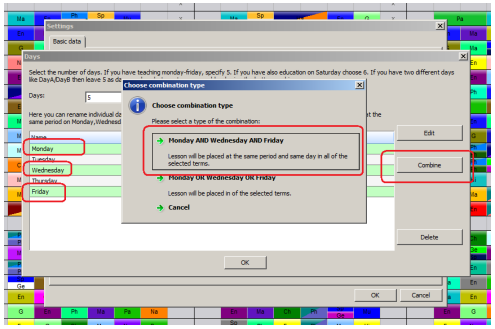
See also:
[19.3 Two subjects have to be at the same time in both weeks/terms]

11.8 How can I rename days? (available in version 2009)

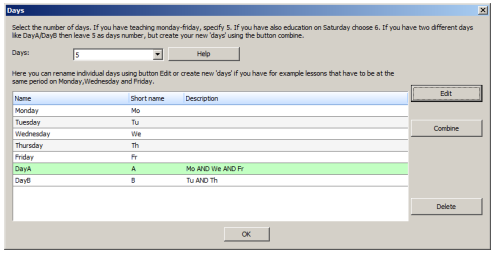
The software allows you to define your day names and short names in case you want to change the defaults:



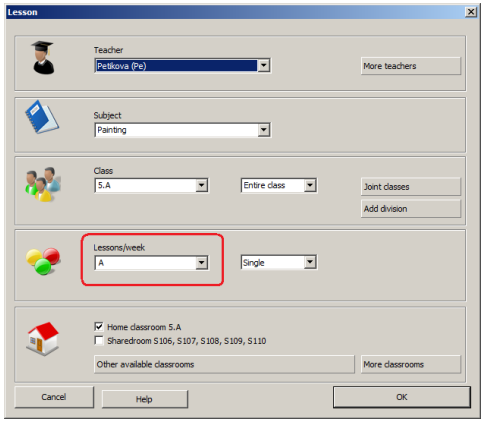
If your school has 2 different days Day A and Day B where DayA is Monday, Wednesday and Friday and Day B is Tuesday and Thursday. Then you can create new days A and B. Just use button combine:

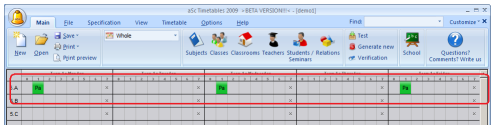


Then you can define dayB as combination of Tuesday and Friday. You will end up with two special days A and B:



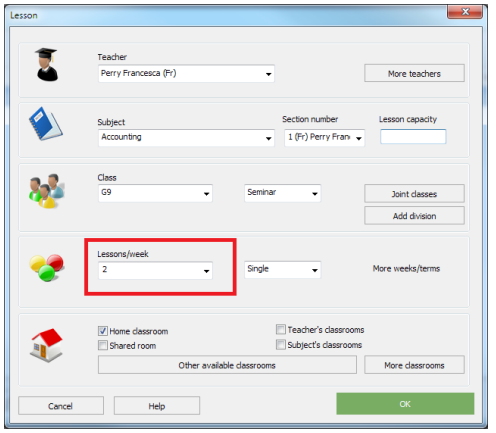
For each lesson, you can then define that this lesson can be on day A or B. Simply input the short name in the field with lesson counts. If you specified A, lesson will be placed on MW and F:



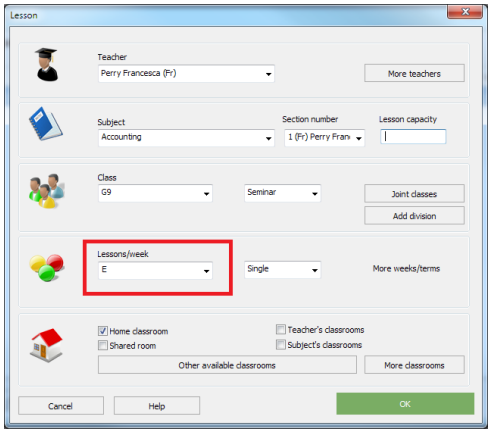


11.9 Extended count of lessons per week

This lesson will be 2 times per week and it can be on different position on each day:



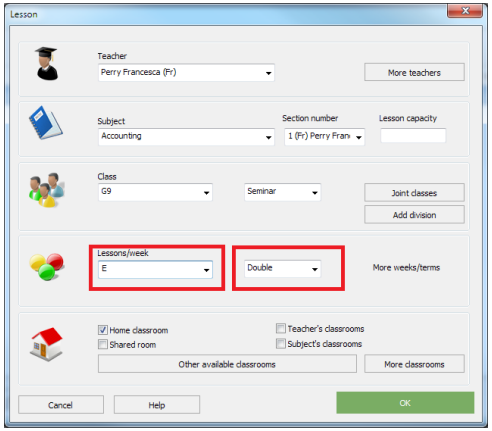
If you want to define a lesson that is on the same position each day, you can simply write E (stands for Every day) and this lesson will be 5 times per week: on the same period on each day:



Notes:
- You can combine these two ways, so it is ok to have math lesson that will be defined with E and chemistry lesson defined as 2 in the same timetable. The software will understand this.

- You can also pick any short name of days, for example typing Mo will create a lesson that is only on Monday.

- Moreover, you can define your own "days". For example you can define Day A as Monday AND Wednesday AND Friday. Then you will be able to specify that lesson shall be on DayA and the software will understand that this is a lesson that is on the same period on Monday/Wednesday and Friday.
- You can also combine number with short name here. Typing 2 E will create 2 periods on each day at the same position etc. However here you probably will want E and duration of the lesson as double, which can be specified in second combobox. This will define double lesson on each day on the same period:



11.10 Our school has lessons with 4 week and lessons with 2 week cycle

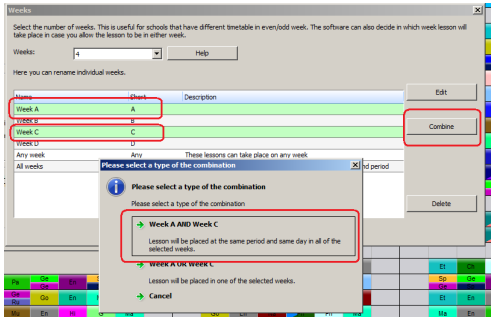
First you have to specify that your timetable has 4 weeks:

11.3 How can I define weeks?

Then you have to create som week combinations:

Combine Weeks A and C together to create Even Week
Combine Weeks B and D together to create Odd Week

Select two weeks, press button combine and choose first option:

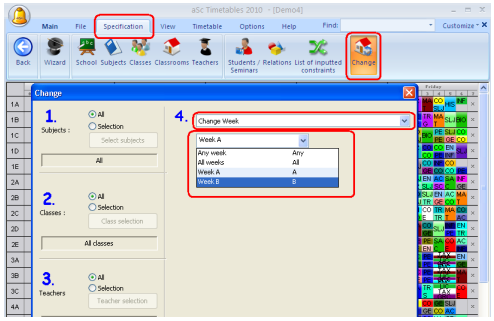


Then for each lesson you will be able to say that lessons in for example in Week A or in Even Week, which will place the lesson on the same position in both Week A and Week C.

11.11 How to change the week for more lessons at once?

In case you have not defined a two or more week timetable yet, you should do it now. Please, check this article:
11.3 How can I define weeks?

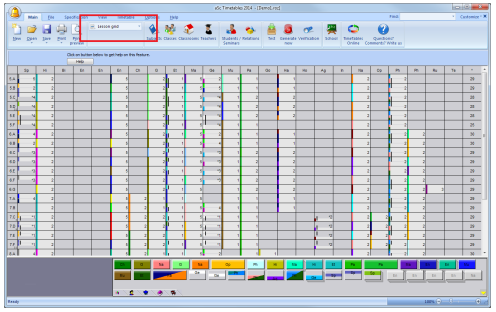
Now, go to menu Specification - Change and specify the lessons for Subjects, Classes or Teachers you want to change. Finely, choose the week:



12 Data input - Lesson grid

12.1 Lesson grid overview

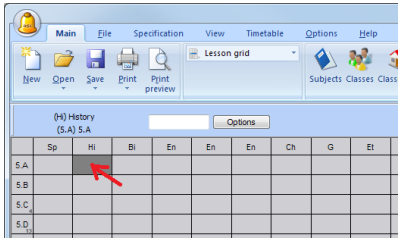
The lesson grid shows you all the lessons in your school on single screen. You can also **add or modify the lessons** from here:



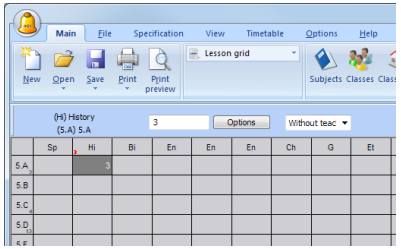
Please check these articles
12.2 Adding a lesson in lesson grid
12.4 What do the colors in lesson grid mean?
12.5 Editing a lesson

12.2 Adding a lesson in lesson grid

1. Select a subject and class. You can either click or use arrow keys:



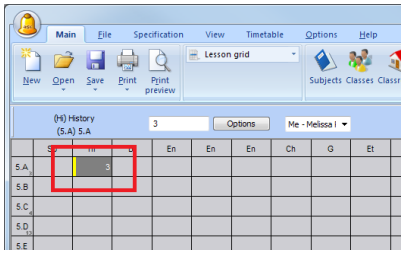
2. Type the number of lessons per week into the selected cell:



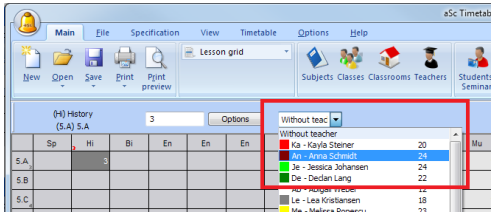
Thats it!

The lesson is shown in the pink color because you have not yet assigned a teacher.

3. Once you know you can assign a teacher that will teach this lesson. Simply select the lesson and type first letter of this teacher:



Or click into the combobox:



Check this article for various formats that can be used to specify double lessons, 2+2+1 lessons etc:

12.3 Count per week - format

12.3 Count per week - format

This text describes how various combinations of lesson count and duration are displayed and can be inputted in upper panel of lesson grid. (see also 12.1 Lesson grid overview and 12.5 Editing a lesson)

1 2 3 4 ...
Number from 1 to 20 simply means number of lessons per week. All lessons have duration of single period.

2* 3* 4* ...
Number from 2 to 8 followed by * means one lesson with duration 2 to 8 periods.

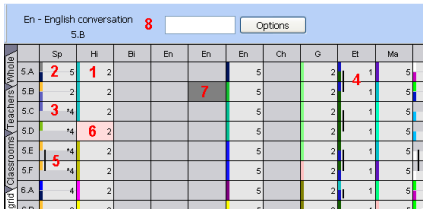
22 222 2222 33 333 3333 ...
Repeated number means more lessons with duration:
22 = two double lessons
222 = three double lessons
33 = two triple lessons
111 = three single lessons (the same as simple 3)

21 221 211 322 ...
Combination of numbers means combination of various lesson lengths:
21 = one double and one single lesson (total 3 periods per week)
221 = two double and one single lesson (total 5 periods per week)
322 = one triple and two double lessons (total 7 periods per week)

=21 =22 =23 ...
Number with = before it means number of single lessons per week (you can input 1-20 single lessons without =, but 21 will mean double and single lesson, so you have to use =21 instead of 21).

12.4 What do the colors in lesson grid mean?

Here is description of how various types of lessons are displayed in the grid:



1) If cell in the grid is light gray, it means that subject in column is taught in corresponding Class. Number in the cell shows number of periods per week. Colored strip on the left side shows teacher's color.

2) If Class is divided into groups for a subject, corresponding cell will be divided horizontaly.

3) It is possible that only part of a class (e.g. Group 1) has this subject (other part might have some other subject displayed in different column). In this case only part of cell is light gray. Notice * before number - it denotes that displayed number of periods per week is only for part of students and not for all students in the class.

4) Black vertical line shows that two classes are joined together for subject.

5) This is combination of situations from points 2+3+4.

6) In case there is no teacher yet assigned to the subject, it is shown in pink color.

7) You can select cell by clicking on it. Press Ctrl and click to select multiple cells. You can also press Shift and click to select sequence of cells in the same column. (you can also use keyboard to select cells - arrow keys and shift key)

8) Panel at top shows more details about selected cell/cells. This is also place where you can make changes to selected subject in Class.

9) You can see total number of periods for class in last column (not visible on this screenshot).

10) If there is a card relationship defined for lessons in the cell, it is indicated by colored lower right corner (not seen on this screenshot). Colors mean:

- blue - Card distribution over the week.
- orange - Reserve space for selected subjects.
- green - Other card relationship types.
- grey - Card relationship is disabled.

Tip: You can also use letters to specify the teacher. For example if you press 2 and then M in the empty field, you will add a lesson for teacher Morgan that is 2times per week.

See also:

12.5 Editing a lesson

12.5 Editing a lesson

Basic editing options in the lesson grid are available through the upper panel:

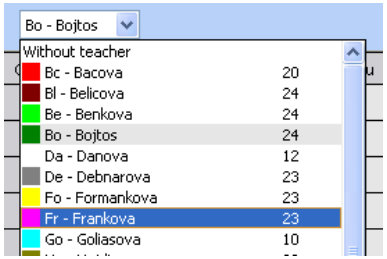
1) This part shows info about the selection - class and subject (or multiple classes and subjects in case there are multiple cells selected in the grid)

2) Here you can input the lesson count. Click on this field, type a number and press Enter to confirm your input.

Note: You can also type the lesson count without clicking on this field. Just select a cell in the grid and type the number on the keyboard (in this case you don't need to press enter). See: 12.3 Count per week - format

3) Here you can select the teacher for the subject. In the case on the picture, the class is divided into two groups for this subject, so there are two fields here - one for each group.

When you click on this field, you will see the list of teachers from which you can pick the right one. In this list you can see the total number of already assigned lessons to the teacher. The currently selected teacher for this subject is shown with the grey color.



Note: You can also choose the teacher without clicking on this field. Just select a cell in the grid and press the first letter from his name on the keyboard (a-z). It will select the first teacher with a name starting with this letter. Press the letter again to select the second teacher, etc.

4) This shows the group names in the case when the class is divided into groups for this subject. You can uncheck one of the checkboxes if this subject should be only for one group.

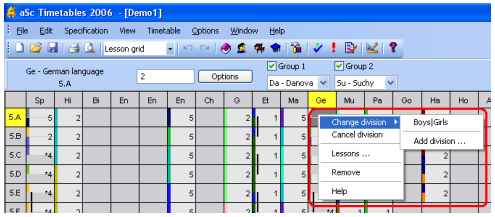
5) More options can be found by clicking on this button. See: 12.6 Editing lesson - Options

Note: If you have multiple cells selected, some fields/options in the upper panel may be unavailable depending on the selected combination.

See also: 12.4 What do the colors in lesson grid mean?

12.6 Editing lesson - Options

These options can be accessed by Options button in upper panel of lesson grid, or by right clicking on cell:



The list of available options depends on the lesson you are editing:

Lessons - Show lessons in this cell in standard class lessons dialog. (you can do the same by double clicking on cell in grid).

Divide class into groups - This will divide class into groups for this subject. You can choose from one of existing (or predefined) divisions, or create new division with "Add division..." option.

Cancel division - This will remove division for this subject, so lesson will be for whole class.

Change division - With this option you can change division of already divided subject. For example you can change subject divided to "Group 1/Group2" division to "English 1/English 2".

Joint classes - This option is available if you select more cells from the same column (=multiple classes from the same subject). It will join these classes to single lesson.

Split joined classes - This will split previously joined classes.

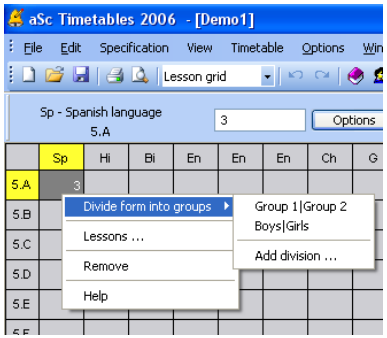
Classrooms - You can set available classrooms in this sub-menu.

Remove - Remove all lessons in cell.

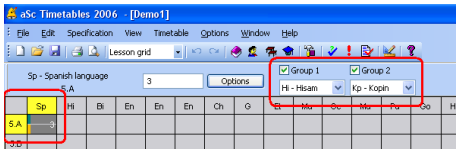
12.7 Working with divided lessons

Creating a divided lesson:

1. Select subject and class by clicking on the corresponding cell. Type 3 as count of lessons per week. Then press right mouse button on the created lesson and select the corresponding division:



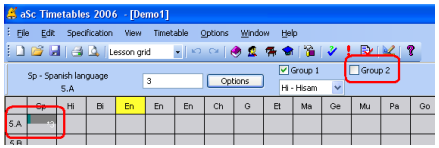
2. Now you can select the lesson teachers:



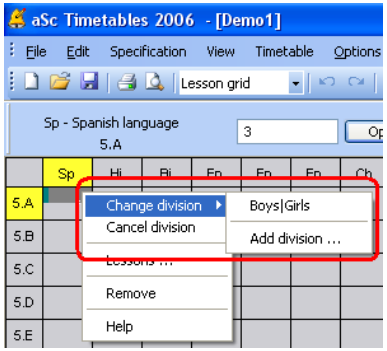
Notes

If you want **only one group** to have this lesson, then simply unclick the

corresponding checkbox:



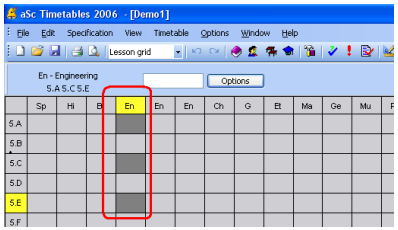
If you want to **change the division or clear the division**, click right mouse button:



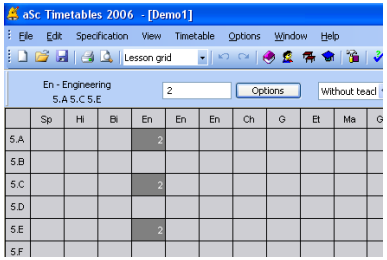
12.8 Working with joined lessons

You can quickly create joined lessons in lesson grid.

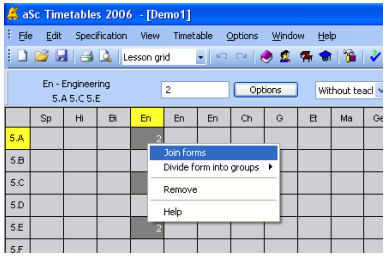
1. Hold CTRL and click on the classes you want to join:



2. Press 2 as for two times per week:

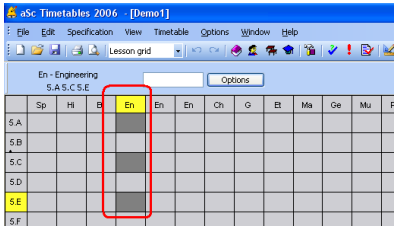


3. Use right mouse button to Join these lessons:



12.9 Multiple selection

Lesson grid allows you to select more lessons from the same column:



- either use **CTRL and click** on desired cells.

- or click top cell and while **holding SHIFT** click on the last cell

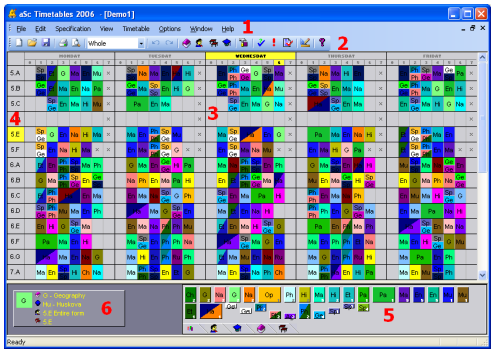
- or **hold SHIFT while moving with arrow keys**.

When the selection is made you can use right mouse button to modify it, or type lesson count or delete the lessons.

13 Working with timetable

13.1 Working with timetable - general information

The main aSc TimeTables screen consists of several parts:



1 - Menu - contains commands for program control.
2 - Toolbar - keys for quick selection of the most frequently used commands.
3 - The timetable contains cards, each cell is representing individual lessons.
4 - Row headers. Clik here to select the class, right click to show class's options.
5 - The control panel contains information about current operations as well as lists of unplaced cards.
6 - Brief info about the card under the cursor.
Classes are displayed in rows, days and periods in columns.
The timetable contains colored cards representing individual lessons. The color of a card indicates the teacher who teaches the particular lesson.

Split lessons are displayed with a card of half size, lessons divided into three groups with third size, etc.

It means if we define by entered data that the teacher Mr. Henry teaches mathematics three times a week in the 1A class, the program will prepare three identical cards for the 1A class indicated as Mathematics and with the color assigned to Mr. Henry.

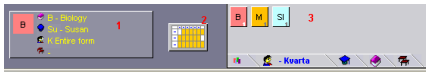
Cards are placed in the timetable according to how the program generates them or how they are placed manually. You can generate a timetable and subsequently, if necessary, change it by moving cards with the mouse.

You can change the lessons, teachers, classes at any time.

Before you look at that how it is possible to change a timetable manually, here is a description of the Control Panel:
13.2 Control panel

13.2 Control panel

The control panel is located at the bottom of the screen. It consists of three parts:

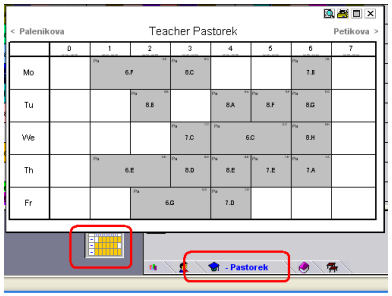


1 - Information about the current card is displayed in this field when the cursor is placed on the card.
2 - The button for viewing the timetable of the current teacher or class.
3 - The panel of not-placed cards.

The tabs, located at the bottom of the Panel of not-placed cards are used to define displayed cards:

First icon displays all not-placed cards
Remaining icons display cards of the selected class, teacher, subject or classroom.

You can click on the button in the middle to show the timetable for the selected teacher or class:



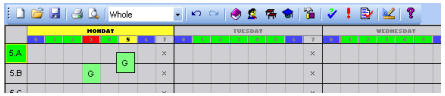
If there are more cards, so not all of them fit on the Panel of Not-Placed Cards, yellow arrows will be displayed on the right.

13.3 Moving the cards manually

As already mentioned, you can change the timetable by simple movements of cards. Of course, the program checks for collisions of classes, teachers and classrooms.

Procedure for moving a card:

1. Click on the card with the mouse and pick it . Now move the card with the mouse:



You can click also on a card located in the bottom panel of not placed cards.

The class the card belongs to is displayed in **green**. The program will not allow you to place it in another row.

Column headers can have this colors::
Green indicates it is O.K.;
Blue means question-marked position;
Red means occupied position (the position in which the teacher is assigned somewhere else),
Grey means fully inappropriate position(time-off).

2. Place the card by clicking on the desired position.

When you place the card, the program will automatically assign an available classroom to the lesson from the list of available classrooms. If you place the card in a position in which no classroom is available, the program will accept it, but it will display a white stripe on the left edge of the card to symbolize that no classroom has been assigned to the card.

Similarly, the program will allow you to place a card in a not allowed position as well. But it will warn you by a red stripe on the card. It s up to you whether you want to have the card in the position or not.

In case of collision the software either switches the cards, or shows you this popup in case of more cards are colliding:

You can select the action to resolve the colision. If you select another card from this popup menu, the original card is placed and you continue with the selected card.

See also:
14.3 Related timetables

13.4 Removing a card from the timetable

To Remove a placed card from the timetable you can:

1. **Click on that card to select it**.

2A. Move it to the panel of not-placed cards, and drop it there by a click

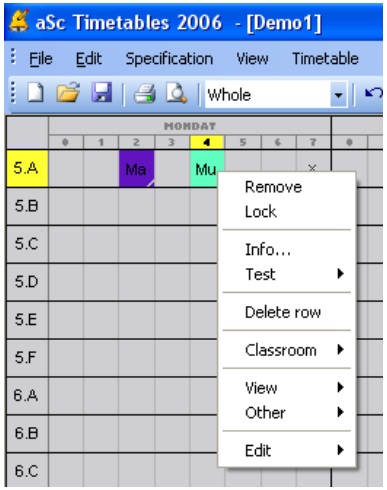
2B. Move it to the part of the timetable without any classes and drop it there by a click

2C. **Click the right mouse button** while the card is held in the hand

13.5 Right mouse button

By means of the right mouse button you can quickly select the most frequently used functions for the object you click on. After you click on a certain object with the right mouse button, the program will offer you a menu with possible operations for that particular object. Contents of the local menu depends on whether the cursor is placed on a card or not.

Clicking the right mouse button on a placed card



In the popup menu you can:
1. Remove the card.
2. Lock/unlock the card.
3. Info - displays an verification window with information if there is some problem with this card only. This is the same as menu Timetable/verification, only it will show the errors related to this card only.
4. Deletes the row.
5. Classroom - Here you can select one of available classrooms for this card - it will be placed in selectd classroom. Detailed description please find here 13.7 Working with classrooms.
6. View the timetable of related teacher/subject/class
7. In menu other you can lock/unlock teacher.
8. **Edit this lesson** or time-off of related teacher/subject/class.

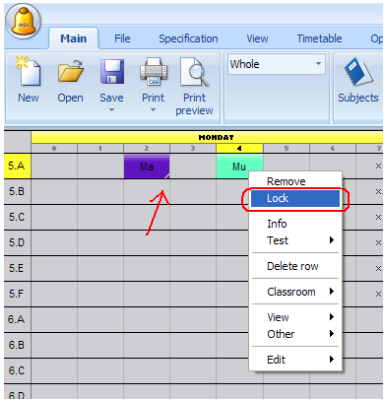
Clicking the right mouse button on a free position

The program will automatically offer the list of cards that can be placed on the position.

See also:
13.9 Right mouse click on row headers

13.6 Locked cards

If you know that a lesson must be taught at a specific time, i.e. its card must be in a particular place, you can lock the card in that place by clicking on it with right mouse button. The locked card has a small stripe in the rightbottom corner:



Locking has two advantages:
- the position of the card will not be changed when you are manually moving the cards;
- the generator does not move locked cards.

However please note that **locking cards is generally not a good idea**. Locking a card on an unlucky position can prevent your timetable from being finished. If there are at least two ways how to place some card, then it is better to explain the generator where the cards might go.

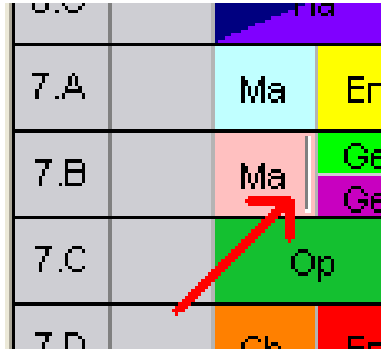
You can lock/unlock cards either by using the commands from the **Timetable** menu, or individually, by means of the right mouse button on the card, row header or column header.

See also:
20.7 Biology in 4A has to be only on Wednesday(or Biology cannot be on Wednesday)

13.7 Working with classrooms

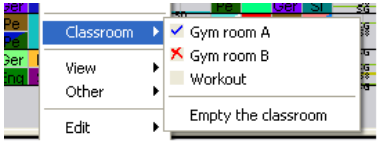
The generator automatically assigns the classrooms and also while manually moving the cards the classrooms are automatically assigned. So the below described functions are only necessary when you want to rearange the classrooms:

Cards without classroom are marked with white stripe on them:



Placing a card in a classroom:

Right click on a card you want to assign classroom to and click on the classroom that you want to use:



Marks before individual classes mean:
"Red cross mark" means Occupied classroom. Other lesson is already taught at that time.
"Blue tick" means that the lesson is already placed in this classroom.
A classroom without a mark is free (empty).

Releasing a card from a classroom:

Right click on that card and choose **Empty classroom**.
The command is not available if the card is not placed in a classroom.

See also:

13.11 Classroom view

13.8 Custom views

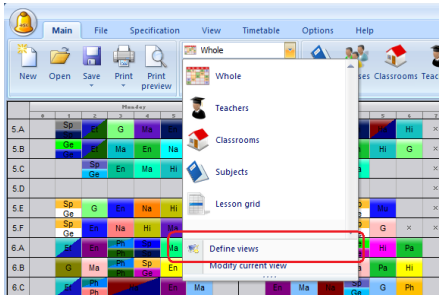
Custom views will allow you to effectively divide the timetable into smaller and more easily readable parts.

For example you can display classes 5.A - 5.D in one view.

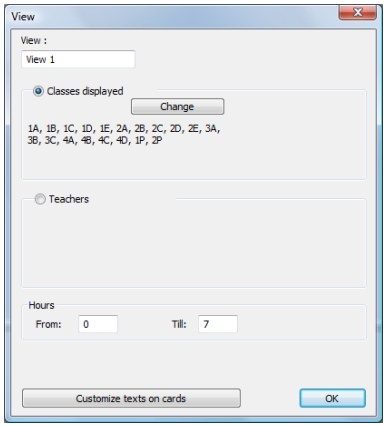
Defining views

The **Whole** basic view, which displays the complete timetable, is always available for each timetable.

You can define your views from menu View/Define:



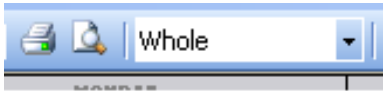
After clicking on the **New** or **Edit** option you can edit view's properties:



Enter which days will be displayed as well as the number of lessons per day. Specify the number of lessons including the zero lessons. Then select classes or teachers you want to see in this view.

Switching between views

You can switch the views using the combobox on the toolbar:

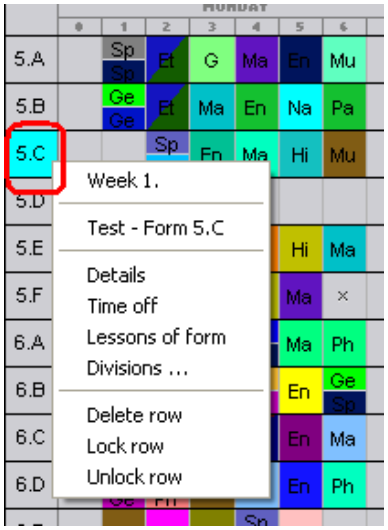


Note: you can also print the custom view. This is handy when you want to print only some teachers or only one day etc:

See also:
14.5 Changing the look of the timetable on the screen

13.9 Right mouse click on row headers

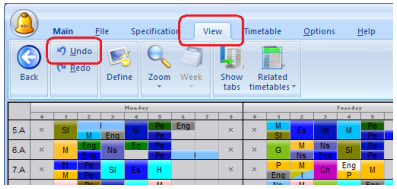
You can click right mouse button on the row headers:



From here you can edit teacher/class/classroom properties, lessons or quickly run test generation of this row.

13.10 Undoing and restoring operations

You can undo and redo your changes by using menu View or using buttons on the toolbar:



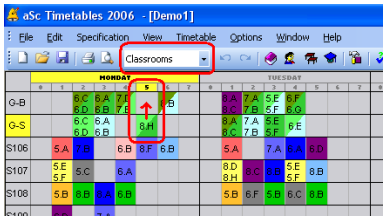
Please note that this only affects the positions of the cards. It is not possible to Undo changes in the contracts.

A good idea is also to use File/Save as... to save the timetable on disk under different name. That will allow you to store a semi-finished version of the timetable, to which you can return in the future.

13.11 Classroom view

Classroom view is a special view because when you move cards in this view, then only the classrooms are changed. The positions of the cards are not changed.

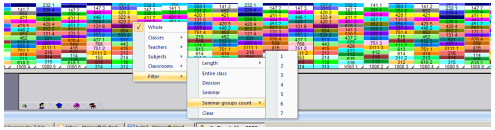
So for example the following picture shows you that you can easily move physical education for 8H from Small to Big gym room:



The cards shown in the control panel are either cards that are not yet placed in the timetable or cards that are placed but they do not have a classroom assigned yet. These are marked with white stripe:

13.12 Filter function (available in version 2009)

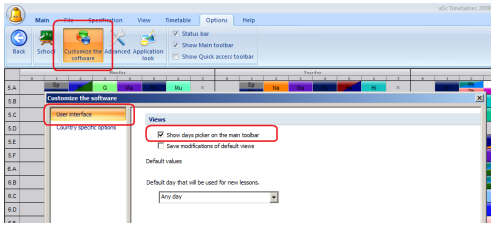
Just press right mouse button anywhere in the unplaced cards section. A popup appears where you can select some advanced filters, like show only double lessons or show only lessons that have only one section:



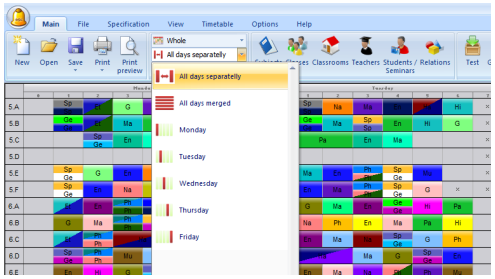
So if the school wants to create a timetable by hand from the scratch, they can filter only lessons with one section only and start with these.

13.13 Working with days in the main view (available in version 2009)

By default, the software shows all the days on the main screen, usually from Monday to Friday. If you for example want to see only one day, you can do this in the days combobox. This one is not visible by default, you have to turn it on in the options dialog:

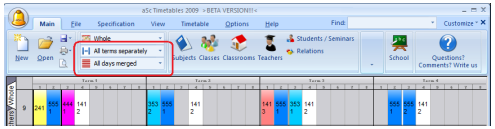


Then you can select a day you want to display:



13.14 We have the same timetable each day in given term or week (available in version 2009)

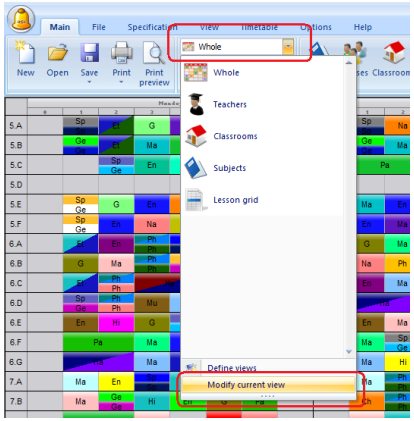
If you have exactly the same timetable each day then you probably don t need to see in 5 columns at them main screen. What you need to do is to show the days combobox see above and then pick Days merged:



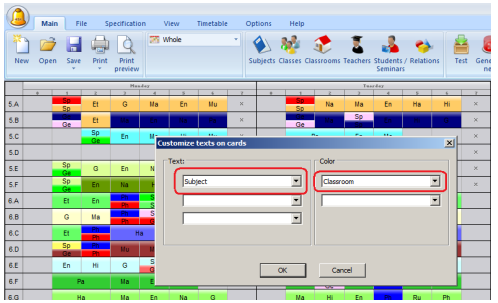
Combine this with the show all terms separately in the combobox for terms and you will get a view with one column for each Term and with this column all days are merged, so you have only the periods as subcolumns.
Note: you still can have some lessons that are on different positions each day. If you for example have all lessons at the same periods each day, only one lesson is different on Tuesday and thursdsay, the software will simply put two entries into to appropriate column.

13.15 Quick modification of the onscreen view (available in version 2009)

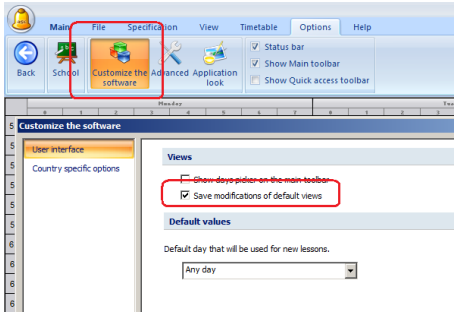
By pressing View/Modify current view:



You can quickly select what texts shall be printed on the cards and by which color. For example by choosing classroom as color, you can see the timetable with colors defined by the classroom:



After save/load of the timetable, this setup is reverted to defaults. If you want to preserve these values, you have to go to options and select that you want to save the view modifications:



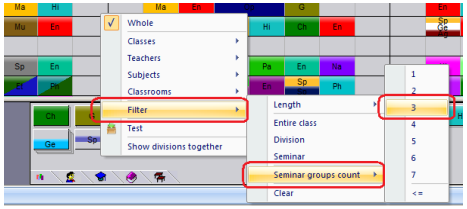
13.16 How can I filter cards displayed in the list on uplaced cards

You can right click in the bottom pard with unplaced cards.

Then you can select the Filter option.

Examples:
Select all double lessons:

Select all seminars/course that have at 3 sections:



See also:
23.6 How can I test just some lessons, for example all double lessons or all PE lessons

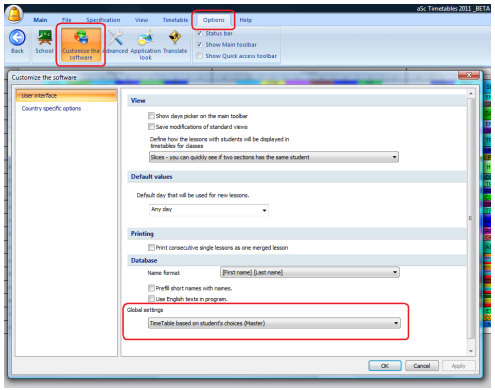
13.17 What happens when I change school type?

You can change the school type combo box.

Standard uses group based generator. If you have inputted students they must be assigned to the seminar groups(sections) before the generation and they remain in the assigned group during the generation.

Timetable based on students picks (Master) shows all courses in one row, regardless of grade. This option uses high school generator that can move students between sections during the generation.

Timetable based on students picks (Classes/grades) - This view displays one row for each class(grade). This option uses high school generator that can move students between sections during the generation.



13.18 What does the stripes on the cards mean?

The software might show stripe of varios color on card to indicate:

White stripe cards that are placed but they do not have a classroom assigned yet

Red stripe - placed a card in a not allowed position

Purple stripe - new visual indications for cards that are over capacity

Blue stripe - this subject has some pending students

Small stripe in the lower right corner - locked cards

14 User interface

14.1 Hotkeys

F5 starts timetable generation
Space Bar shows timetable verification
CTLR-L - compare with last saved version

Numpad shortcuts:
+ zoom into the timetable
- zoom out
/ Fit Zoom
***** Invert colors on the screen

Multiple week timetables:
Number 0 - show summary of all weeks
Numbers 1-8 - show week 1-8
Ctrl-0 show all weeks expanded

Mouse Shortcuts:
CTRL+LEFTCLICK - if the class is divided into groups, CtrlClick will pick all groups on this position. In case of clicking on the empty position CtrlClick will place all the groups. When working with divided lessons, this can be extermely usefull.
Note that this is sometimes not possible, since the complemetary teacher may not teach at that time.
SHIFT holding shift while moving card will show the time-off of the card below the cursor instead of the card you have in hand. So you can check where you can put the card below the cursor before you actually replace it with currect card on your hand.

14.2 Is it possible to change the schedule after the generation?

Yes. At any time, before or after the generation you can change position of any card by clicking on it with mouse and placing it on some other position.

Or you can switch to view "Classrooms" and modify the rooms allocation for some cards.

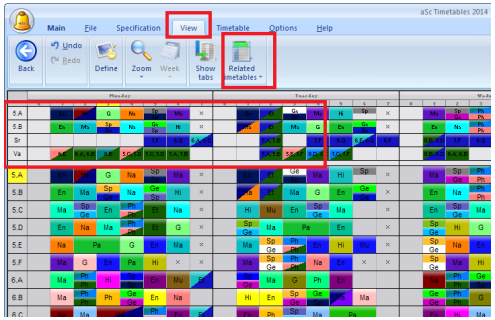
Once you make these changes you can print the timetable.

Notes:
If you run the generation again the software will generate the new timetable.
If you really need a card on some position, you can lock it there and the generator will not move it.

14.3 Related timetables

You may activate the function "related timetables" in menu View - Related timetables. You may use the shortkey Ctrl+R.

A new lightgrey panel will display above the timetables::



This panel shows timetables related to the card you are currently holding.

You can place the card directly into panel related timetables. After placing this card the timetables related to this last card stays displayed.

It is possible to take the card to your hand also from the related timetables.

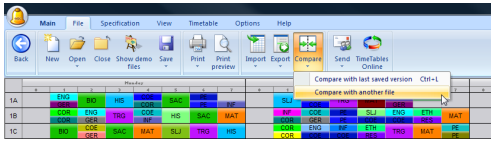
You can set the maximum number of related timetable row in menu View/Related timetables.

Note: By holding SHIFT key you can display timetables related to the card under the cursor or under the currently held card.

Note 2: It is possible to lock some rows in related timetables by clicking on row header. Locked rows will stay there even if they are not related to current card.

14.4 Comparing timetables

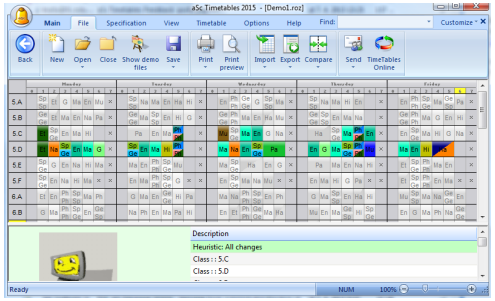
There are two options how to compare your timetable files. You may find both in menu File - Compare.



"Compare with last saved version" - it will compare your current timetable (the one you are currently working on) and its status on disk (that is the state when it was opened or last saved). It can be useful especially when you make some changes manually and you want to see what you have changed since last save.

"Compare with another file..." - this function will offer you to choose another timetable file and then it will compare it with your current timetables.

After invoking this function program will veil current timetable and will highlight only those cards which are on different position in timetable you are comparing it with. In bottom of screen you will see list of changed items:

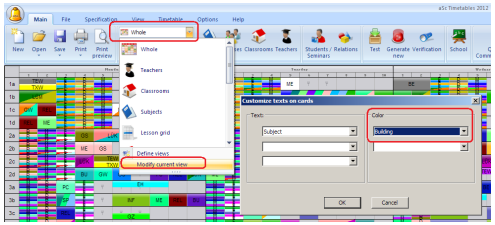


Note: Both functions will display just the changes in cards positions and names of subjects/classes/teachers/classrooms. It will not show you changes in constraints.

14.5 Changing the look of the timetable on the screen

This article is about changing the look on the screen.

Go to menu View/Define:.



If you for example choose color by buildings you can quickly see when the studetns are in 1st and when in 2nd building:

You can also change the texts that shall be displayed on the screen. In some cases you want to see teacher instead of clasroom etc.

Note: you can fully customize the prinouts in the print preview mode. 27.1 Customizing printouts

14.6 Timetable files - making backups, problems opening files, etc...

aSc Timetables stores its data in .roz files. Working with these files is sthe same as with Microsoft Word .doc files.

You can save your current timetable to new file (with different name) via menu File/Save as.

To transfer this file to other computer, you can copy it to USB disk, burn it on CD, or send it via email.

You can also have as many timetable files on your computer as you wish. You can save multiple versions of your timetable with different filenames.

Problems with file

I can't open the file: If program reports that

file was created in newer version of aScTimetables, please download and install latest version from our web site. If program crashes, please send us your timetable file by email to support@asc.sk and we will check what can be the problem. Usually it is a disk problem and your file was damaged.

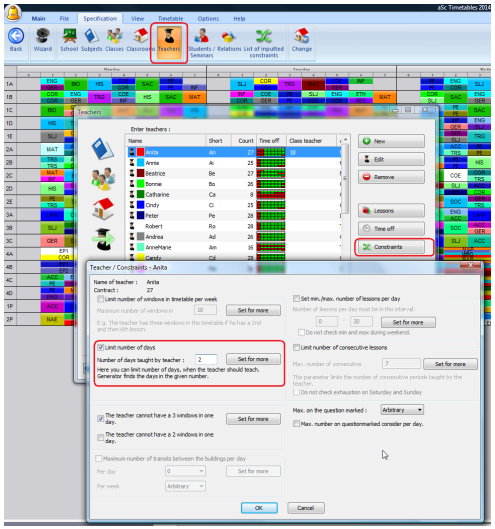
I can open the file, but there are some data missing in it: In most cases, you have just opened a wrong file. Please find the correct version of file. Or you have forgotten to save file last time you have been working on it. Or it might be possible that you have accidentally overwritten your file with older version. If you can open the file, but some data is missing in it, then these data are either lost, or in some other data file.

I can't find my file: Please check some typical location where the file can be: Desktop, My Documents folder, some drive of your computer, or your USB disk. Or consult some computer experienced person on your school to help you find the file on your PC.

15 Constraints - Teachers

15.1 We have teacher who teaches only 2 days per week and it doesn't matter which

You can use option Specification/Teachers/Constraints. Program will then choose the most suitable days within the given number:



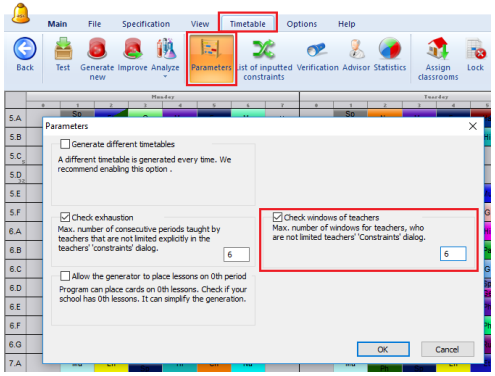
Note: If you specified days precisely, be careful not to specify other teachers similarly. It may happen that all external teachers want to teach on Tuesday and Thursday. Such timetable criteria might be impossible to meet.

Please see also: 6.1 How to set teacher's timeoff

15.2 Teachers' windows in timetable

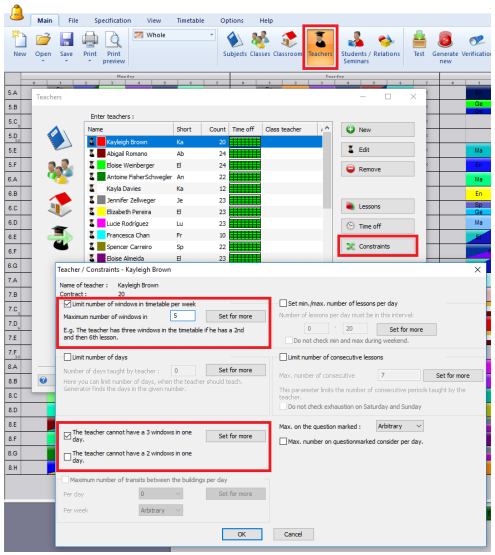
In many schools teachers complain about windows in their timetable - gaps, where they have to stay in school having no lesson and they can't leave because they have some lessons later.

Default value for all teachers: You can limit total number of windows of teacher per week in menu **Timetable/Parameters**.



If the windows/gaps are no problem on your school it is advised to turn this option off.

Custom values per teacher can be set in menu - **Teachers-select Teacher/Constraints:**



This option can be sometimes disabled. You have to turn it on in menu - Timetable/Parameters.

You can also limit number of windows per day with checkboxes in teachers' details. By that you will specify that the teacher may have at maximum of 2 windows per day. Although you specify that the teacher may have 6 windows per week, the program will prevent, for example, 5 windows one day and 1 window another one. For some easy schedules you can also specify that the teacher can have maximum of one window per day using the second checkbox.

15.3 Teacher XY is teaching 2 lessons per week in class 5A but both are in the afternoon.

You instruct the generator to balance the lessons so that if teacher is teaching only two or three lessons in one class they shall not be placed everytime late in the day.

You have two options:
1. 16.1 Max one history lesson on 6th position in each class (solution 1)

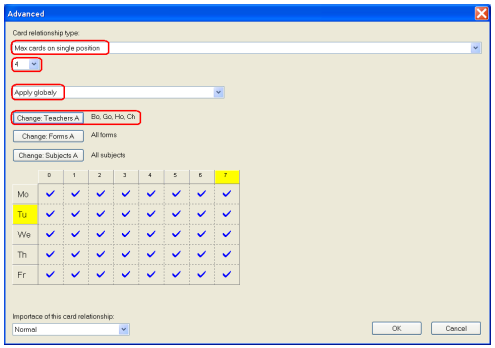
or

2. 20.2 Specify how many lessons shall be before certain position

15.4 We need one free Math teacher for every period

Question: We need to have on every period during week at least one free Math teacher (from 5 teachers). How can we add constraint for this?

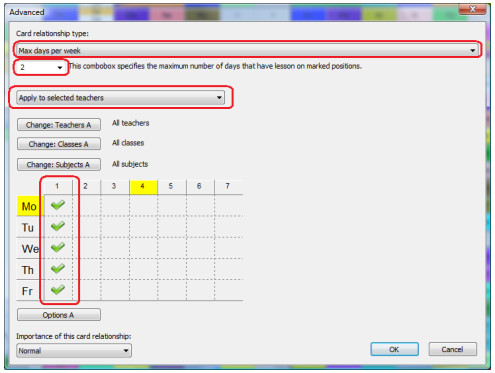
Answer:
You have to input this as advanced card relationship (menu - Specification - Card relationships). You will input it as constraint that there can be max 4 lessons for these 5 teachers on every position.
See picture:



15.5 How could distribute first/last lesson for all teachers in equality?

You can do this in menu Specification/Card relatioships/Advanced.

Example for first lesson:
You have to set for all teachers constraint "Max number of first period lessons" as advanced card relationship, see picture:

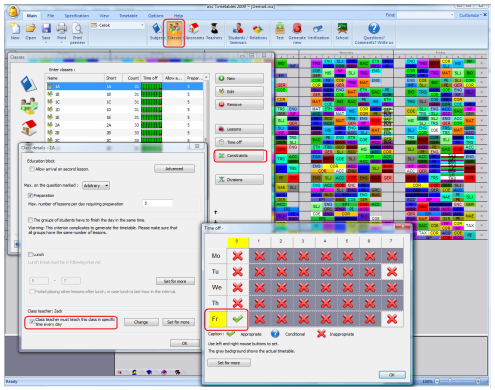


Same way you can input "Max number of last period lessons".

15.6 Our class teachers always have to teach the 1st lesson

If this teacher teaches **only one subject**, you can simply lock his lesson on that position.

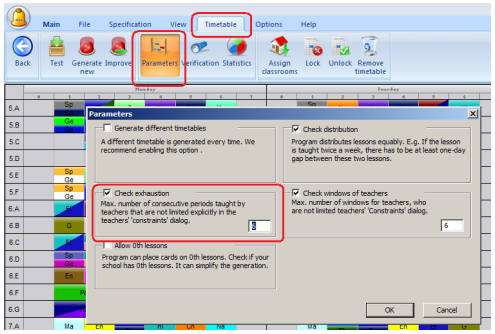
However if he teaches **more subjects or he has double and single lessons**, then it is better not to lock but rather specify it like on this picture:



See:
13.6 Locked cards

15.7 Our teachers cannot teach more than 6 lessons consecutively

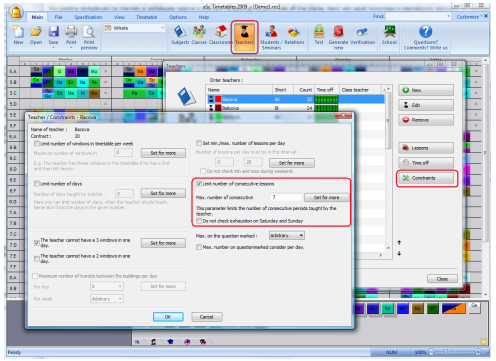
You can specify a global value in menu Timetable/Parameters:



If this value is set to 6 then your teachers cannot teach 1st,2,3,4,5,6,7. But they can teach 1,2, 4,5,6,7,8.

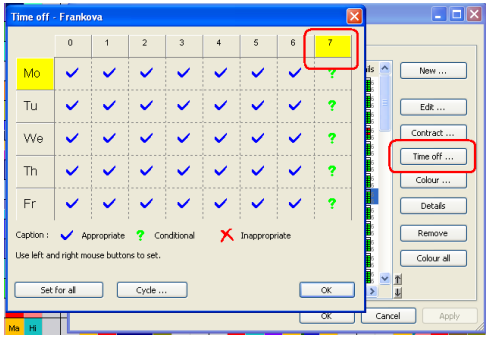
If you do not care about consecutive lessons and your teachers can teach or shall teach more lessons in a row, just disable this option.

You can also specify maximum lessons a teacher can teach consecutivelly for each teacher individually:

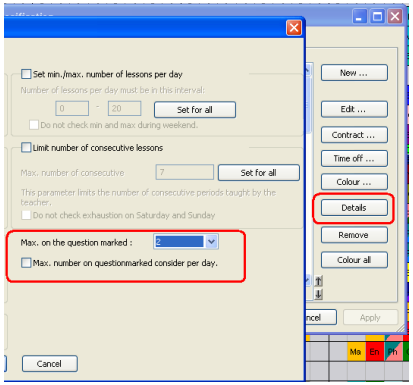


15.8 How to specify a teacher can teach only one 7th lesson

Simple solution:
Define the question marked positions:



then define max. on quesion marked positions in teacher's details:



You can specify how many lessons can be placed on question marked positions. You can e.g. specify that the teacher have 6th lesson question marked and max is 2. Then the teacher will have only two 6th lessons per week.

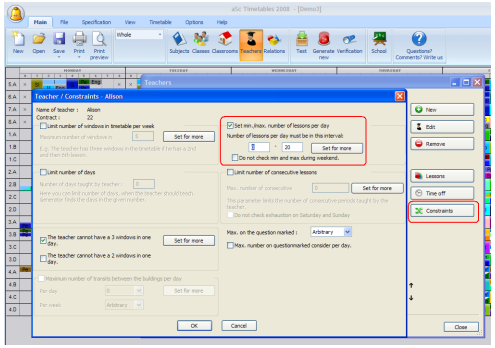
Using the check box you can tell the algorithm to consider the question marked count per day. E.g. you can say lessons 5th, 6th and 7th are question marked and the teacher can have max two per each day. Then you can be sure teacher has at least one free lesson to have a lunch each day.

Complex solution:
Check the similiar situation for classes:
See: 17.1 How to specify that class can have max one 7th lesson or max one 0lesson?

Just instead of "Apply to selected classes" select "Apply to selected teachers"

15.9 How to specify min and max lesson teacher shall have on one day?

You can do this in teacher's constraints:



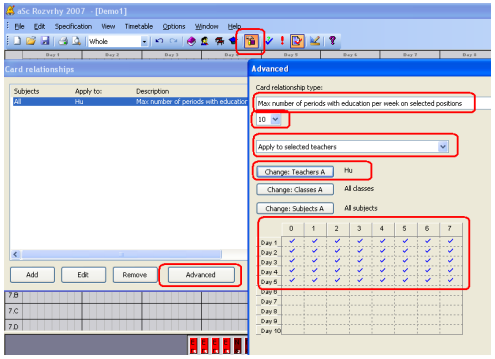
Notes:
- you can specify not to check these values on the satudray/sunday. So the teacher shall have 2 lessons each day on the Monday-Friday, but can have 0 or 1 on Saturday.

- please take care that you do not require unrealistic demands here. It is strongly recomended to add this and similiar requirements later. If it is not possible generate a timetable, it will be even more impossible to generate it with requirement that each teacher shall have 2-5 lessons each day. See: 24.4 A good way to generate your timetable

15.10 We have 10 day timetable(two weeks), I want to spread teacher's lessons equally into those 2 weeks

If your teacher is teaching for example 23 lessons per week and you are using 10 day timetable(2x5days) it can happen that the software generates 30 lesson on one week and 16 on the other week.

To prevent this, you have to define advanced cardrelationship that defines max lessons teacher can teach on the first 5 days(first week):



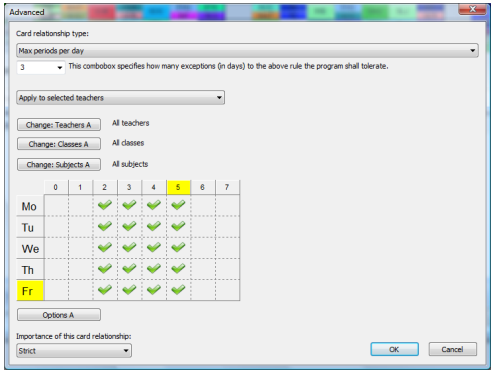
15.11 How to ensure lunch break for teachers

If you need to make sure that every teacher has at least one period free during lunch time for lunch, you can input it this way:

Example: Lunch between periods 3-6. This means there are 4 periods available. So we can input it making sure that during 3.-6. period teacher can have max 3 lessons.

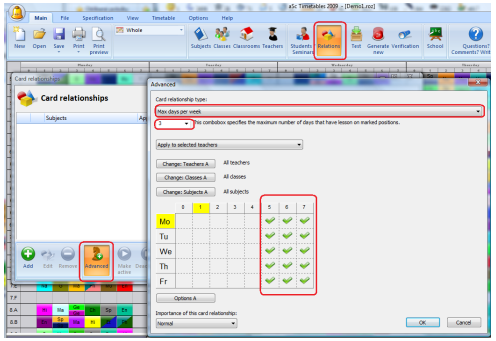
Go to menu - Specification - Relations -

Advanced and input values according to this picture:



15.12 Each teacher shall have one or two free afternoon

The bellow constraint will define that each teacher has 2 free afternnons:



Basically it says, teacher can have max 3 days with lessons on the positions marked on the time map. Make sure you input correctly all the marked entries.

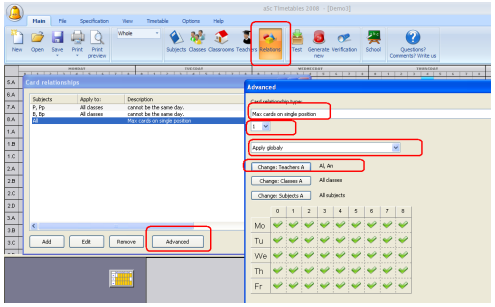
Notes:
- In our example afternoon was defined as

periods 5th and above. You can change this by clickin in the time map.
- same condition can be defined for mornings, again just change the map
- you can select only some teachers that shall be considered

15.13 Two teachers cannot teach at the same time

Usually you do not need to specify this kind of constraint, since most cases are solved by the fact that the teachers have to use the same room or they teach the same group of students.

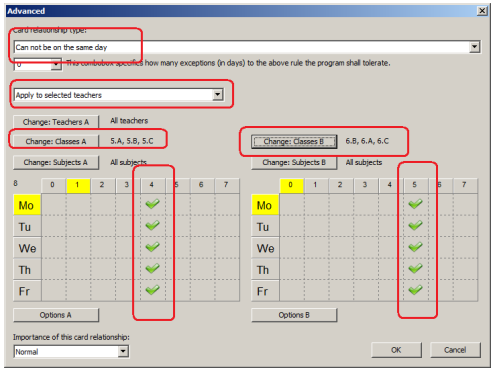
However if you really have two independent teachers, and you do not want them to teach at the same time, you can define advanced cardrelationship that says max 1 card on each position:



15.14 Teacher cannot teach 4th in Grade 5 and 5th lessons in Grade 6

This constraint can be usefull if you have a situation that you have different bells in grade 5 and grade 6th.

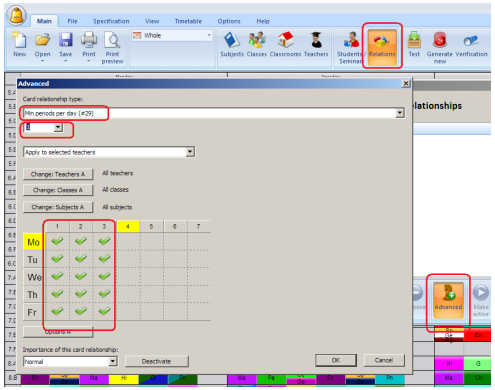
You need to use cardrelationship:



See also:
[10.7 We have different recess times in parts of school. How to input it? (Solution1)]
[10.8 We have different recess times in parts of school. How to input it? (Solution 2)]

15.15 Teacher must have some lessons in the morning

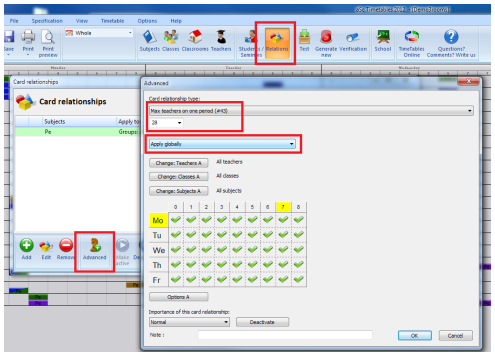
You can add cardrelationship that says, that each teacher has to have at least one lesson on periods 1,2,3:



Notes:
- you can of course change the time map to better reflect your definition of morning.
- use change teachers if this shall apply to only some teachers

15.16 We need two free teachers on each period to make sure we have enough teachers for substitutions

Add this advanced cardrelationship:



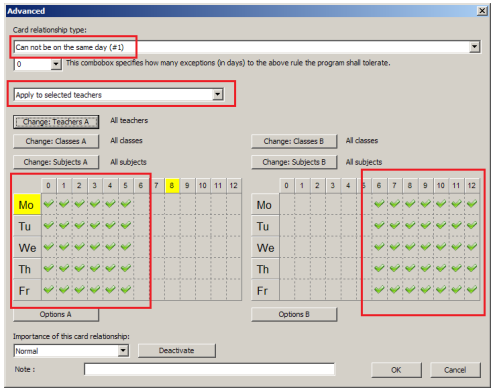
The number 28 specifies the maxiumum number of teachers that are teaching at one time.

So if you have 30 teachers at your school and you want to make sure there are always 2 free, you put max 28 teachers on one period.

Note:
- If you use cardrelationships starting with "Max cards" or "Max periods" the calcuation may not be correct when you have divided lessons or lessons with more teachers joind on one card. "Max teachers" correctly calculates the number of teachers regardless of joined/divided lessons.
- This solution can generate a timetable where for example one teacher will be responsible for most of the "free" lessons. This may or may not be what you wanted. In case each of your teachers shall have a predefined number of "duties" you can use this solution:
[15.18 Our teachers have substitution duty lessons, we need min 2 at each period]

15.17 Teacher cannot teach both in the morning and in the afternoon

You can use Main/Cardrelationships/Advanced and add Advanced cardrelationships:

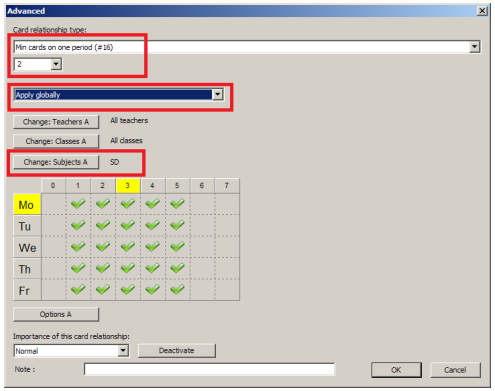


Apply it to teachers - so that it is checked for each teacher indivdually and mark the the two timeoffs the corresponding periods.

You do not need to mark all the periods, if you for example leave the 6th period unchecked on both sides it will simply mean the software will ignore the lessons placed on 6th period when checking this rule. Then teacher can have 1-5 + 6 but not 1-5 + 7

15.18 Our teachers have substitution duty lessons, we need min 2 at each period

1. Define new subject "Substitution Duty"
2. Create a lessons 'Without class' with this subject.
3. Then add this card relationship:



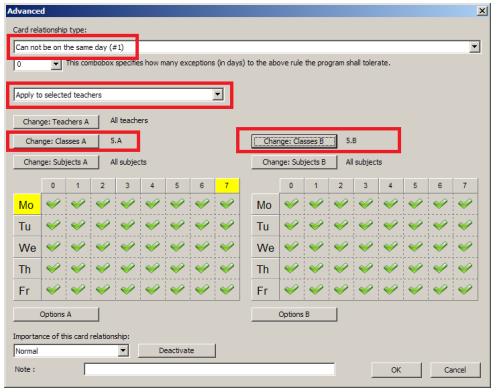
You can mark some periods in the timeoff map. The software will then ensure min 2 substitution duties on these marked periods only.

On other periods there may be just one, or none. On the marked periods there will be 2 or more.

Note:
In some schools this solution is not applicable because it requires you to define how many times each teacher shall have substitution duty.
If you do not know this in advance, you can use this solution:
15.16 We need two free teachers on each period to make sure we have enough teachers for substitutions

15.19 Teacher cannot teach in two different classes in one day

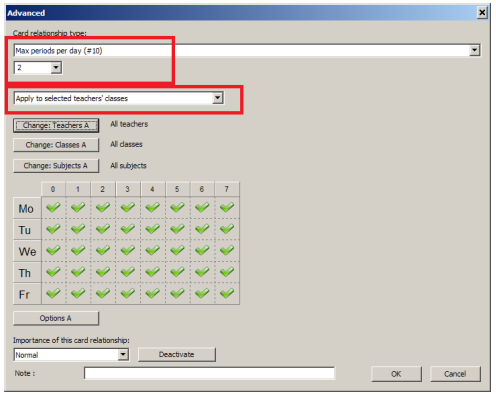
You can add cardrelationships that says, teacher cannot teach in 5A and 5B in the same day:



If you have more classes you will need to add more cardrelationships, depending on what you really need. This rule says that any card that matches the conditions on the left side cannot be at the same day as any card that matches the conditions on the right side.

15.20 Teacher can teach max 2 periods per day in one class

Add this advanced cardrelationship:



Select Max periods per day and set the number.

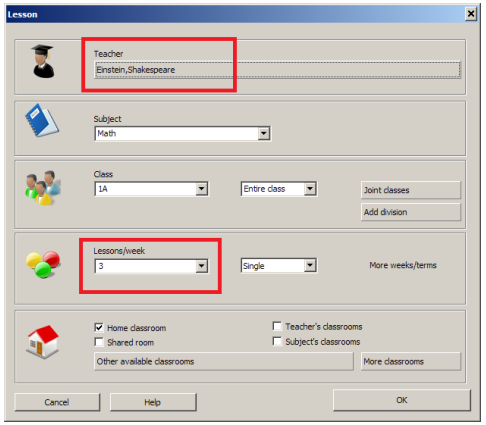
It is important to correctly select the apply to comobobox. In this case we have used "apply to selected teachers' classes". This means that this rule is applied to each class where each selected teacher is teaching separatelly.

If you for example select only apply to teachers it would mean that each teacher can have max 2 periods per day.

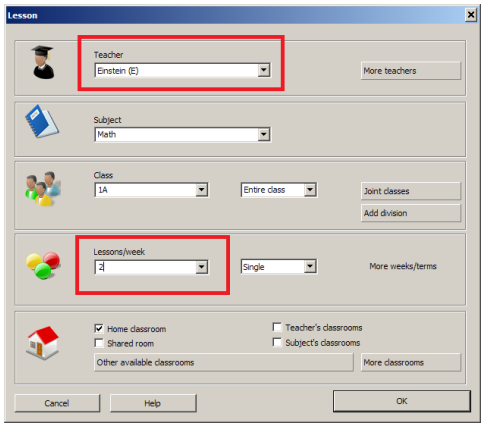
15.21 Two teachers are teaching together, but only 3 times per week out of 5 lessons

In other words:
- 3 lessons are with two teachers and
- 2 lessons are with just one teacher/

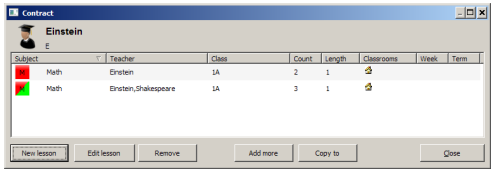
You can input it exactly as was requested:



then



It will then look like:

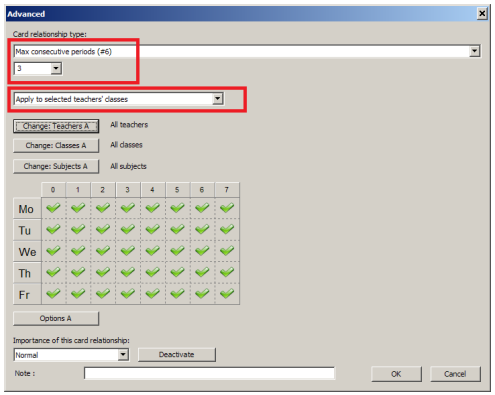


Notes:

- if you use the same subjet in both lessons, then the software automatically tries to distribute these 5 lessons equally over the week, in this case one period per day.

15.22 Teacher cannot teacher more than 3 consecutive periods in one class

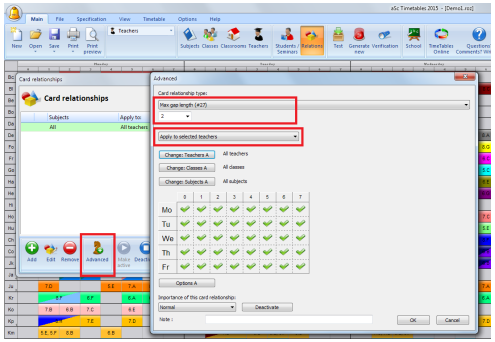
Add this advanced cardrelationship:



Please note the: Apply to selected teacher's classes. This will make sure the rule is applied to each teacher in each of his classes separatelly. If you use for example Apply globally, then there could not be 3 conscutive lessons in the whole school.

15.23 Teacher cannot have gap of length 2

You can add this cardrelationship



Notes:

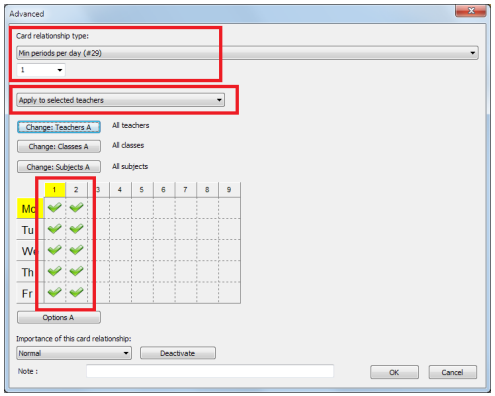
- use this only when you have some timetable generated

See also:

15.2 Teachers' windows in timetable

15.24 How to ensure that teacher starts teaching with 1st or 2nd period (he cannot start later than 2nd)

You can add this advanced cardrelationship:

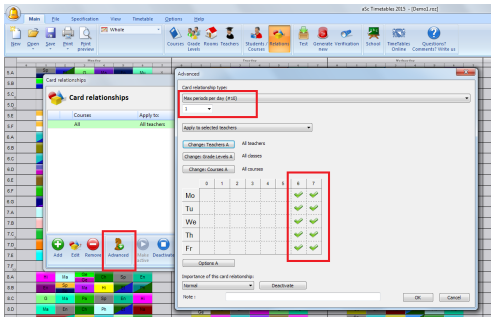


Notes:

- you can select the teachers and select only the teachers that have enough lessons
- as usual: add this constraint only when you can already generate the timetable without it
- in some timetables this constraint might not work, when you for example have much more teacher's than classes there will not be enough early positions to place all the teachers

15.25 Teacher cannot teach both 6th and 7th period. He can teach only one of these two.

You can insert this cardrelationship:



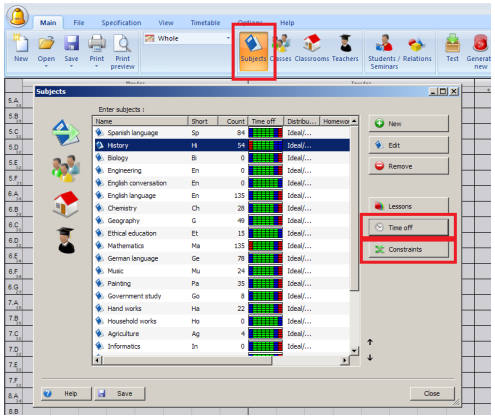
Select only those two periods in the timeoff

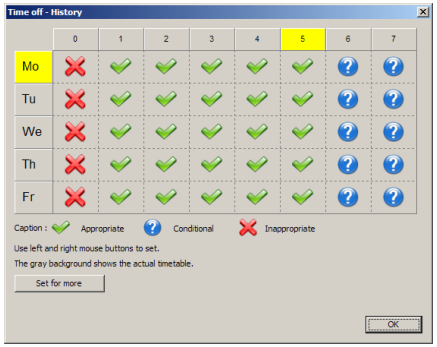
- the constraint max 1 per day is applied only on those lessons that are marked as green.

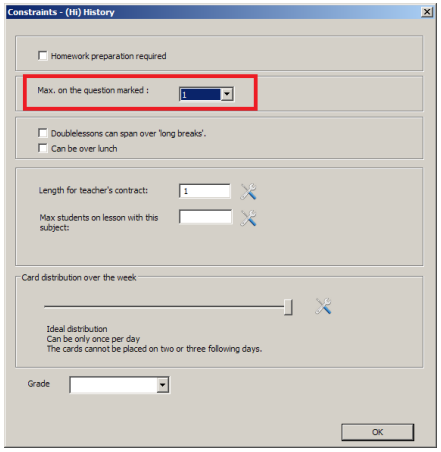
16 Constraints - Subjects

16.1 Max one history lesson on 6th position in each class (solution 1)

For each subject you can define how many times it is allowed to be on question marked positions:







Typical usage of this feature is the following:

Imagine the class has 3 lessons of history per week. It will probably not be possible to have ALL three lessons before lunch for all classes. But it will be very bad if ALL 3 lessons are after lunch. Then the teacher can complain that he cannot teach history in that class.

So you can specify that e.g 6th and 7th period are question marked and that you accept only one lesson on these question marked position in each class. Then the software will respect only those timetables where all three lessons are before lunch or where 2 lessons are before and only one is after.

Notes:
the above is set for ALL lessons of this subject.

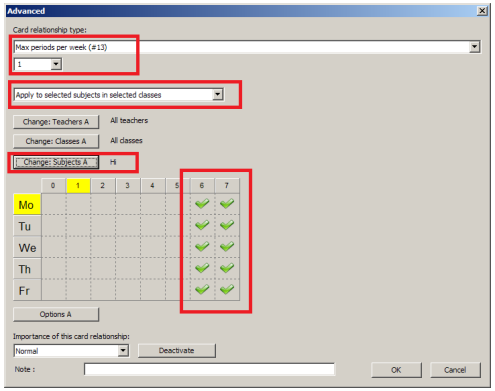
If you need different settings for different classes you can use one of these options:

20.2 Specify how many lessons shall be before certain position

16.2 Max one history lesson on 6th position in each class (solution 2)

16.2 Max one history lesson on 6th position in each class (solution 2)

You can add advanced cardrelationship Max periods per week and specify the 6th and 7th period in the time map:



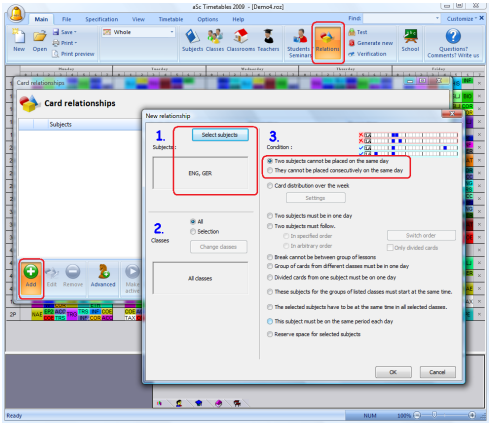
Do not forget to set "apply to selected subjects in selected classes".

The software will then check max 1 period of History in each selected class. If you for example use Apply globally the software will allow only one history on 6th or 7th in the whole school.

See also:
16.1 Max one history lesson on 6th position in each class (solution 1)
20.2 Specify how many lessons shall be before certain position

16.3 Two subjects cannot follow/Cannot be on the same day.

You can create a card relationship that defines that two subjects cannot follow one another or they cannot be on the same day:



16.4 Distribution of subject over the week

By default, program tries to distribute subject in class's timetable equably over the week.

This default rules are like:
1. If it is possible, program will put cards of subject on different days.

2. If number of cards of subject is more than number of days (e.g. 8 single lessons and 5 days), it will distribute it so that number of periods with this subject per day is nearly

equal for every day (in our example of 8 lessons, it will require 1 or 2 lessons per day).

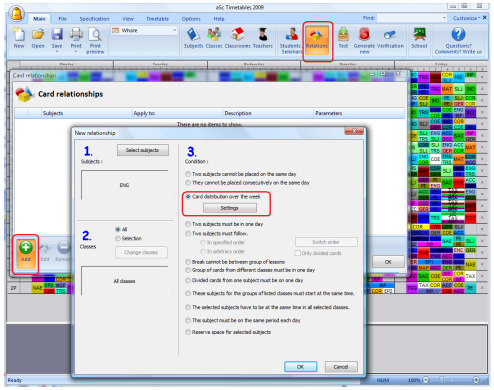
3.If subject is 2 or 3 times per week, it can not be on consecutive days (you can configure this in menu - Timetable/Parameters).

If you do not want the above default behaviour, there are two options to modify it:

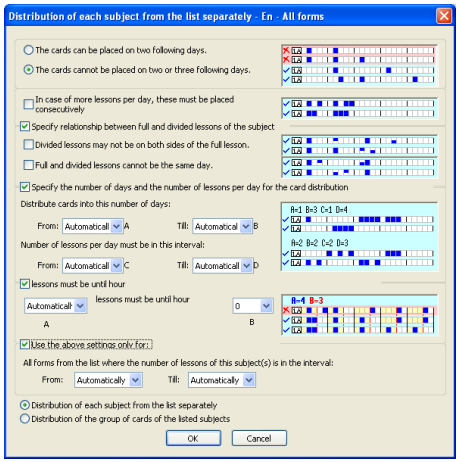
Option 1:
In Subject/Constraints you can specify the default distribution for the subject. Move the slider to the left to allow the software to put two lesson on one day:

Option 2:
You can also create customized distribution, where you can specify exactly on how many days the student can be. Using this way also allows you to specify that two single lessons on one day shall be placed consecutively.

Go to menu Specification/Card relationships/Add, then select subject(s) and class(es). Then choose "Card distribution over the week" and click on "Settings":



The settings dialog looks like:



You can check any combination for options for the selected subject/teachers lessons. When checking the checkboxes, the pictures shows you what will be acceptable and what will be unacceptable for the generator.

For example you can check this case:
7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.

A few more notes:

- With "Use above settings only for..." you can filter classes in which is this distribution applied. This way you can e.g. create distribution for classes that have 4 Math lessons per week without need to select those classes in previous dialog.

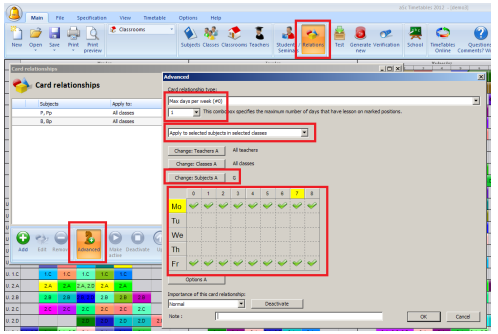
- "Distribution of the group of cards of the listed subjects" can be used to distribute e.g. "Biology" and "Biology lab" subjects together, so it will consider them as the same subject (and will not place them on the same day or consecutive days, e.g.).

See also:
16.10 Spreading lessons on different periods each day

16.5 I do not want my geography to be on Friday and then on Monday

The program automatically puts your lessons equaly over the week, not on consecutive days.

However by default Friday and Monday are not consecutive days. So if you do not want to have the lesson on Friday and then on Monday you have to define an advanced cardrelationship. Please check the following picture:



It sets that Geography lessons in all classes can be on max one marked day, be it either Monday or Friday.

It is important to choose the right card relationship:
"Max. number of days that have lesson on marked position"
and also the
"Apply to selected subjects in selected classes"
option in second combobox

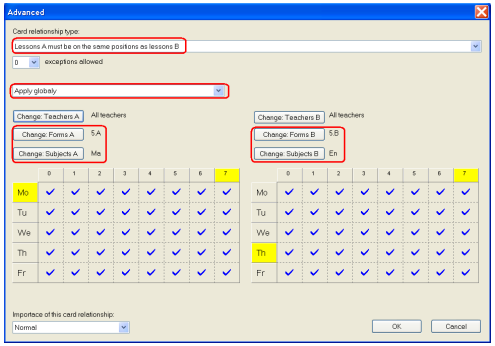
16.6 I want subject in one class to be on the same positions as subject in another class

Question: I want to have Math lessons in 5.A on the same postions as English lessons in 5.B

Answer:
You have to define new advanced card relationship (menu Specification/Card relatioships/Advanced) for this purpose. See picture below.

See also: 16.8 I need subject Math to be on

the same position in classes 5.A and 5.B



16.7 What if 2 specific subjects must be taught simultaneously?

If these subjects are from different classes check this article:
16.8 I need subject Math to be on the same position in classes 5.A and 5.B.

If they are from the same class:
If you have divided class and one part has English and another part have Spanish, the software will automatically put them together if they are from the same division. You do not have to specify this.

OK, but the software puts Math there instead of Spanish!
In this case you have to use another division for math lessons. The software can join any lessons if they are from the same division. See: 5.3 Divisions

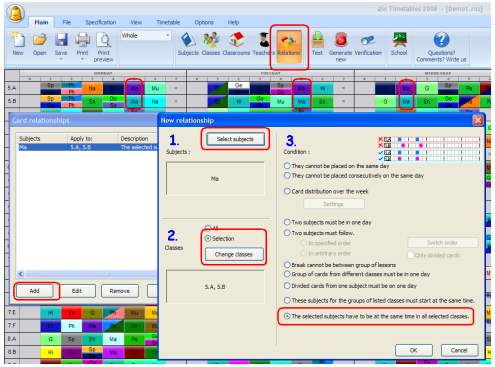
If you do not want to have English alone at the end of the day and Spanish alone at the end of some other day, you might use this: see 17.6 Both groups have to finish the education at the same time!

Another option is to join the groups or class, but use this only when the join is always the same: 9.5 How to specify lessons where students are joined from two classes?

For a very special case you can say that groups have to start at the same time: 20.3 Groups have to start at the same time

16.8 I need subject Math to be on the same position in classes 5.A and 5.B

Please go to menu - Specification/Card relationships/Add.
Use card relationship: "The selected subjects have to be at the same time in all selected classes."
See picture:

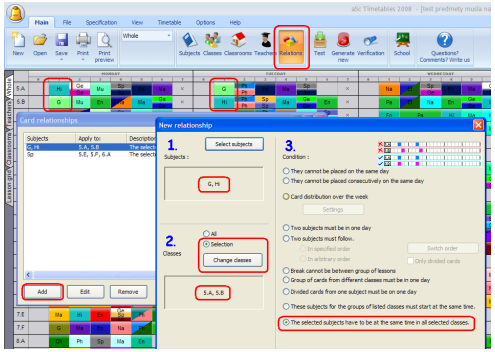


Notes:

1) For 5C+5D, you will need to specify another card relationship.

2) If you want this constraint also for English lessons, you will also need to create another card relationship. That is, you will have one card relationship for Math and one for English. (If you select two subjects in single cardrelationsip, it has different meaning, see 3)

3) It is also possible to say that two (or more) subjects must be on the same positions in 5.A and 5.B:

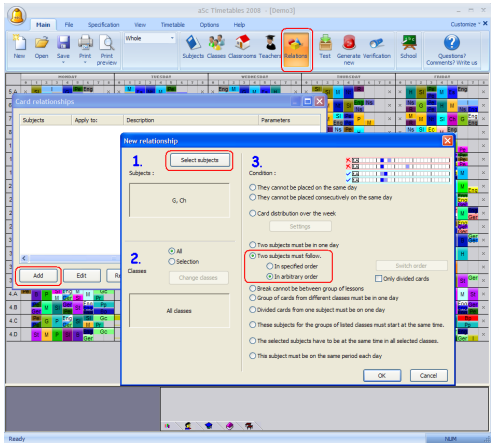


This function is available from version 2008.3.0.

See also:
20.3 Groups have to start at the same time

16.9 Two subjects must follow each other

You can create a card relationship that defines that two subjects must follow one another (in arbitrary or specified order):



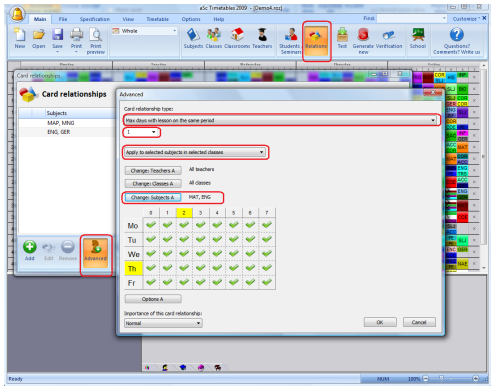
16.10 Spreading lessons on different periods each day

Question: How can I distribute e.g. 5 math lessons over the week so that they are on different periods each day. I don't want all the math lessons to be at first period each day.

Answer:
You can use advanced card relationship.
Go to menu Specification/Card relationships/Advanced.
- select type "Max days with lesson on the same period".
- choose "1" in combobox below.
- choose "Apply to selected subjects in selected classes".
- select "Classes" where you want to apply this constraint (or leave it as "All classes")
- select "Subjects" Math (or more subjects).

This will ensure that there is max 1 Math (or some other selected subject) on each

period.



The above picture actually shows two subjects in that card relationships. However since we have specified "Apply to selected subjects in selected classes" then each subject is treated separatelly in each class. So you only need to define one cardrelationship to tell that there shall be only one math lesson and only one English lesson on each period during the week.

Cautions:
- usualy this relationship is not needed. In the complicated schedules the lessons will be totaly random in your timetable.
- this relationship can easily kill your timetable if used inproperly. You shall only add it when necessary, for example when previous generations tend to put some lesson on the same position over the week.
- also you might consider specifying "Max 2" on each period. This is easier to generate and will in most cases do the job.

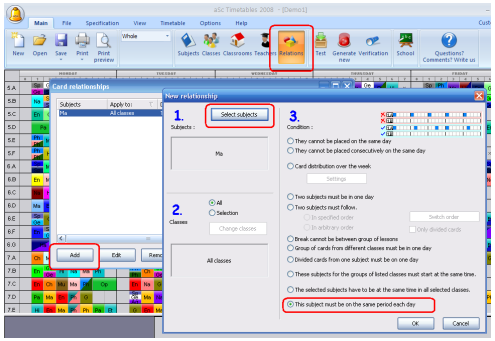
See also:

[20.2 Specify how many lessons shall be before certain position]

16.11 I want to have Math lessons in a class on the same period every day

You can specify that some subjects must be on the same period every day.

Just add a card relationship that says 'Subject must be on the same period each day':



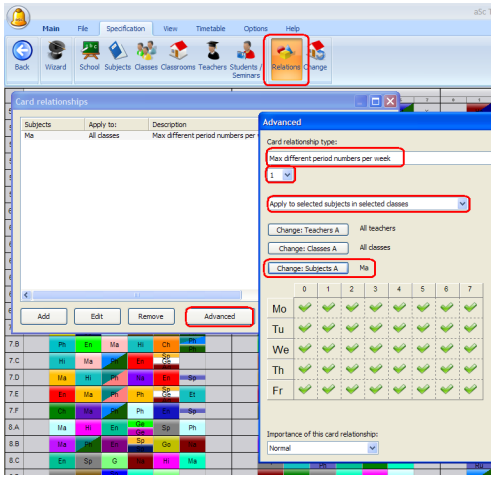
Note: if you specify more subjects, for example Math and English, then Math lessons will always be on 2nd period and English lessons will always be on 4th period.

Advanced usage: In some cases you might need to use the advanced cardrelationship. For example if class has 2 English lessons with teacher A and 3 English conversation lessons with teacher B and you want both subjects to be on the same period each day. The usage of the advanced cardrelationships is as follows:

Please go to "menu - Specification - Relations - Advanced" and input:

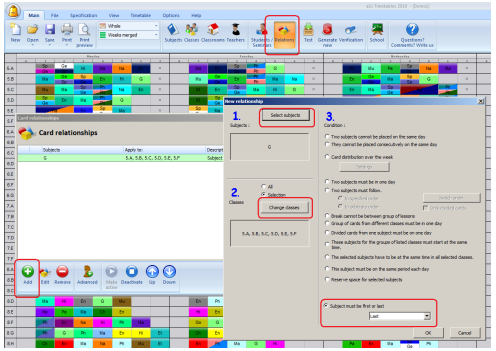
- Max different period numbers per week
- 1 (see note below)
- Apply to selected subjects in selected classes
Select subject Math.
Optionally you can select also classes (if you want this constraint to apply only on certain classes).

Note: This field should contain lesson length in periods. If you want to have this constraint for a subject that is scheduled as double lessons, input 2 instead of 1.



16.12 I need subject Geography to be last lesson on a day in classes 5.A, 5.B, 5.C...

You can specify this with card relationship:



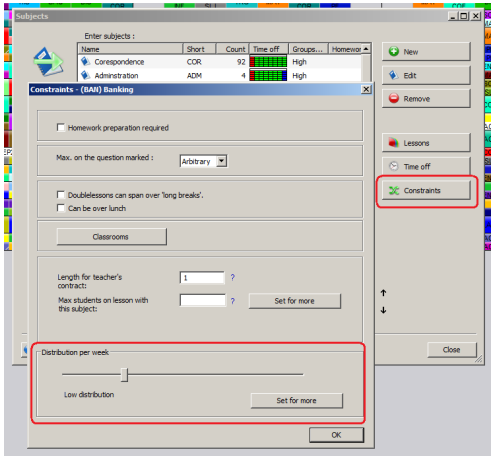
16.13 Modifying the default card distribution per week for one subject

Using card relationships you can tell the software exactly into how many days and how many times per day it can place each subject.

[16.4 Distribution of subject over the week]

Although the above gives you full control on how to distrubute the lessons within week, sometimes it might be just enough to modify the defaults for each subject

In subject constraints you can find slider. The more the slider is to the right the more evenly the subject is distributed within week:



The very right position not only tries to place the cards into each day, it also check if they are not on the consecutive days(in case you have 3 lessons per week, they cannot be on the first 3 days)

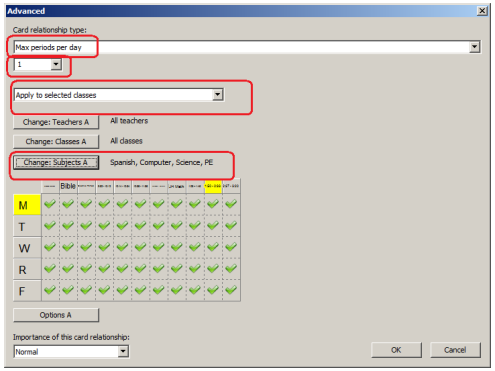
On the other side: the more this slider is to the left the less even the subject is distributed withing week. For examle the left most position don't care about the distribution at all. So in case you have 5 lessons per week, they might end up all on Monday.

Notes:
- if you know from the start you will want double/triple lessons, input them:
[7.4 I want to have Single AND Double lessons of one subject! E.g 1+1+1+2]
- in case you don not need the subject to be evenly distributed, move the slider to the left, it will make the generations easier

16.14 I want just one PE/Art/Drama lesson per day

My classes shall have no more then one PE or Art or Drama lesson.

You can add this advanced cardrelationship:

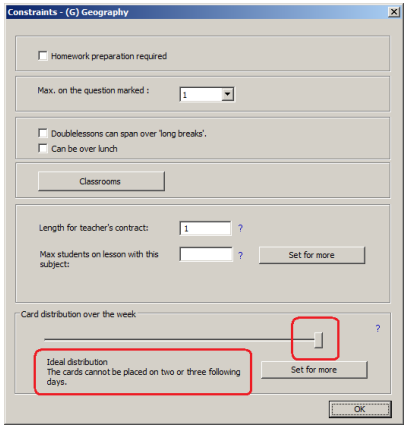


Select your subjects. and make sure you use "Apply to Classes".

16.15 I have Geography two times per week. It shall not be on consecutive days.

Select Geography in the subject list and press button "Constraints".

Then change the Default carddistribution over the week to "Ideal/No Consecutiive days":



Then:
-if you have this subject 2 times per week it not placed on two consecutive days. So not Mon/Tue, but Mon/Wed or Mon/Thu.
-if the class has this subject 3 times per week it is not placed on 3 consecutive days. So not Mon/Tue/Wed abut Mon/Tue/Thu or Mon/Wed/Fri.
-if the class has this subject 4 or more times per week, this setting has no effect it is the same as Ideal setting. So it will not put these subjects on the same days

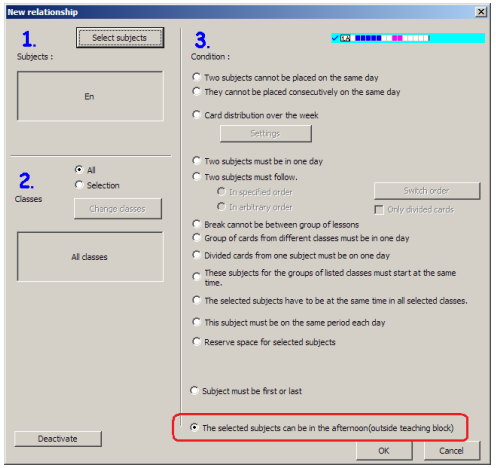
See also:
[16.5 I do not want my geography to be on Friday and then on Monday]

[16.4 Distribution of subject over the week]

[16.13 Modifying the default card distribution per week for one subject]

16.16 How can I define lessons that can be outside teaching block(in the afternoon)?

If you have some subjects that can or has to be in the afternoon you can add this cardrelationship:

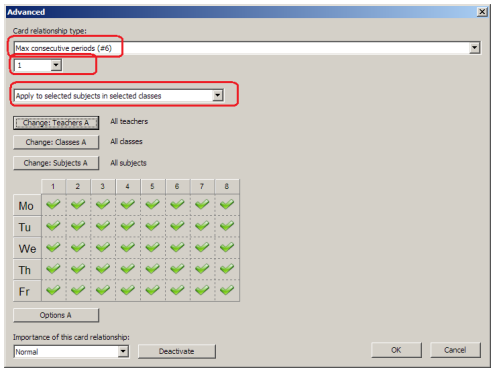


Now the selected subjects can for example be on 8th period, while normal teaching ends at 5th period. Without this card relationship the software will never create 3 period gap for the students.

Notes:
- If you want to limit the maximum gap length the children can have, you will need to add next cardrelationship:
[17.9 Class can have max 2 gaps per day]
- you can also modify the timeoff for classes and subjects to pack the timetable into less lessons, maybe in some cases this is easier than by adding that relationship

16.17 There can be two maths on one day, but not consecutivelly

If you have 6 lessons of math per 5 day week, then there will be two math lessons on one day. If these cannot be one behind another you need to add this advanced cardrelationship:



Notes:
- make sure you select the appropriate subjects, if you for example already have double lesson from that subject, they will not be placed.

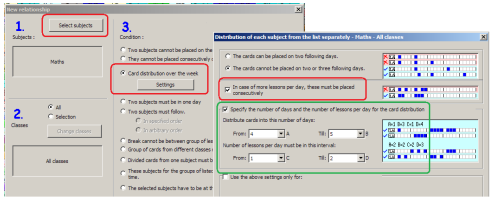
See also:
16.18 There can be two math lessons on one day, but they need to be placed consecutivelly

7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.

16.18 There can be two math lessons on one day, but they need to be placed consecutivelly

If you have 6 math lessons per 5 day week, then two will be on one day. In this case you can tell the software to place these consecutivelly:

Add a new cardrelationships and select entries marked by red color:



The green color is optional, if for example you have 6 math lessons, the software will by default spread them on 5 days(one day will have two lessons).

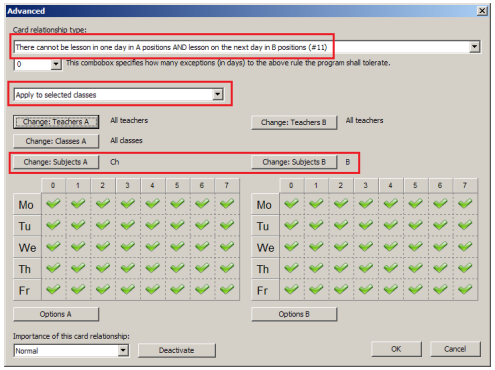
But you can tell the software to place 6 lessons on 4 days. Or as shown on the picture you can let the software to decide if 6 maths will be on 4 days or 5 days.

See also:
16.17 There can be two maths on one day, but not consecutivelly

7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.

16.19 Biology cannot be on the day after Chemistry

Please add the following cardrelationships:



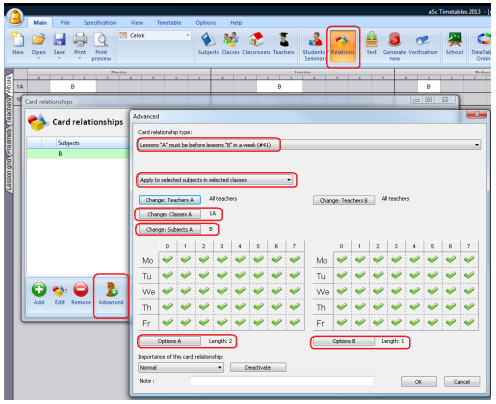
Note:
-you can use the map bellow to specify that for example class cannot have biology in the morning when it had chemistry in the afternoon on the previous day. Just mark the corresponding times in each map.

16.20 Double lessons must be before single lessons

Question: Subject Bio in 1A is 5 periods per week, 2 double lessons and one single lesson. We need that these cards are distributed over the week in this order: 2,2,1. How to input this?

Answer:

You need to create a new Advanced card relationship according to this picture:



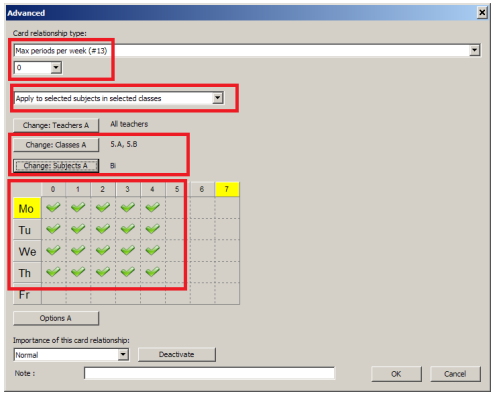
16.21 Biology has to be in the afternoon in certain classes and in the morning in other classes

If you define time-off for Biology, it then affect all Biology lessons in all classes.

If you need different time-offs for different classes then:

A. One solution is to define two subjects, with two different timeoffs.

B. If you do not want to define second subject, you can leave the timeoff empty and define advanced cardrelationships like:



The cardrelationship says that there can be max 0 - meaning no biology lesson on the marked periods in the selected classes(5a/5b). So in other words biology in these classes can only be on the unmarked positions.

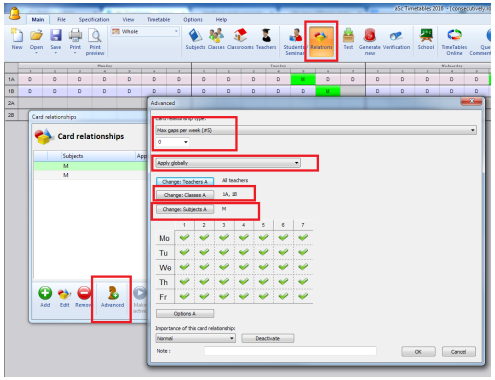
You will probably want to define also other similar rules for other classes that has to have Biology on different positions.

Note:
- you can change max 0 to max 1. This can be usefull if the rule is too strict for your timetable and perhaps you can tolerate 1 biology in the marked area, but not two in any given class. (the rule is applied to each selected subject in each selected class separatelly)

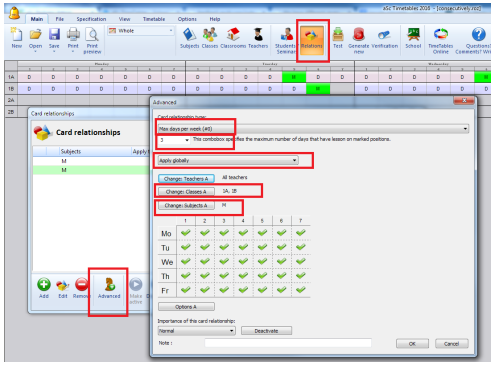
16.22 5A has to have Biology right before or after biology in 5B (the two classes have to have biology lesson on consecutive periods)

You will need to input two cardrelationships for this:

1. First specify that there shall not be a gap between lessons from certain group. Select subjects, classes and "apply globaly":



2. However the above rule will consider as a gap only a space between the two lessons on the same day. So if Biology is on different days in 5A and 5B the software doesn't consider this as a gap. So you will need to add second cardrelationship that will force the lessons into the same day(s):

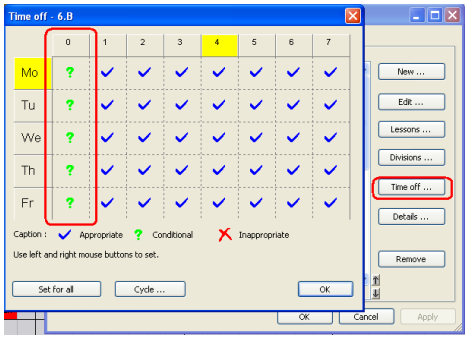


So if you have 3 biology lessons per week in 1A and 3 biology lessons in 1B you will simply request that both 1A and 1B have biology lessons on 3 days. Thus the biology lesson will be in both classes on the same day.

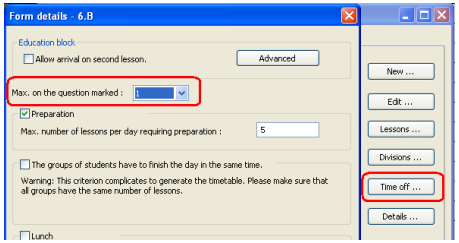
17 Constraints - Classes

17.1 How to specify that class can have max one 7th lesson or max one 0lesson?

Simple solution:
First define the quesion marked positions:



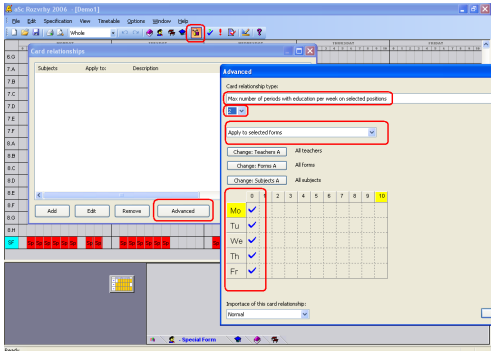
Then you can say the class shall have max one lesson on the question marked positions. This can be done in Class's details:



Complex solution:
The simple solution cannot be used if you want to specify two conditions. For example the class has to have max one zero lesson and max one 7th lesson.

In this case you can use advanced card relationship. Here you can specify the area and maximim number of the cards in this area per week.

Please check this picture:



We have specified that all classes can have

max 2 lessons on the marked positions per week. So it will not happen that one class will have 3 zero lessons.

Notes:
- you can use the same cardrelationship for teachers, just change 'Apply to' combobox.

17.2 Education block - allow some classes to come later or to leave school later.

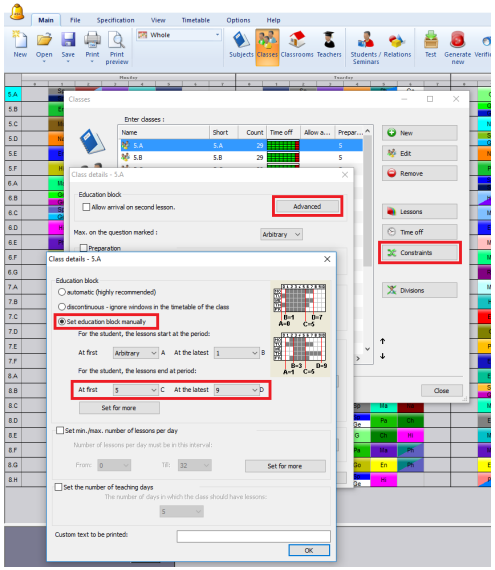
The program calculates the amount of lessons per each day automatically.

If you for example have 32 lessons per 5day week then the software calculates 32/5 = 6.4. So the automatic lessons distribution decides that this class has to have 6-8 lessons each day. In this case the software can spread the lessons like 6+6+7+7+6, or 6+8+6+6+6. It will not generate 9+5+5+9+4

Also the software starts with 1st lesson and fills the education for each class until the calculated max per day.

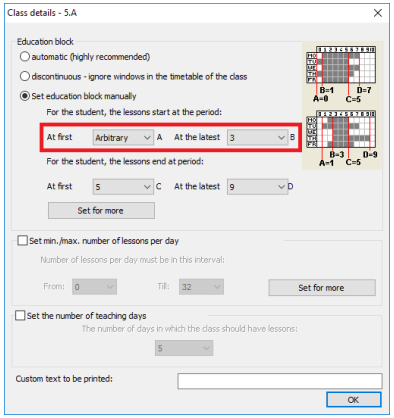
This automatic teaching block calculation is good for most of the schools. However if the class has 32 lessons and you want to allow 5-9 lessons each day, you have to set the teaching block manually.

In Class/Constrains/Advanced you can specify that the children can go home after 5th but not later than after 9th period:



Exactly the same way can be used to specify that some children can come later to the school. This comes especially handy if you have room/teacher shortage. If some children can start one or two lessons later than the others, then it might help to spread the lessons and solve the room/teacher shortage.

On the following picture we have specified that children from 5.A can come to the school at latest on the 3rd lesson(they cannot come later, but they can come anytime sooner):



Please note that this not necessarily apply to the whole class. A part of the class can come later and stay longer, while the other part will come sooner and leave later on the other day. This is especially handy if both groups are using the same room or the same teachers teaches both parts of the school.

The education block sets when the children can start and end their education. This basically sets min and max lessons per day they can have. You can specify it even furher if necessary. See 17.3 Can I set the min/maximum number of lessons per day for one class?

A bit more on educational block can be found in this article:
17.4 Checking of gaps/windows in class

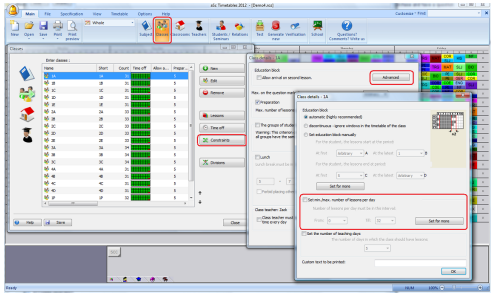
17.3 Can I set the min/maximum number of lessons per day for one class?

Yes it is possible to set min/max lessons per day for each class.

However please note that by default the software calculates this for you. If you have 32 lessons per 5-day week, then the software will allow 6-8 lessons per day. So setting the min/max is only needed when you want to override this automatic calculation or if you have turned it off.

Please read this article first. It shows you how you can overide the automatic teaching block calculation:
17.2 Education block - allow some classes to come later or to leave school later.

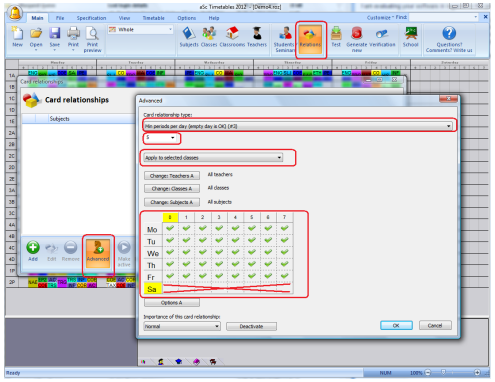
So if you use an automatic teaching block that calculates 6-8 per day, the software will not put 9 lessons per day. However you can specify that you want max 7 lessons. Go to menu Main/Classes/Constraints/Advanced:



Ok, Ok but I want to have min 5 on **week**

days and min 2 on **saturday**.

In this case you have to define advanced card relationships that defines minimum lessons on one day and specify some days. It defines that you want minimum of 5 lessons on Mon-Fri:



See also:
[17.2 Education block - allow some classes to come later or to leave school later.]

17.4 Checking of gaps/windows in class

By default the software will not create a window/gap for a class.

The software calculates so called Education block. Education block is term used to describe time range when some class has to have education. For example it may mean, that every student of some class MUST have education between periods 1-5, and CAN have education between periods 0-7.

Generator computes education block automatically based on total number of periods defined in class's lessons and settings in class's details. For most schools this automatic education block works well, but in some cases this automatic fails and education block needs to be set by hand.

Possible cases **when automatic education block fails**:

* divided lessons with length 3 and more, which don't have complementary lesson
* divided lessons with length 2 together with some complicated combination of other lessons without complement
* divided lessons with length 2 and more in combination with breaks around end of education.
* when you define lunch break as forbidden period using time-off

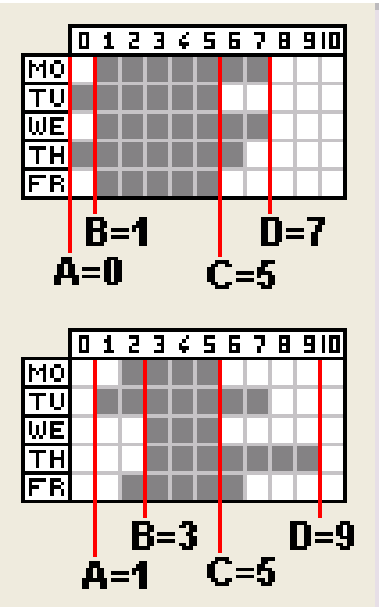
These are only cases when it is possible that there will be problem with education block. Real problem occurs when program says that there is some problem with timetable of class, and you think that this timetable is ok. Program may show one of these problems in verification (Menu - Timetable - Verification):

* Class (class name) contains a window
* (card) is out of teaching block

When you click on one of these problems, program will show you more details about it, including area of automatic education block ("Class must have lessons in this interval" and "Class can have lessons in this area). If you are not satisfied with automatic teaching block, you can click on Advanced button in Constraints. This will open advanced Class details dialog where you can specify teaching block settings. You have 3 options here:

* **automatic** - this will compute teaching block automatically. Automatic teaching block is computed so that education starts on period 1 and ends between periods N and N+2, where N is number computed from total number of lessons in class.
* **discontinuous** - this will completely disable education block and also checking of windows in timetable of class
* **manual** - here you can specify manual settings

Manual settings of education block are defined by four numbers: A, B, C, D.



Numbers A and D define when class can have education. You can define similar thing also with Time-off for that class. You can leave those values "Arbitrary" - in that case only Time-off is important.

Numbers B and C define area, where all students in class must have education. So there must be lesson on every position in this area for every student. If there is some lessons missing, program will report it as window even in cases when it is not really window.

You can leave any of these numbers as "Arbitrary". In case you set all of them "Arbitrary", program will only check windows in class timetable, but will not care about time when students have education. So

they can have education one day in the morning and another day in afternoon.

See also: 17.2 Education block - allow some classes to come later or to leave school later.

17.5 Avoid single lesson after lunch break.

First see: 5.6 How to specify when a class can have a lunch?

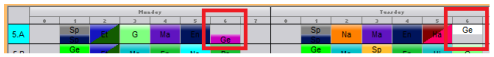
Question: On our school students have 6 or 7 periods in a day. In case of 6 lessons, they are on periods 1-6. In case of 7 lessons per day, they are on periods 1-5, period 6 is lunch break and then lessons on period 7-8. We do not want to have single period after lunch break. How to input this constraint?

Answer:
This is a bit tricky: You have to define three constraints to achieve this:

1) Define lunch break at periods 6-7 in menu - Specification - Classes - Details.
2) Limit max consecutive periods in class to 6. Go to menu - Specification - Card relationships - Advanced. Choose type: "Max consecutive periods of education", choose 6 in combobox below and "Apply to selected classes". Click OK.
3) Ensure at least two periods after lunch break. Go to menu - Specification - Card relationships - Advanced. Choose type: "Minimal number of periods with education per day on selected positions (empty day is ok), choose 2 in combobox below, "Apply to selected classes" and uncheck periods 1-6, so only periods 7-8 are checked. Click OK.

17.6 Both groups have to finish the education at the same time!

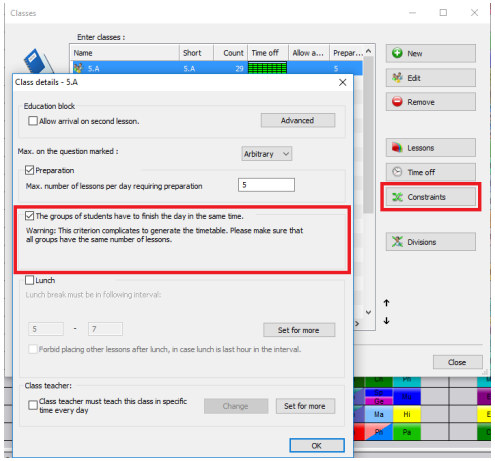
By default the software can generate a timetable where one half has English on Monday 6th period, while the other half goes home after the 5th period. The next day the groups are switched:



This can greatly increase the chances of generating a timetable.

However if some teacher has to go to lunch with children then this behaviour is probably not acceptable for you, because you will need two teachers for escorting children to lunch each day(one for each group).

In this case you can forbid this behaviour by checking that 'Groups must finish the education at the same time':

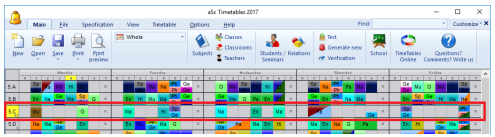


17.7 What does the warning 'The entered timetable is probably not complete' mean?

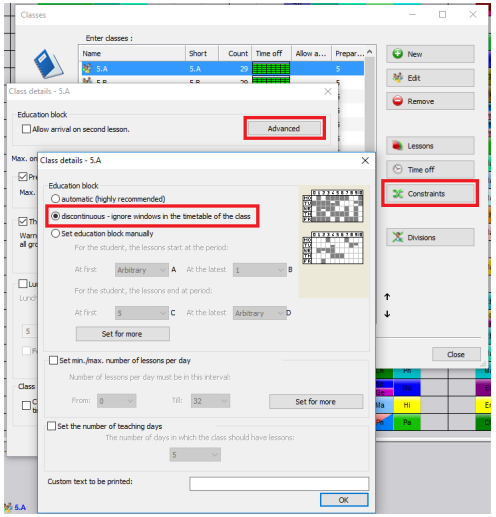
By default the software tries to create a timetable for each class that starts with 1st lesson. It also calculates the average lessons per day and tries to balance the lessons put per each day.

However if your class has less than 3 lessons per day, the software assumes that this is a special class and turns off the automatic teaching block for this class.

So it's lessons do not have to be from 1st period, they can be at any time during the day.
For example: the lessons of class 5.C on the picture can be anytime during the day.



You can ignore this warning message or if you want to get rid of the warning message you can specify that this class shall not use automatic teaching block calculation:



17.8 Apply conditions to whole grades

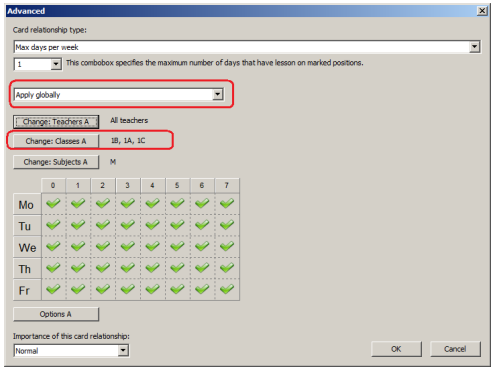
In some rare cases this might save you some time:

Example

Lets say you want to have all Music lessons from each grade on the same day.
In other words Music lessons from 1A,1B,1C shall be on one day, music lessons from 2A,2B,2C shall be on just one day and so on.

This can be done by adding several card

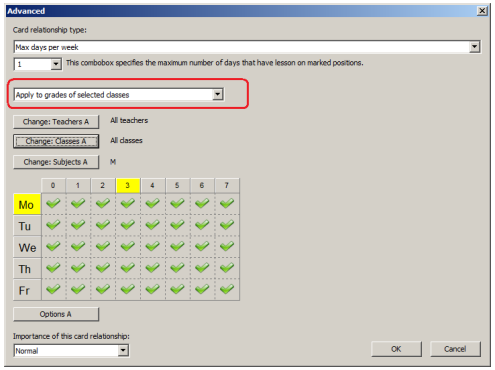
relationships like this one: max days = 1, select classes 1A,1B,1C and choose 'apply globally':



Apply globally is used bacause you want the software to include all lessons from the selected classes 1A,1B,1C.

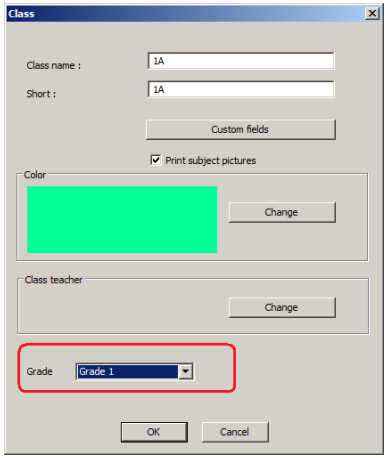
Then you would need to add card relationship to 2A,2B,2C and so on for each grade.

However if you select Apply to grades of selected classes, then you just need to input one card relationship and the software will internally break the selected cards into groups for each grade and apply the constraint to each group(grade):



The advantage of the second aproach is that you have to input one card relationship instead of 10(one for each grade). If you have special requrements that need 2-3 card relationships for each grade, this can be even more helpfull. Not to mention the possible errors in inputting 30 card relationships.

Note:
- if you select only some classes the software first builds a group of cards and only then divides it by grades. So if you omit one class, its cards will simply not be affected by this card relationship.
- you can input grade in class dialog:

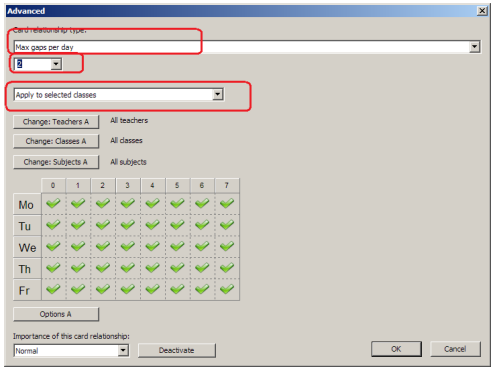


17.9 Class can have max 2 gaps per day

By default the software will not create gap for the students. The software will calculate the average number of lessons per day and then it places them consecutively.

However if you need to have gaps, you can set "discontinius" teaching block. Or you can say that some subjects can be in the afternoon.

Then you can add this cardrelationship to minimize the created gaps:



Notes:
- this topic is for longer gaps, if you just need one lesson free for lunch you can do this directly:
5.6 How to specify when a class can have a lunch?
- the same cardrelationship can be setup for students:
22.14 Student can have max 3 gaps per day

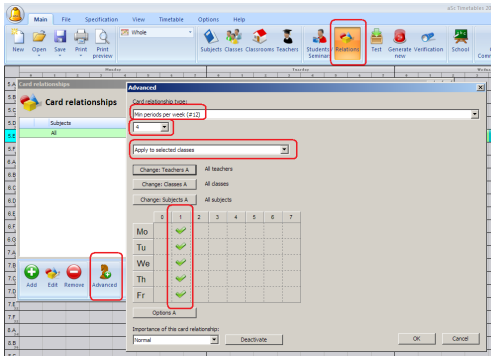
See also:
16.16 How can I define lessons that can be outside teaching block(in the afternoon)?

17.10 Children can come to the school on second period, but only once per week

1. First you need to allow that students can arrive on the second period:
17.2 Education block - allow some classes to come later or to leave school later.

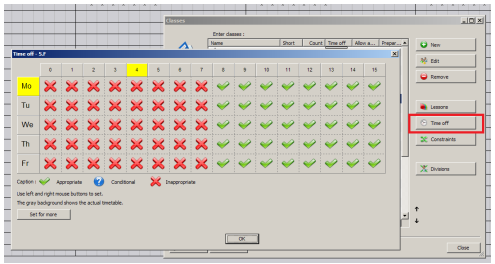
2. Then you can limit how many times this will happen by cardrelationship that says that class has to have at least 4 lessons on

period 1:



17.11 Our school works in two shifts, some classes come in the morning, some in the afternoon

If it is already decided which classes come in the morming and which in the afternoon, then you simply need to modify the time-off of the classes:



You may need to raise the number of periods per day in menu Main/School.

If you want the software to determine this which classes the solutions depend on the type of your timetable and has to be advised individually.

Do not forget to check teacher's gaps. The teachers usually need much more gaps per week in this scentario

See also:
15.2 Teachers' windows in timetable
15.17 Teacher cannot teach both in the morning and in the afternoon

18 Constraints - Classrooms

18.1 Optimizing the room usage for students

The software allows you to input several constraints to improve the usage of the rooms, depending on what is important to you:

1. If certain room is better for specific subject:
18.2 At least one lesson per week has to be in certain classroom

2. If certain room is not very good, but due to capacity you still have to use it, here is how to minimize the usage:
18.4 Lesson can be only once per week in certain classroom

3. If the lesson can be in several rooms, but you want the class to use the same room on all lessons per week:
18.3 We have 3 lessons per week and they shall be in the same classroom

What is important is that during the input always try to specify all the available classrooms to each lesson. If Music lesson can be in special MusicRoom or in Homeclassroom, input both, not just MusicRoom. The software is not allowed to put the lessons outside of the options you specify so if at least one music lesson needs to be in homeclassroom, it will have problem to generate the timetable.

Once you have some timetable generated you can explain to the software which rooms are better/worse either by the above constraints or simply by removing the room from the list of available rooms for certain lesson. But you will know you are on a good path.

Notes:
- If you are generating with relaxation, then you may consider adding the above cardrelaxations with lower priority. You may even add two cardrelationships. One that says at least one lesson in better room, second that at least 2 lessons in better room. And specify this 2 is low importance.

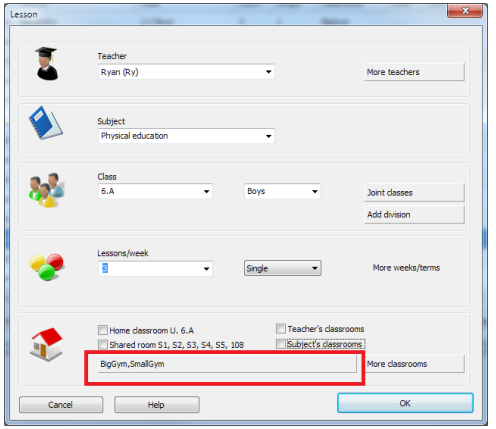
See also:
18.5 Reducing the room usage

18.2 At least one lesson per week has to be in certain classroom

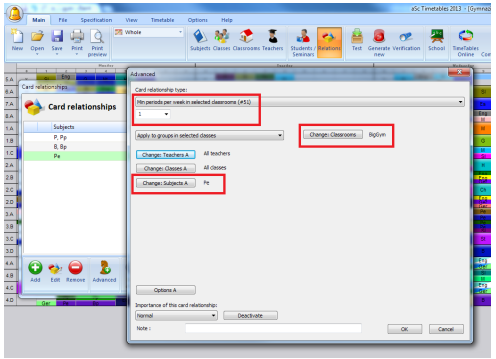
Let' say you have 2 classrooms for PE. You want the kids to be always in the BigGym room, but you know this is not possible. Some of the PE lessons need to be also in SmallGym room.

So you want to make sure that each kid is at least once per week in the best classroom.

1. First make sure you have defined all the Gym rooms as available to PE lessons. So that the software can choose any of them during the generation.



2. Add advanced cardrelationship like:



So min one PE lesson per week shall be in GymBig. Please note the "Apply to groups in selected classes". If you divide your PE lessons to groups Girls/Boys, this would guarantee the GymBig at least once for each group.

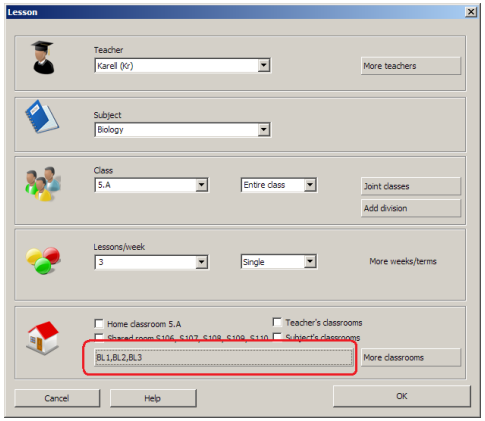
If you however just select "Apply to selected classes" the generator will only check if there one PE lesson per class, which will mean that only boys will be in BigGym.

See also:
18.1 Optimizing the room usage for students

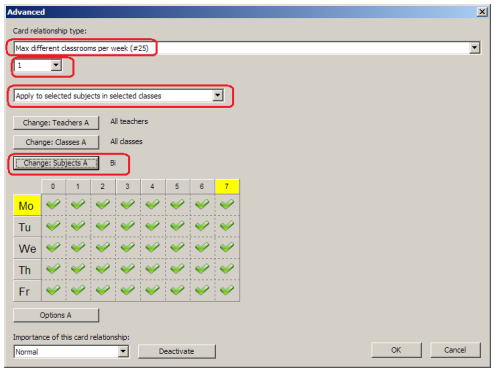
18.3 We have 3 lessons per week and they shall be in the same classroom

Problem:
Lets say that class 5A has biology lesson three times per week. Biology lesson can be in BioLab1 or BioLab2 or BioLab3, the generator can choose one, but it has to be the same room for all 3 biology lessons.

Solution:
1. Input the biology lesson so that it can be in any of the 3 labs:



2. Add advanced cardrelationship that says that Bio lesson in any class can occupy max 1 classroom per week:

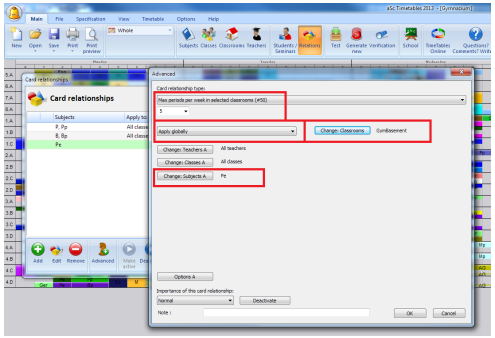


18.4 Lesson can be only once per week in certain classroom

For example you have two Gyms at your school. Big and small. Unfortunatelly these are not enough to accomodate all your Physical Education lessons, so in some cases you allow the Gym to be in the cellar in the basement.

But of course you want to minimize this.

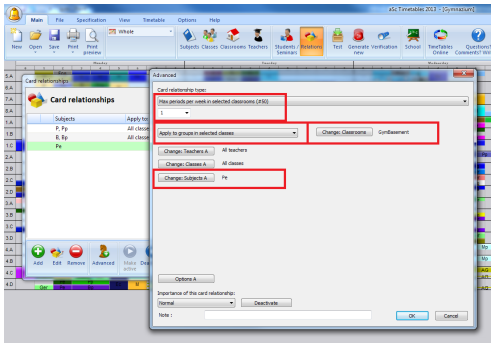
So you can simply say that this room can only be used for example 5 times per week:



Notice the 'Apply Globally'. This means the max 5 is applied to all the PE lessons at your school.

So this way you have limited the usage of the basement room to necessary minimum. However it can happen that even though this room is only used 5 times, it maybe that one class have all their lessons in this basement room.

To fix this you can add next cardrelationship that will say that each class(or group if your PE is divided into groups) can have max 1 PE per week in the basement:



Now each group has PE max once per week in this emergency classroom and the room is used only 5 times per week in the whole school.

Notes:
- once you genererate a timetable you may try to harden the constraints and try max 4 per week.

See also:
18.1 Optimizing the room usage for students

18.5 Reducing the room usage

The rules descibed in:

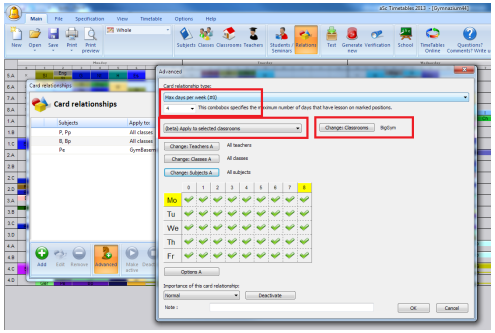
18.1 Optimizing the room usage for students
shall help you to achieve the room assigment that is acceptable from the timetabling point of view.

However once you have the timetable ready you may want to reduce the room usage for example to save on cleaning costs or to allow more room renting.

Here are some tips:
18.6 GymRoom can only be used 4 days per week(GymRoom has to be free on 3 afternoons)
or
18.7 Concentrate groups of lessons into fewer classrooms

Notes:
- add these rules only after you have an acceptable timetable.
- generate with relaxation and use low importance for these rules so that yuo do not create much worse timetable for teachers and students just to fee the Gym room for renting on one afternoon.

18.6 GymRoom can only be used 4 days per week(GymRoom has to be free on 3 afternoons)



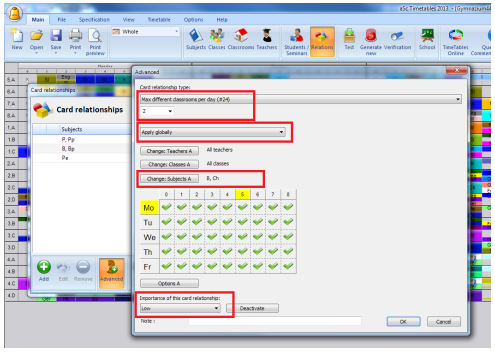
If you specify only the afternoon lessons in the timeoff map, then the constraint will only count days where the classroom is used in the afternoon.

So you can specify for example max 2 on afternoon lesson, this would mean that the classroom is free on 3 afternoons per week.

See also
18.5 Reducing the room usage

18.7 Concentrate groups of lessons into fewer classrooms

For example the have 3 laboratories and Biology and Chemistry lesson2 can be in any of these. You can add this constaint that will specify that only 2 of these 3 laboratoris can be used on each day, for example to reduce cleaning costs:



Of course the above is more or less equivalent to removing one Lab from the school. But if you generate with relaxation allowed the above has two advantages:

1. if depending on other constraint it is not possible to use just 2 rooms, the software will relax this and use 3. If other constraints permit this, it will use 2.

2. more imporantly the relaxation works per days, this may produce a timetable where on most days you will use just 2 labs and only on a few days it will be necessary to use and clean all 3 labs.

Note:
-the affected labs were specified indirectly via the subjects that use them.
-add these constraints only after you see you can generate with 3 labs.

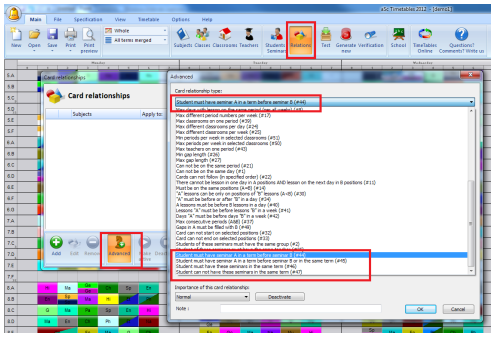
See also:
18.5 Reducing the room usage
18.6 GymRoom can only be used 4 days per week(GymRoom has to be free on 3 afternoons)

18.1 Optimizing the room usage for students

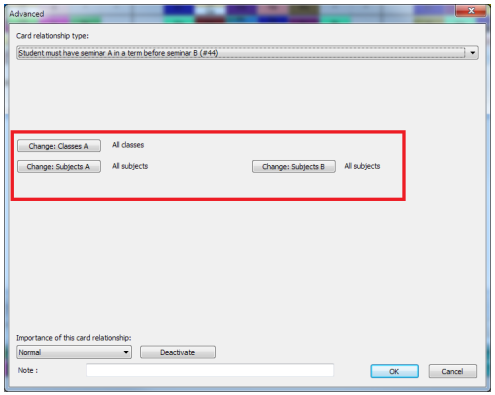
19 Constraints - Terms/Weeks

19.1 Student has to finish Biology before he can attend Biology practice

If student has to complete certain course(subject) before he can start with another you can use one of the following cardrelationships:

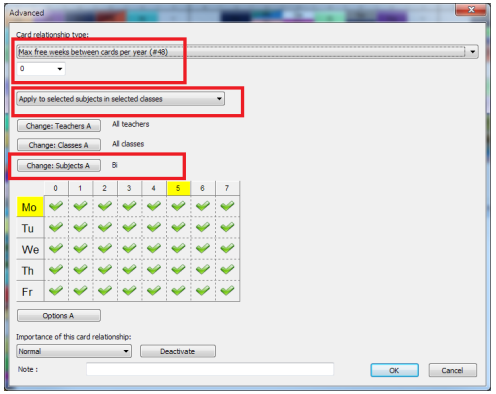


Then just specify the two courses:



19.2 Subject has to be in consecutive weeks/terms

If you have a subject that has to be in 2 consecutive terms(it cannot be in term 1 and then in term4) you can input this cardrelationship:



So you define that lesson as 2 times in "Any term" and add the above constraint.

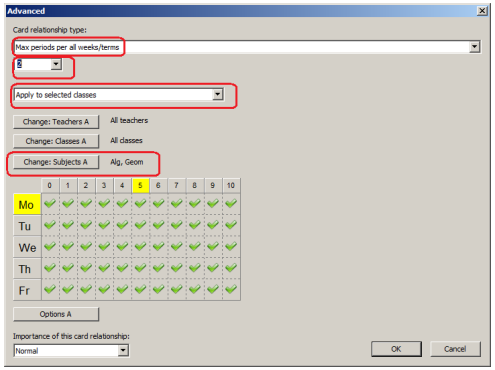
The same can be used when you have for example 20 week timetable and certain course has to be in 8 consecutive weeks.

19.3 Two subjects have to be at the same time in both weeks/terms

For example you have one doulbe lesson of Algebra on week A and one double lesson of Geometry in week B. The software may put them on different days, which is usually not a bad thing.

However if you want them to be on the same time in each week, because teachers might swap kids, you can create this

cardrelationship:



Basivally this will say there can be max 2 periods per all weeks. If the lessons are not at the same time, they will need more periods, thus the generator has to put them together.

Notes:
- if you have just one lesson per week, you need to specify max 1 period per all weeks

See also:
20.8 What does "Apply to" mean in the cardrelationships?

20 Constraints - Other

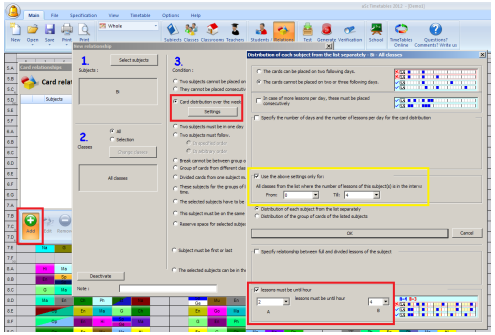
20.1 Is it possible to prevent two specific lessons from being taught simultaneously?

You can prevent two lessons from being taught simultenously by adding some resource (teacher/class/classroom) that is required by both lessons. If for example Math and Physics are taught by the same teacher, or they must be in the same classroom then this will happen automatically.

20.2 Specify how many lessons shall be before certain position

You can create special card relationship that defines how many lessons shall be before certain position.

For example this picture defines a cardrelationship for all classes that have 1,2,3 or 4 biology lessons. For these classes the generator shall always place at least 2 lessons before 4th period:



So now there are at least 2 lessons of biology on good positions.

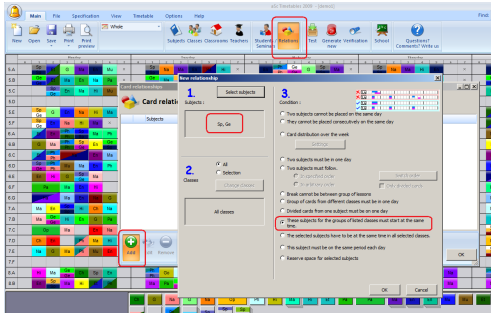
For classes that have more Biology lessons per week you can specify another card relationships.

See also:
16.1 Max one history lesson on 6th position in each class (solution 1)

20.3 Groups have to start at the same time

Note:This article is about groups withing one class. If you need two subjects from different classes, please see:
16.8 I need subject Math to be on the same position in classes 5.A and 5.B

Now: how to make sure two groups start at the same time:
Please check this picture. It defines that Spanish and German groups will always start at the same time:



Be carefull: in most situtation you don't need to setup this cardrelationship because you assign the lessons to groups and only the groups from the same division can be at the same time. So the software will not put Spanish for Group1 together with PhysicalEducation for Boys. See 5.3 Divisions

Another wrong usage of this cardrelationship is to prohibit the generator to put Group1 at the end of Monday and Group2 on the end of Tuesday. If you want the children to finish at the same time, you better use the corresponding check box in Class/Details: See 17.6 Both groups have to finish the education at the same time!

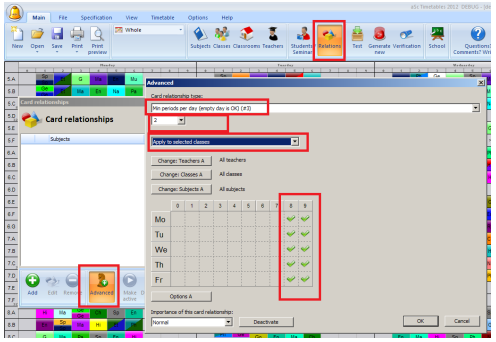
On the other hand this cardrelationship is good when Group1 have Cooking lesson that lasts 3 periods while the Group2 shall have Sewing lesson and then Handworks lesson during this time and the Group2 shall start with Sewing lesson.

See also:
16.8 I need subject Math to be on the same position in classes 5.A and 5.B

20.4 The children cannot finish after 8th period, there is no bus after period 8 on our school...

Question: the children cannot finish the school after 8th period. The have to finish either after 7th or 9th.

Answer:
Please go to menu Specification/Card relationships/Advanced and set the cardrelationship as on this picture:

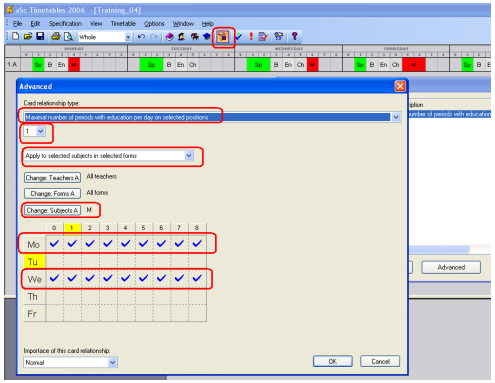


Now you have entered constraint that when there is a lesson on period 8, there must be also lesson on period 9 (because there must be at least two periods on 8-9, or 8-9 must be empty). So children can't finish on period 8, they have to stay till end of period 9.

20.5 I have double and single lessons but doubles cannot be on Monday

E.g you have e.g 3 single Math lessons and one double Math lessons. You do not want that double to be on Monday or on Wednesday.

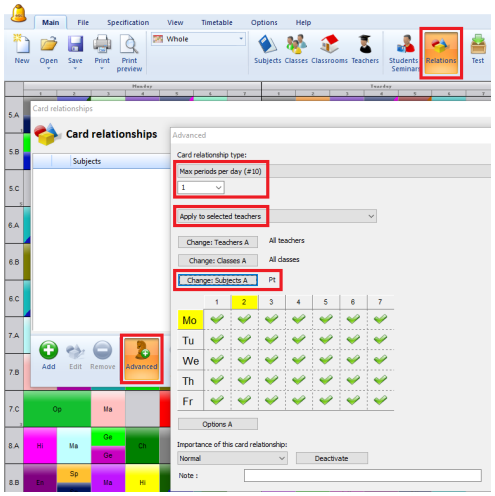
You have to create a advanced cardrelationship just like on this picture:



20.6 Maximum one planning time lesson per day

The planning time lessons can be inputted as lessons without class. They are shown in teacher's timetable and they are independent from any class.

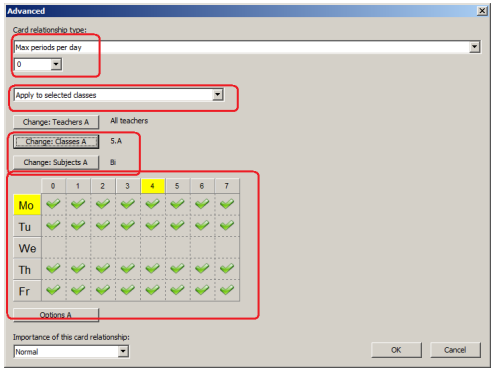
Using the advanced cardrelationship you can specify that teacher can have max 1 planning time lesson per day:



Take care to specify the correct values:
- Select "Max periods per day (#10)"
- Specify max 1 per day
- Select "Apply to selected teachers"
- Specify the subject - "Planning time"

20.7 Biology in 4A has to be only on Wednesday(or Biology cannot be on Wednesday)

If you want a particular lesson to be just on one day you can use this cardrelationship:



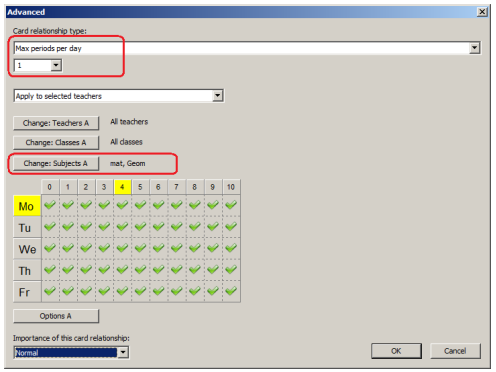
Basically it says you want 0 periods of biology in 5A on the marked days. Thus the Biology in 5A can only be on wednesday.

Notes:
- this aproach is better then locking, because there are 7 different positions Bio can end up on Friday
- you could have created a new subject called BioFriday and set the timeoff, but this aproach is cleaner, no faku subjects.
- the same cardrelationship can be used to specify Bio cannot be on Monday, just select Monday in the weekly grid.

20.8 What does "Apply to" mean in the cardrelationships?

When you are defining advanced cardrelationships you can specify the Apply to commbobox.

Lets suppose you specify condition max 1 Math or Geom per day:



Now lets see what each apply to option will mean:

Apply Globally
There can be max 1 Math or Geom lesson per day in whole school. If Teacher Einstein have Math on Monday, no other teacher can have Math or Geom on Monday.

Apply to Teachers
Each teacher can have max 1 period of Math or Geom on each day. So if Einstein has Math on Monday, he cannot have Geom or another Math on Monday. But other teachers can have, of course, just one per teacher.
If you specify some teachers in the filter,

only these teachers are considered. The other teachers are not affected at all.

Apply to Classes
Similiar to teachers, each class can have 1 Math or Geom per day.

Apply to Subjects in Selected classes
Each class can have max 1 math per day and max 1 Geom per day. So if 5A has Math, it cannot have another Math on the same day, but they can have 1 Geom.

Apply to classrooms
Each classroom will get max 1 math or geom per day.

Apply to students
Each student will get max 1 math or geom per day. So the class can have 5 math lessons per day each one for different students. This condition only works if you input students and courses. It doesn't work on regular groups.

Apply to grades
See this: 17.8 Apply conditions to whole grades

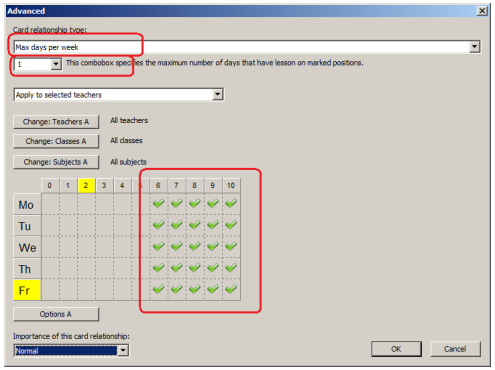
Notes:
- in theory you can do everything with "Apply globally". However you will need to create a separete cardrelationship for each teacher. Apply to teachers allows you to create just one cardrelationship that internally breaks up and works on each individual teacher.

See also:

20.9 What does the time map in advanced cardrelationships mean?

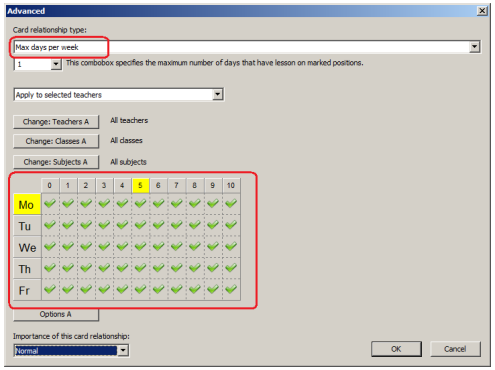
20.9 What does the time map in advanced cardrelationships mean?

Let us consider this cardrelationship:



As inputted, it says that each teacher can have max one day per week with lessons placed on 6-10. In other words it means each teacher will teach only once per week in the afternoon.
He/she can have any number of lesson on periods 1-5, this cardrelationship only considers the afternoon periods.

If you input the same condition without specifing the time map:



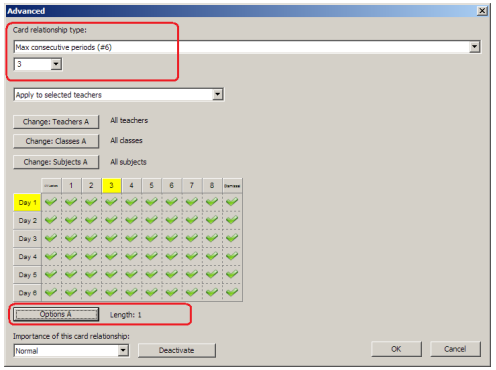
it would mean that each teacher can teach only on one day per week.

See also:
20.8 What does "Apply to" mean in the cardrelationships?

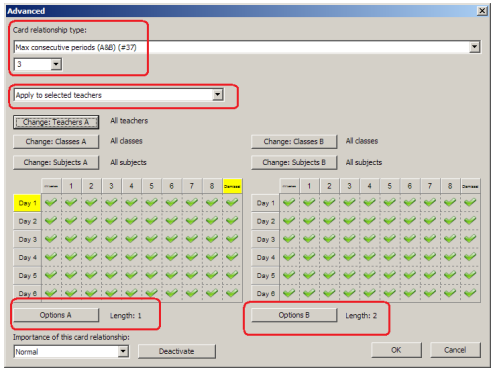
20.10 How can I define that teacher can have max 3 consecutive periods(but he can have 2 doubles)

First you would need to define that each teacher can have max 4 consecutive lessons:
15.7 Our teachers cannot teach more than 6 lessons consecutively

Then you need to say that each teacher can have max 3 consecutive single lessons:



Then you need to specify that teacher can have max 3 consecutive lessons where there are both single and doubles mixed:



Notes:
in both cardrelationships you might want to select relevant subjects, so that for example teachers preparation time and lunch are not counted into the consecutive periods count.

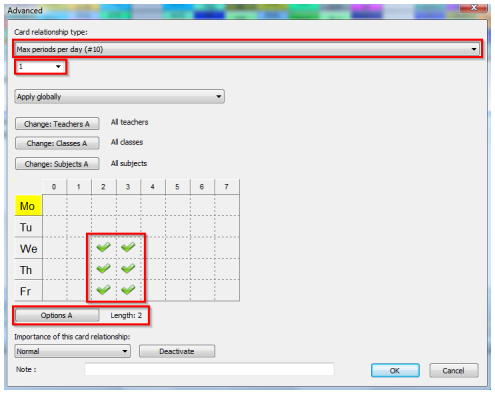
20.11 Double lesson cannot be over certain breaks

In most cases the best solution is to define breaks between lessons. By default your double lessons cannot span over these breaks.

See here:
[10.5 How can I print breaks between lessons?]
[4.2 Double lessons cannot span over "long breaks"]

However in some cases you need more precise specification. Using this cardrelationship you can precisely define which subjects, what days, lessons etc:

Adding this constraint will prevent any double lesson from crossing the break between 2nd and 3rd period, but only on Wednesday-Friday:

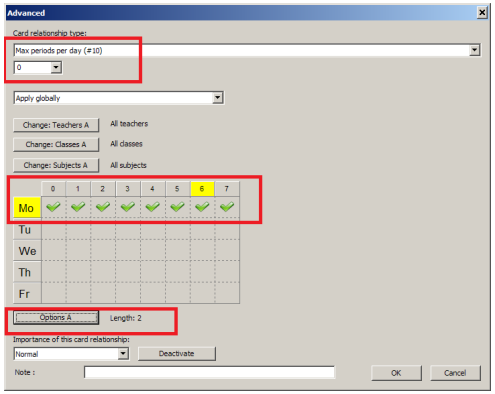


Note the "opions button" where you can define that this cardrelationship shall only consider double lessons.

20.12 Double lesson cannot be on Monday/in the afternoon

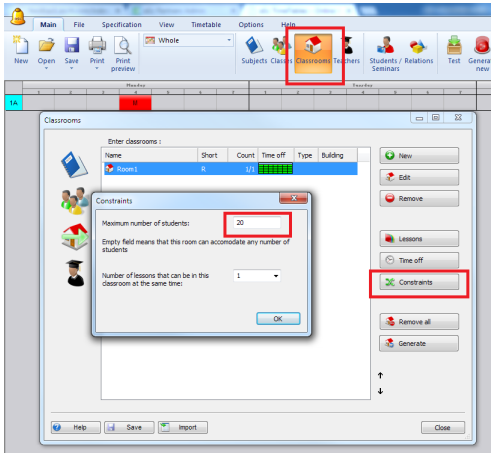
You can simply say there can be 0 periods on day and selecte monday in the timeoff map.

Important is to use the "Options" button, where you can select that this rule shall only apply to lessons of lenght 2:

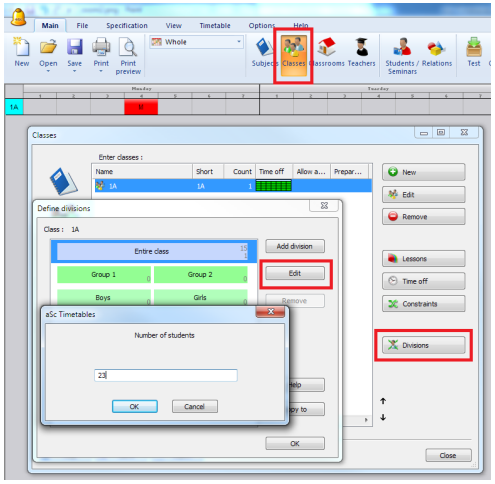


20.13 Checking room capacity

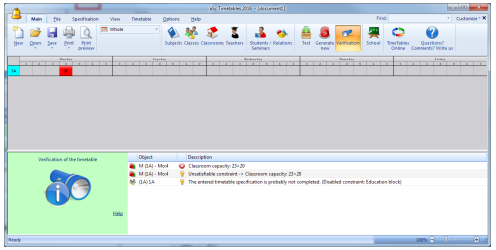
For each room you can define it's capacity - maximum number of students it can hold:



Then for each class(entire class) or for each group of students you can specify how many students are in it:



The software then check this capacity during the generation and it also can warn you if you manually put bigger class into smaller room:



Notes
- if you are using seminars(courses) you do not need to specify how many kids are in class/group the software knows this because it knows about individual kids

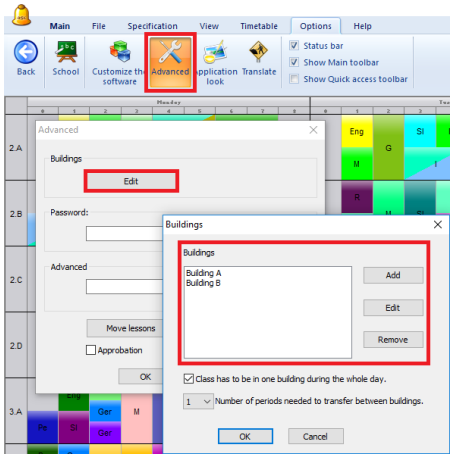
21 Buildings

21.1 How to input buildings

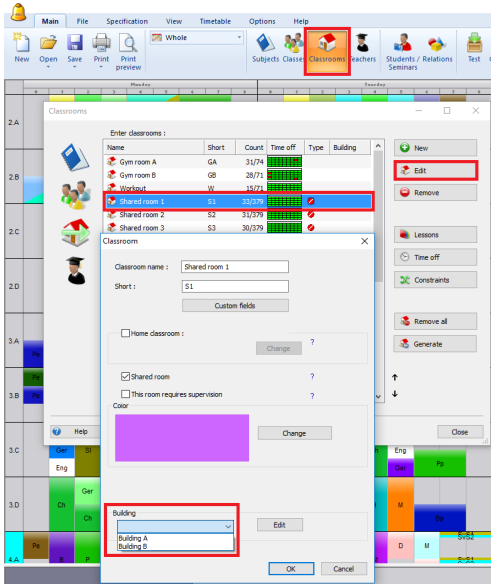
Note: You do not need to input buildings in case all your education is only in one bulding, or you do not care about transfers between buildings during creation of timetable.

Inputing Buildings is quite easy:

Step 1. Specify that you have more buildings by inputting them in menu Options/Advanced:



Step 2. For each room you can specify in which building it resides:



You will also have to input constraints about buildings.

See also:
21.2 Transfers between buildings

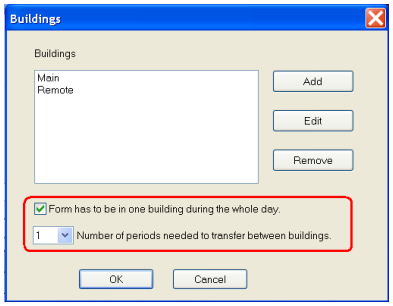
21.3 Show the timetable colored by buildings

21.2 Transfers between buildings

Note: You have to input buildings first. See 21.1 How to input buildings

There are 3 constraint about transfers between buildings:

First two are located in Buildings dialog:

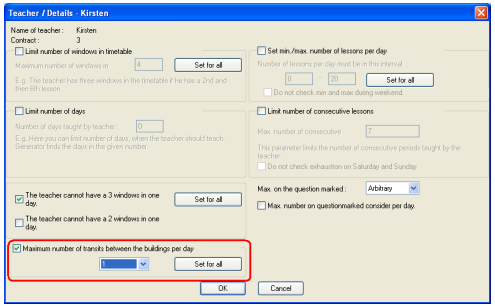


Here you can specify:

1) That class students can't transfer between buildings during the day (this is typical).

2) How long does it take to transfer between buildings. If you input 1 here, it means that teacher needs 1 free period for transferring between buildings. If you input 0, it means that buildings are very close and teacher can transfer during the break between lessons.

Third constraint is located in teacher's details:



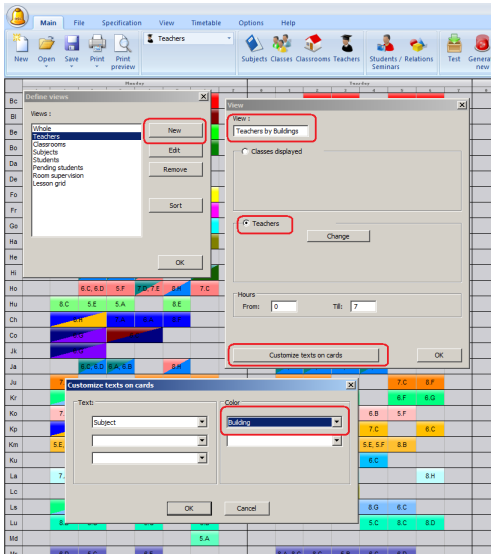
Here you can limit max number of transfers per day for teacher.

You can specify the constraints requirements in more details here:
21.4 Max different buildings per day

21.3 Show the timetable colored by buildings

You can modify any view to show different colors.

For example this picture will create a new view teacher's view with teachers colored by building. So you can quickly see when teachers building changes etc:

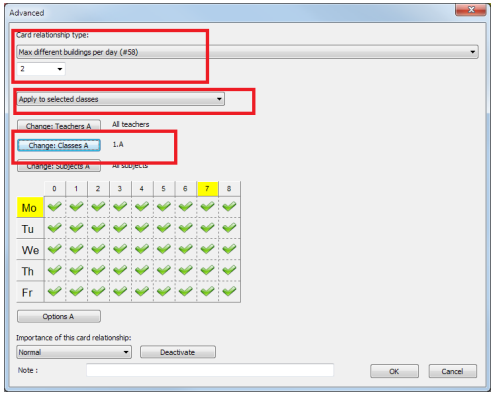


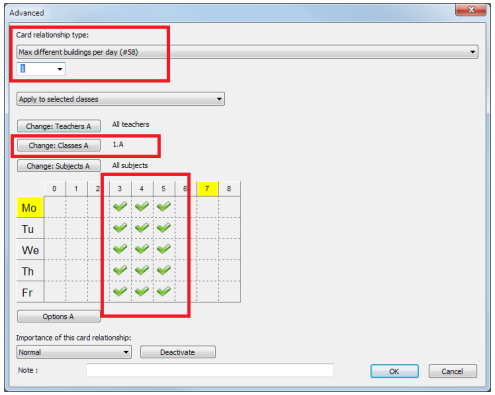
See also:
13.15 Quick modification of the onscreen view (available in version 2009)

21.4 Max different buildings per day

For any class/teacher/subject or student you can specify a maximum number of different buildings it or he/she can be in on any given day.

Use the cardrelationships #58:





The above picture says that class 1.A can be in no more than 2 different buildings on any day.

But please keep in mind that this doens't tell how many transits the kids can have. They can have 2 buildings, but 4 transits per day. For teacher there is a special setting for the maximum number of transits. For students, they by default cannot transfer during day, so you need to allow this.
See:
21.2 Transfers between buildings

Also you can specify a time map for this cardrelationships. So for example this cardrelationship says that students can only be in one building on periods 3,4,5. In other words they cannot transit between 3/4 and 4/5:

22 Seminars/Courses

22.1 What are seminar/course lessons for?

Seminars are special lessons, where you can exactly specify which students attend this lesson. Program will then check collisions between lessons according to assignment of students to seminars. This is different against ordinary lessons, where students are defined using groups/divisions.

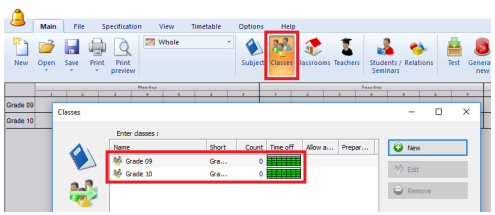
In most cases when inputting lessons it is enough to use groups, like Boys/Girls or 1.group/2.group. This way you will avoid needing to input all students in the program and assigning them to lessons.

However, in some more complicated cases, you will need to input lessons as seminars. This is especially true for optional subjects, where students choose, which subjects they will attend from list of available subjects. This kind of situation can be handled by groups if students pick just one subject from the list, but in case they can pick two or more, situation can be so complicated that you will need to use seminars.

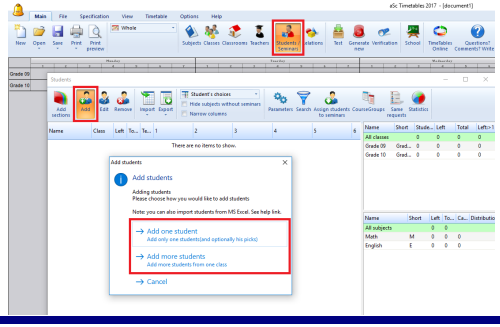
See also:
22.5 How to input seminar lessons
22.2 How can I add students
22.3 How can I input students picks
22.4 How to create courses for subjects
22.6 Working with Seminar lessons in your timetable.
22.11 How to generate timetable with students
22.12 The student s timetable view
22.13 Pending students view

22.2 How can I add students

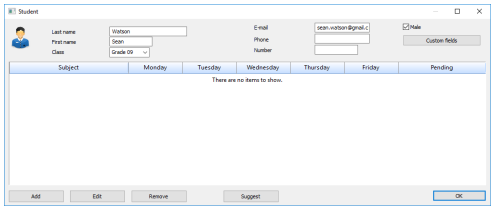
Before adding students, you have to have classes (grades) inputted:



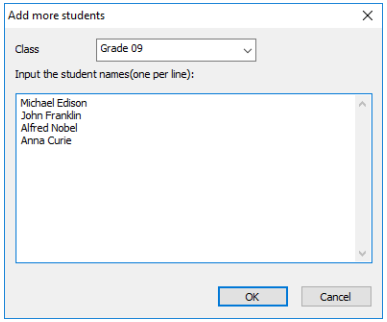
Then you can go to section **Students/Seminars** and add your students:



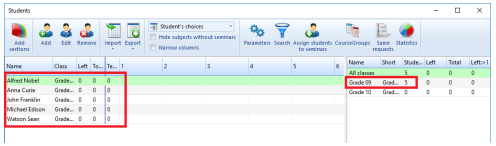
You have two options. You can **Add one student** and this option will allow you to input also the subjects he has picked:



However, as we will see later, inputting the students picks can be done also for more students at once, so it might be better in the first step input just the name and grade. This can also be done in the second option **Add more students** :



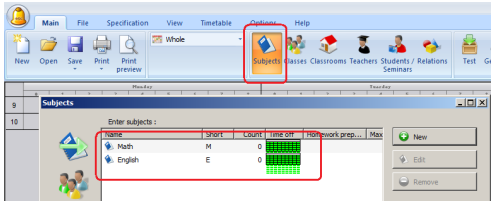
As a result you will see your new students in the list:



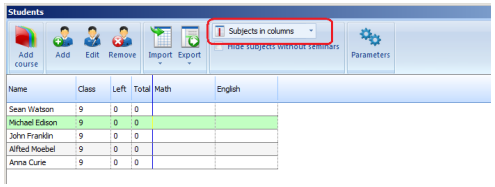
See also:
22.3 How can I input students picks
22.4 How to create courses for subjects
22.11 How to generate timetable with students
22.12 The student s timetable view
22.13 Pending students view
31.7 Import students' course(seminar) selections from clipboard(Excel) - Method 2

22.3 How can I input students picks

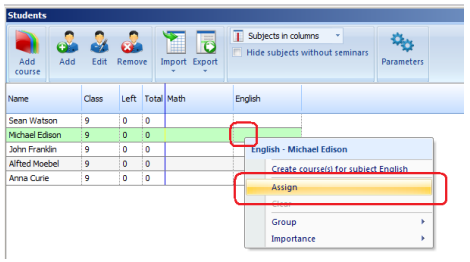
Once you have students you can add the subjects(courses) they have picked. If you haven t done this previously you might need to close the students and input the subjects:



Once you have subjects you have two options how to input picks. First option was to directly edit the dialog we used for creating new student. Double click on any row and you will get dialog where you can add/remove subjects student has signed for.
However faster way may be to do this directly in the students dialog: switch to view subjects in columns :



And simply right click on the cell that the student has picked. For example this will add English into Edison s courses:

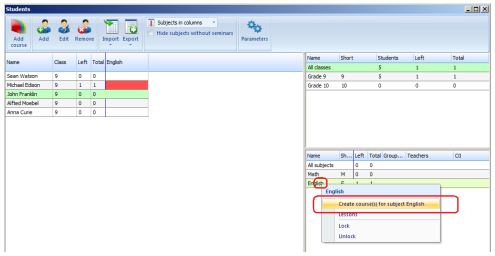


You can use CTRL and select more rows(students) and then right click will add the subjects to more students.
You can see that the subjects students has selected became red. Why such a dramatic color? Because so far you have said the student has selected English, but you don t really have any lesson(sections) defined for this subject.

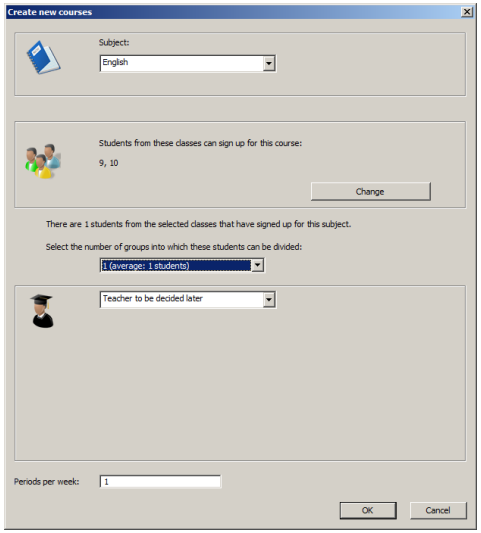
See also:
22.4 How to create courses for subjects

22.4 How to create courses for subjects

In the right part of the students dialog, you will see a list of subjects. If some subject is red, it means there are students signed for it, but you don t have courses yet. You can press right mouse button on this subject and select create courses:



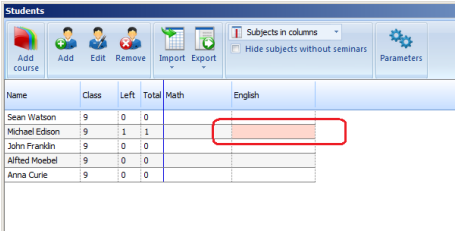
A new dialog will appear that will show you how many students have signed for this subject so that you can create an appropriate number of sections for this subject:



In this dialog you can specify the number of sections and if you know it already, you can specify a teacher for each section. The software will also tell you the average number for students per section.
If you don t know the teachers for these sections, you can leave it as TBA.
Notice also the subject field. Here you can specify the number of lessons per week, if you specify for example 4, each section will be 4 times per week. If you have a timetable where this section will be on every day(in the given term), then instead of 5, you have to input E for everyday. If you input 5 this lesson will be 5 times per week, but could be on different period each day. E means 5 times at the same period each day. More on this can be found in the section for defining lesson(course)

Notes:

You can change the lessons(courses) setup anytime later in the lessons dialog.
You can also specify classes(grades) from which the students can apply for this subject. This is especially important if reuse the same subject in different grades.
Or if you have classes defined as parts of the grade, like 11-1/11-2/11-3 and for subject you might want that only 11-1and 11-2 students may be scheduled into this course. 11-3 students will have different set of courses for this subject.
After this is done the red color for this subject changes to normal white. However there is still some light red in the students picks.

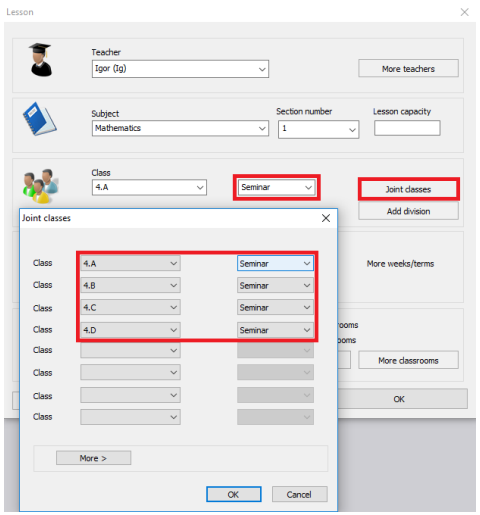


Why again red although light this time? Because although the you have sections, it s not yet clear which student will go into which section. This is a task for generation.

See also:
[22.11 How to generate timetable with students]

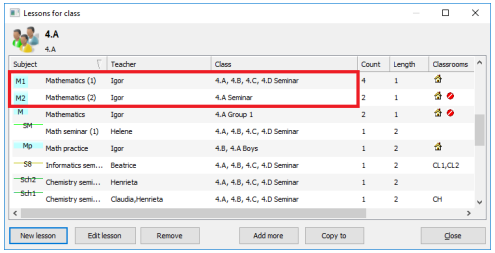
22.5 How to input seminar lessons

Inputting of seminar lessons is very easy. You input them exactly the same way as ordinary lessons, only in field "Group" you have to choose "Seminar". Seminar lessons joined from multiple classes are inputted the same way as ordinary joined classes (with "Joint classes" button), only you have to choose "Seminar" as group for all classes:



Seminar groups
Special situation is when you have two seminar lessons from same subject in one class. Program understands this as that these two lessons are equal. If student attends this subject, it does not matter to which from these two lessons will he belong (but he can belong to only one). This is used usually when many students want to attend one subject, so they need to be divided into groups.

For example the following picture defines that there are two groups of mathematics seminar. One can be attended by students from 4A another from students from 4A/4B/4C/4D: Later you will have a possibility for each student to pic one, or the software can assign them for you:

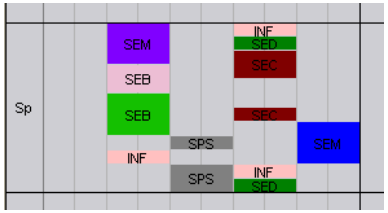


After you have inputted seminar lessons, you have to assign students to seminars. See:

22.6 Working with Seminar lessons in your timetable.

Working with the seminar cards in your timetables is very similar to the regular cards but there are few differences:

The first difference is in the way of displaying the cards. Seminar cards are shown as a horizontal stripes within the row of class.



In most of the cases lesson is displyed as one horizontal stripe but in some cases it is shown as more stripes, for example as lesson SPS on the picture is shown as two stripes. These stripes are not accidental, they are distributed in such way so it is clear from the first look which seminar lessons can go together. If the stripes of 2 seminars "fit in" it means that lessons may go together on the same position and if they do not fit in then it means that there is at least one student visiting both seminars and so these seminars can not be at the same time. For example, as you may see on the picture that it is possible to move lesson SPS to previous lesson but not to next one, because lessons INF and SED stand in the way.

Tip: It is very usefull to use CTRL-click while working with the seminars. It moves all group together.

Another difference when working with seminar lessons is that when you try to place the seminar lesson manually to some position where there is already some other seminar, it can activate [22.8 Function "Rearranging students in seminar groups]

See also:

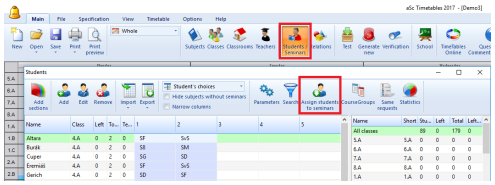
22.7 How can I assign students to groups manually

The PRO version assigns students to groups during the generation. It can even change the group for student if more gorups are availalbe (unless you lock the students in that group of course)

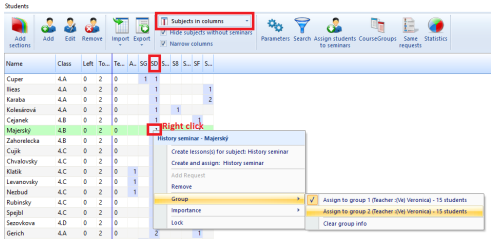
The regular version only assigns the students before the generation then it cannot change the groups.

In both cases, you might want just to assign the students into groups, without generation, so that you can see the cards, perhaps play around with them to see how they stack together.

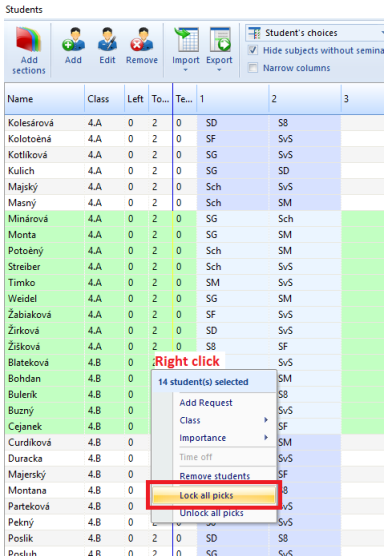
In this case, just press this button:



Alternativelly:
you can manually assign any student to allowed group.
Select one or more students, then right click on the column with subject you want to assign the students to and then select your group:

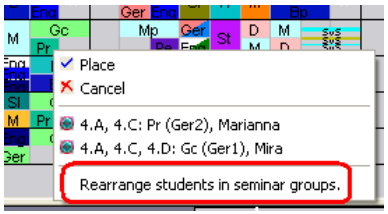


Just remember:
1. this distribution might not be optimal. For example if you have two subjects that all students must pick. The software might divide first subject as boys/girls and second as Older/Younger students. Then you will not be able to combine these two subjects. This is very simple issue, things might get more tricky if you account teachers time-offs etc. The PRO version can change the students during the generation so it may find out its good to divide the students into same groups for both subjects.
2. if you are happy with the groups, you can lock them:



22.8 Function "Rearranging students in seminar groups

This function is activated when you try to place some seminar card to position where already some seminar cards are placed and the only reason why it is not possible to place card to this position is that some students belonging to this seminar have education at this time. Function will be displayed at the bottom of menu showing collisions when placing the card:



If you do not have seminar groups(the same subject taught by more teachers) then the software cannot reaarange anything and this option is grayed.

If you activate this function then program will let you place card to this position and meanwhile will rearrange students in seminar groups to avoid collisions. Program rearranges students just between so called seminar groups - seminars where there is more lessons of the same seminar subject. Program will never "sign out" student from some subject neither sign him as a new student. Program also considers locked choices of seminar groups for student (scratched circles in Seminars dialogue).

At the same time program tries to keep same number of students in partuicular seminar groups of same subject. This is a very important criteria because number of students in group influences education quality and you don't want to have big differences within one class.
It is possible to set limits what maximum difference from optimal number of students in group is allowed. This setting is available in Seminar dialog in check box "Advanced". There are two limits - when program warns you only about big differences (standard 10%) and limit when program will not even offer you such a bad solution (standard 30%).

22.9 I cannot see seminar lessons in class's timetable

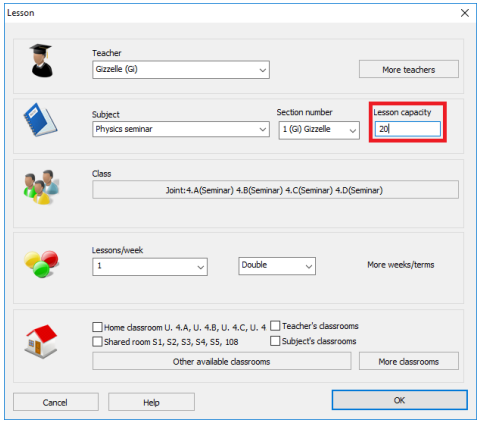
This situation happens when there is **no student from this class assigned for given seminar**. In such case a card "without class" is created and can be placed only into teacher's timetable.

The solution of this situation is either to sign some student from this class to this seminar or erase this lesson from teacher's contract.

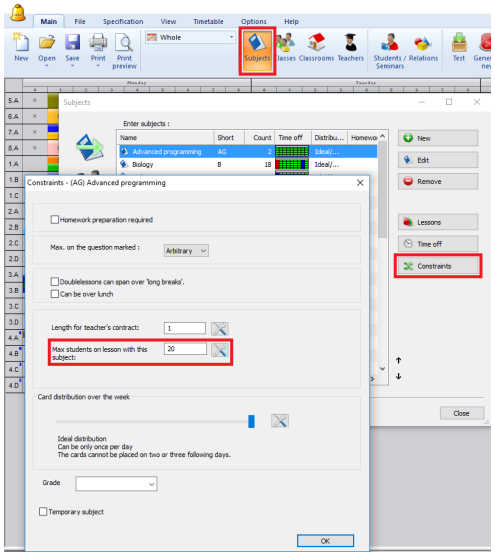
Note: Similar situation can happen also for seminars where there are joint students from two classes. In such case it may happen that there are students only from one class signed for this seminar and so the card is shown only on this class's timetable. If you wish this card to be shown also in other class's timetable then you need to sign some students from this class to that seminar.

22.10 Max students for certain seminar lesson

It is possible to input max number of students that can be assigned to given seminar (section). You can input it in "Lesson" dialog in "Lesson capacity" field:



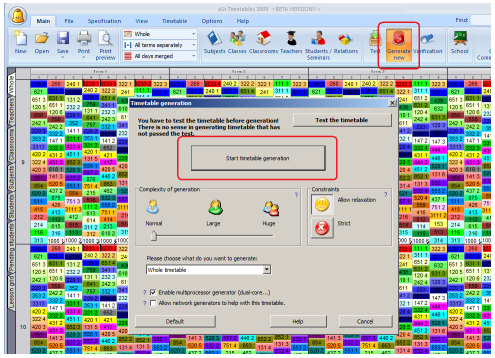
It is also possible to input this for all lessons of some subject in subject constraints:



Note: Value for subject is used only for lessons where "Lesson capacity" field is left blank. If you input "Lesson capacity" in lesson, then value from subject is ignored for that lesson.

22.11 How to generate timetable with students

Once you have students and their picks and for each subject you have sections defined, you can try the generation. Just press the red button Generate the timetable:



You have 3 options for the generation:

1.Generate whole timetable this will generate both the positions of course, means on which period in which term each section will be placed. And also it will assign the students into the courses. The advantage is that this is not two phase solution, when adding a students into sections, the software might actually move the sections to different position to satisfy more students choices.

2.Generate whole timetable without students, this will place just the sections into periods and weeks, and for the time, it will not assign the students. So the result is a master timetable, without students assigned yet. However during the generation it uses whatever info it has. If there are students who picked both courses A and B, it will not place these at the same period and many more. So the more students choices you have in, the better the master timetable will come up.

3.Generate just the students, this generation will only assign students to the sections. It will not move the sections, so this option is more or less a second step of the previous master timetable generation. This option is good when you for example have already distributed a master timetable to teachers and you cannot change it.

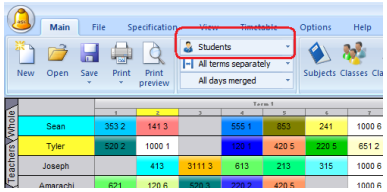
Note you can use whatever option in any phase of the generation. Even if you don t have teachers assigned to some courses, or not all students in, you can generate to see whats going on in your timetable.
We recommend using the 1 and if you can t use the 1st option. You will get the best master timetable and most students choices when generating both together. It might take longer, but generally the percentage is higher then when you generate first master, then students. Of course, you will may need to use the 3rd option in later stages, when the students choices changed dramatically and you don t want to change the master timetable.

See also:
22.12 The student s timetable view

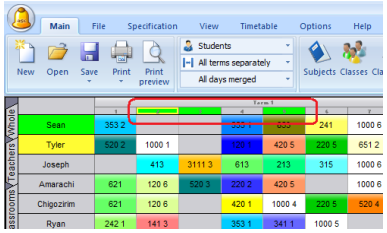
22.12 The student s timetable view

You can select student, at the bottom you will see his pending cards. You can just drag his subjects from bottom or move his current assignments in his row. Note that you can t actually change the position of the lesson in this view; you only can change the sections where this student belongs:

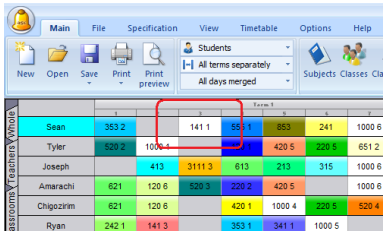
For example you can click on Sean s lesson 141, he is now in section 3.



Once you pick the software shows you green positions with where this lesson can be placed. In this view it means there are other sections of 141.



We place it to 3rd period. You see on the card he was just transferred into section1. The color has also changed because the color was by teachers. (You can change this color coding)

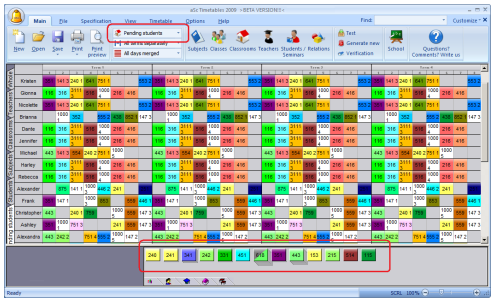


So this view is usufull for some final tuning. If you by accident remove his from the groups, you will find the cards in the bottom are that shows cards not placed in the timetable. In this view this actually means the students picks that are currently unrealized.

See also:
22.13 Pending students view

22.13 Pending students view

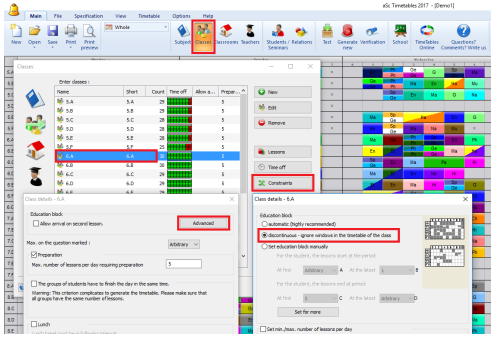
This view is basically the same as students view, the only difference is that here you can see only the students that had some picks left out. These students are show in rows, their picks that were not realized, are show bellow:



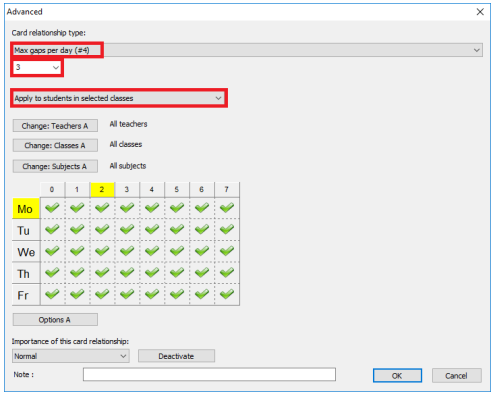
This view is good for final touchups. You can see the unrealized choices, try to put them in or check the gaps. Sometimes during this work you may find a solution that will perhaps break some constraints the algorithm originally could not or simply find out that don t have enough sections.

22.14 Student can have max 3 gaps per day

1. First you need to allow discontinout layout so that the software can create the gaps. By default the software will not create any gap.



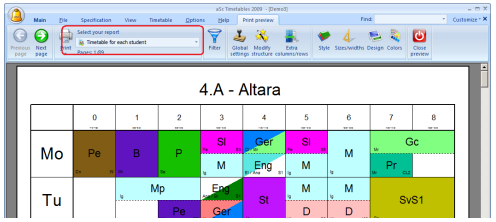
2. Then you just need to add cardrelationship "Max gaps per day":



Note:
this function works best in the PRO version, because if the software can move the student between parallel sections of the same subject, its easier to fulfill this condition. In standard version the software moves only the cards around with students fixed to their sections.

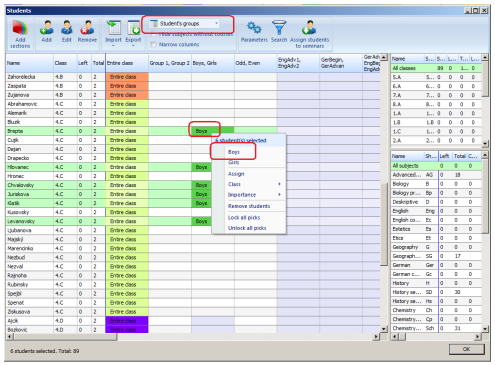
22.15 Printing individual student's timetables

You can print the timetable for each student, go to print preview and select report "TimeTable for each Student":



Now the software will print only those seminars(course) that this students has picked.

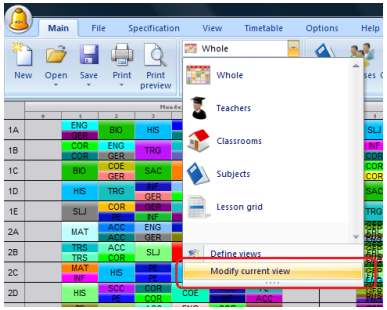
If you have also lessons inputted for groups, then the software will print all groups as it doesn't know which into which group this students belongs. You can specify it here:

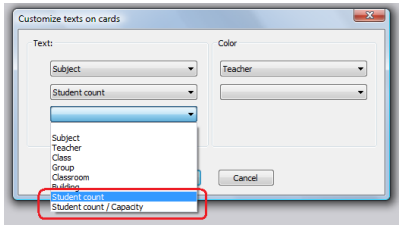


Note: this is needed only if you are creating timetable based on groups. If you have inputted course&students picks, you obviously do not need to do the above (unless you mixed in also some group based lessons)

22.16 How can I display capacities and students counts on the cards?

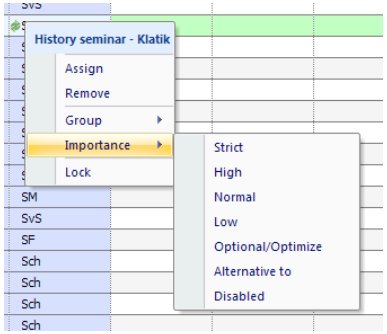
The software now shows the count of students on cards. Also in lesson grid. It is possible to display also room capacity. So it is possible to see 30/31 or just 30.





22.17 Student choices - Importance

You can select one or more students, the right click on the course selection and choose importance:



Possible values:

Strict - the software has to place this. This selection cannot be relaxad.

High - it is important to place this, but in rare cases this can go unrealized. Note: most of the time if you see high importance picks unplaced it is usually because of some problem in the constraints.

Normal - shall be placed but can be relaxed more often than High.
Note: the generator may relax one high importance pick and assign 100 normal onces, instead of relaxing 100 normals just to place one high. Contrary, the generator will relax all the high and normal picks if it is needed to place one strict.

Low - same as above, just the software is more likely to relax low importance picks.

Optimize - the software doesn't care about these picks at all during the generation. Only after the timetable is completed, the generator tries to place these. No card or student pick is relaxed bacause of these. But since the software doesn't think about these picks in advance it may choose build a timetable in a way that will be very unfriendly for putting these picks at the very end.

Alternative - you need to go to student's dialog to specify this one. Basically this course selection is alternative to some other selection. In case the main selection is not possible to realize, the student gets this alternative one.

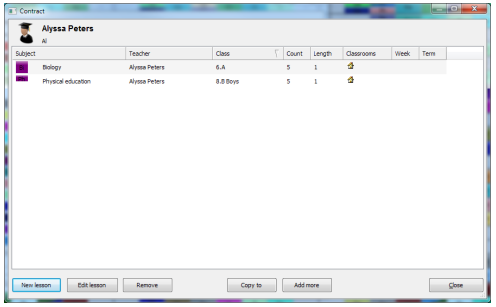
Disabled - the software doens't place these at all.

22.18 Student's can select/request courses at our school

Most school do not need to input students in order to create schedule.

It is enough to know that lesson is for "boys" from class 5A. The software will know that it can out groups Boys and Girls at the same period - because they do not share students.

In this simple example, the teacher is teaching all kids from 6A Biology and boys from 8B physical education. Probably some other teacher will have PE with girls from 8B:



However if your kids can select their own subjects/courses, it is not that clear if two subjects can be at the same time - it depends on whether they have the same student or not.

For this purpose the sofware allows you to:

1. input individual students
2. and for each studentyou can input his requests

3. then you can input "lessons/sections"

So for example:

1. Student John from grade 9
2. John requests two courses Biology, Chemistry.
3. school defines Biology section with teacher Fleming and another Biology section with theacher Pasteur.

During the generation John is assigned to either Fleming or Pasteur. Or to neither if for any reason it is not possible to place his request.

The system can handle both aproaches within the same timetable, so no need to decide in advance. You will take care of this later - when defining lessons.

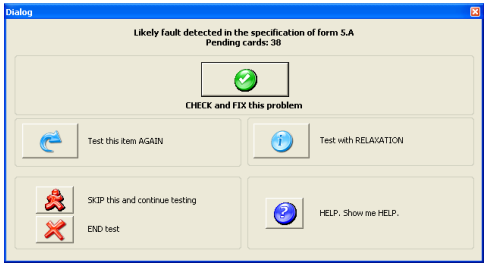
For detailed info on how this work, please check:
22.1 What are seminar/course lessons for?

23 Testing the timetable

23.1 Test says there is some problem. What next?

See also this page: 23.2 Why to test the timetable?

When test fails, it will report the item which was not possible to generate and it will offer you some options that will help you find and resolve the problem:



CHECK and FIX this problem - program will show you the part of the timetable that it has generated and give you the card that it can't generate. You can check why the computer was unable to put this card in. The complete guide is here: 23.3 Checking and Fixing example

Test this item AGAIN - maybe the timetable for this item is just too complicated to generate and this is the reason why the test failed. When you run the test on the same item again, it may succeed (this is quite rare case).

Test with RELAXATION - this is a very similar option to the first one, only the program will try to generate this item with constraint relaxation turned on and if it succeeds, it will show you which constraints have been relaxed. This may be helpful in finding the constraint that is too restrictive. Your task at this moment is the same as with the first option - complete the timetable of this item (and possibly change constraints or data), so that the program will accept your solution.

SKIP this item and continue testing - skip this item and continue testing remaining items. You can return to this item later by invoking the test again (menu - Timetable - Test).

END test - quit testing of the timetable.

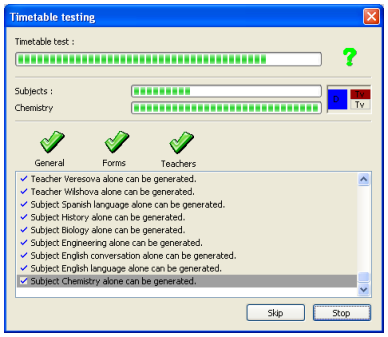
HELP - show this help page.

23.2 Why to test the timetable?

Before you can generate timetable, your timetable needs to pass the test (menu Timetable/Test).

This test tries to generate small parts of timetable to detect basic mistakes in inputting data or constraints. Finding these mistakes is important, because if it is not possible to generate timetable for just one class or one teacher then it will not be possible to generate whole timetable.

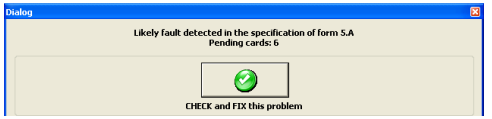
So test can save you lot of time that you will othervise waste on generating "impossible" timetable:



See also:
23.1 Test says there is some problem. What next?

23.3 Checking and Fixing example

1. Tests says there is a problem with 5A. We select Fix:

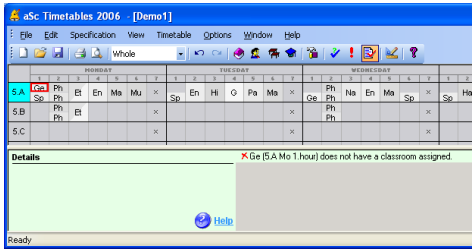


2. Test shows us what it was able to achieve and also gives us the card it was not able to put into the timetable. In this case it is music lesson:

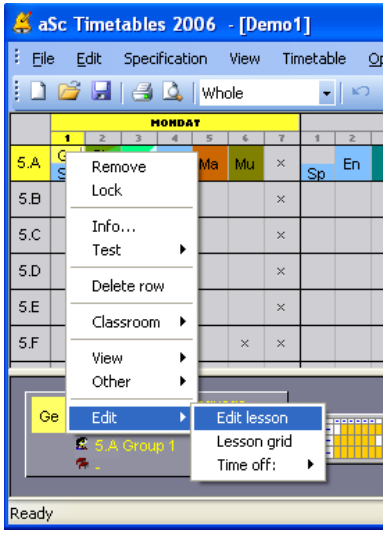
3. We cannot put the Music lesson on 7th period as we have forbidden 5.A to have 7th lessons.

4. So we decide to put it on Monday 6th lesson and move the Ge lesson to the 1st lesson

5. Once we moved the Ge lesson to 1st lesson, the software displays verification that says it was not a good place because there is not a free classroom for the GE lesson:



6. We can click right mouse button on that lesson to quickly check the available classrooms:



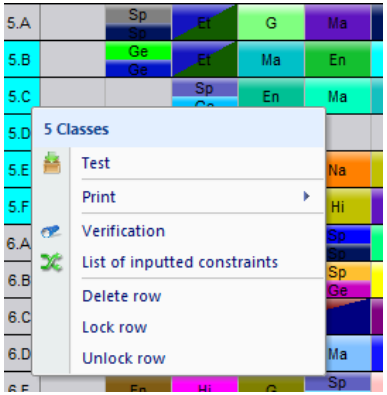
7. We will find that this lesson is required to be in the Home classroom only. The problem is that this is a divided lesson and the only lessons that can run at the same time also have to be in the home classroom.

You obviously have to allow some other classrooms for these divided lessons. If you look at the first picture this was also a reason why the software hasn't put the divided lessons together from the start.

This example showed us how the test can help to find out a problem.

23.4 Testing multiple classes/teachers at once

You can test multiple classes/teachers/classrooms/subjects/students this way: First go to corresponding view (Whole/Teachers/Classrooms/Subjects/Students). Then select rows that you wish to test. You can do it by clicking on row headers. Use Ctrl+click to add row to selection and Shift+click to add sequence of rows at once. Then right-click on some selected row header and choose Test.

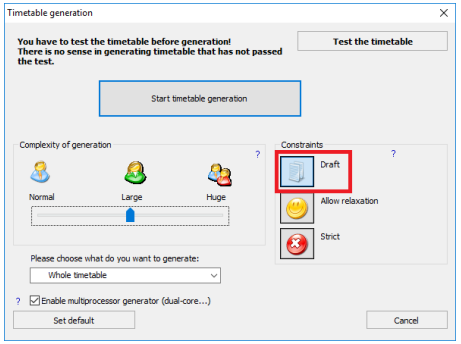


Note: It is also possible to test multiple items by right-click on any card, then choose Test - More.

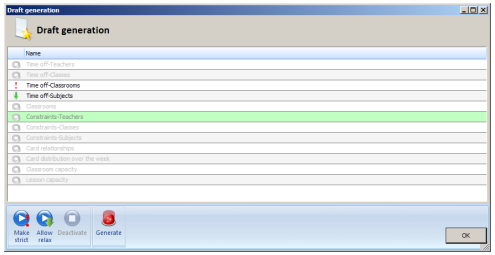
23.5 Generate draft timetable

At early stages of timetable generation it is advised to try to generate draft. Draft is timetable without any constraints. This is very usefull, because it makes no sense to generate complete timetable with all the inputted constraints if there is some basic problem in the input.

You can either remove the constraints, or use a feature called draft:

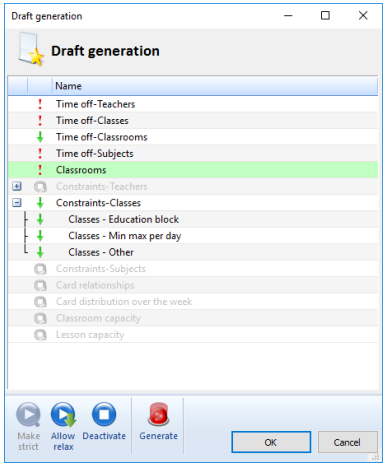


After selecing "Draft" generation, you can specify which constraints you want to turn off. Simply select them and and press button "Deactivate" or "Activate":



Then press "Generate" and a timetable will be generated with the constraints you allowed.

From version 2014 it is possible to specify for each constraint if it shall be strict or can be relaxed. This can be useful when you want to generate a full timetable with relaxation, but you do not want some special constraints to be relaxed:



23.6 How can I test just some lessons, for example all double lessons or all PE lessons

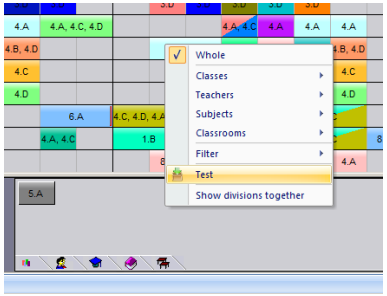
Sometimes it may be usefull to try to test if you can put some group of lessons into the timetable.

For example put in all double lessons or all divided math lesson.

This is possible:
1. click right mouse button in the bottom part where the unplaced cards are shown

and select Filter.
More on filter can be found here:
[13.16 How can I filter cards displayed in the list on uplaced cards]

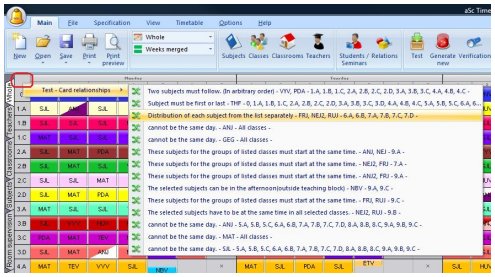
2. Click right mouse button again and select Test. The software will now try to place all the cards into your timetable that match the Filter options selected in the first step.



See also:
[23.4 Testing multiple classes/teachers at once]

23.7 Testing card relationships

You can test also individual card relationships:



You can do this by right clicking in the upper left corner of the timetable, then choosing "Test - Card relationships" and choose one of the relationships. This will generate all cards from that relationship, which can help you understand whether the card relationship does what you want or if there is some problem with it.

23.8 Analyze the timetable by generation

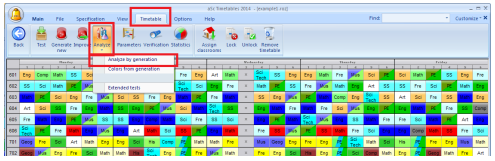
Analyze generates the timetable for exactly 1 minute and then shows you which cards were causing the most problems.

On some timetables this may help to quickly identify some errors in the input or some bottlenecks that simply cannot be scheduled and had to be fixed before generating the whole timetable. However on some timetables this function will not help much because the cards that are causing most problems are simply, well, the hardest cards.

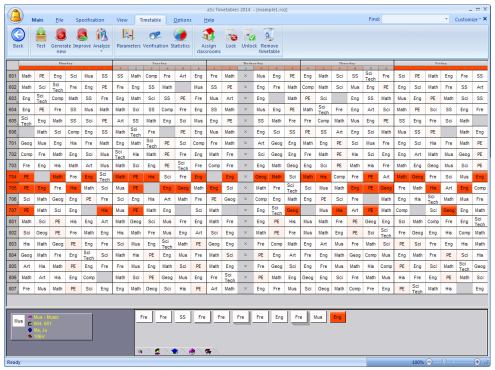
Lets now have a look at some examples to see where this feature can help and how to read the data.

Example 1.
This timetable passed the test, so it is possible to generate each single teacher/class/subject or room. But it is still not possible to generate the whole timetable. One card constantly gets left out. One may say that this is because it is Physical education and it simply hard to place it. So the first attempt was to try to generate on harder complexity. But this hasn't helped - the timetable still cannot be generated.

So we run "Analyze by Generation" to see if it can help:

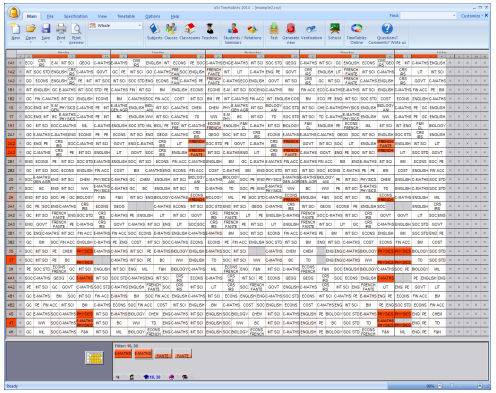


After a minute the software shows the same timetable in different colors:

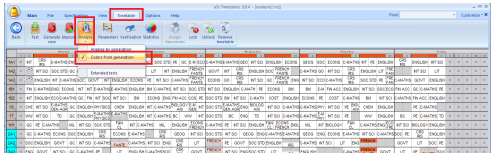


Red cards are hard, white cards have caused no problem. We can see that there is a group of red cards in classes 704, 705 and 707. Also one of the cards at the bottom is in red. Clearly there is something wrong not with just that PE card, but also with all the cards of teacher "Chloe". It is not possible to place the last Chloe's card because she either already teaches on that position, or kids are not available because they are having PE. There are 29 positions per week but 3 positions are blocked by PE. You cannot put in Chloe's lessons on these position, because all the kids have PE. So the result is that there are 26 positions for Chloe's lessons. But Chloe has 27 lessons in these classes. There is no way around this, you either need to split PE or move at least one of the Chloe's lessons to other class. So using Analyze we have found that there is no problem with PE lesson, the problem is in Chloe's contract combined with PE lesson.

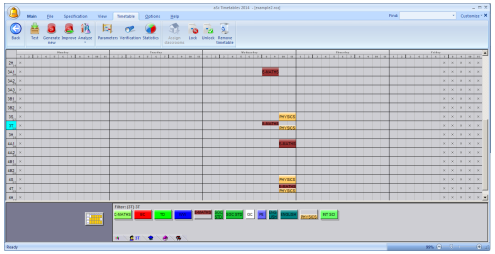
Example 2
Running timetable/Analyze by generations, shows these cards in red:



So we go back to the original colors:



and then check these lessons:

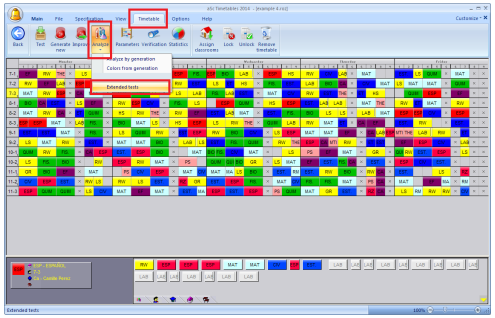


It is immediately clear that these cards cannot be placed into the timetable because one group in each grade is joined and the other groups that have to be in the same time are taught by the same teacher. Again, this is problem in the input and there is no way to do the timetable until it is fixed.

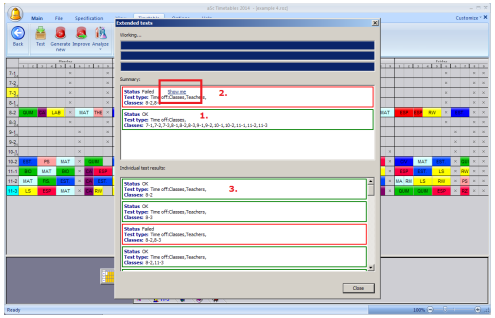
23.9 Analyze the timetable by Extended tests

If it is possible to test your timetable but the full generation still fails, this second new feature might help you pinpoint smaller part of your timetable that is still not possible to generate.

You can run it via menu TimeTable/Verification/Extended tests:



A dialog appears that shows the progress of the extended tests. For example on this picture, the software first tried to generate a timetable without any constraints except for time-offs for classes. This generation was successful. See Nr.1:



Then the software added time-off of teachers. This was not successful. So the software tried to remove classes one by one, to find the smaller part of the timetable that still cannot be generated considering only time-offs for teachers and classes.

After a few generations it found out that it is not possible to generate just two classes. See Nr.2

So now you know where the problem lies. You can even use button "Show me". This will start "Draft" generation only on the problematic subset and with only the constraints involved. After generation it will show you the last card that was not possible to place so that you can try to place it and find what could be the problem.

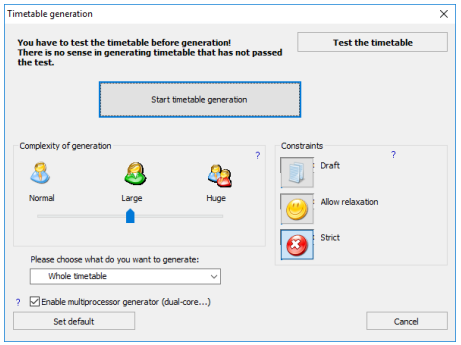
Notes:

- this extended test can take a very long time on some timetables. So run it only when you have time. When you come back, the software may find something useful. Or may not.
- this is test, so it is still possible that if you generate a reported part several times or on higher complexity, you may find out that it actually is possible to generate it. In this case you can have a look at list of individual tests what else the test has found. See Nr.3 on the above picture
- the time-offs of classes are always included, because in general these are non negotiable so it doesn't help much when the software says it is possible to generate your timetable with Friday 7th period, when your school is closed already. But this also means that if you have some time-offs that are theoretically possibly, try to remove them.

24 Timetable Generation

24.1 Starting the generation

Once you use menu 'TimeTable/Generate new' the following dialog will appear:



If you have not yet tested the timetable, or you have made bigger changes in the entered data, it is a good idea to do it before the generation. Just click the button 'Test the timetable'.

Otherwise you can simply start the generation.

You can also change the generation parameters. They are described in these articles:

24.3 Constraints relaxation
and
24.2 What does the complexity of generation mean?

24.2 What does the complexity of generation mean?

The complexity of the generation means how much time the computer shall spend checking your timetable.

Normal Complexity
This option is good for initial generations, where you want to check if your timetable is good inputted and generate-able.
For many schools this option will find a good timetable and they will have no need to use more complex and usually slower

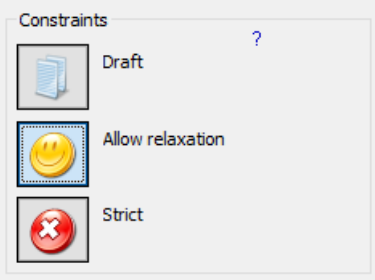
generations.

Large & Huge
This settings are more complex, the computer will spend more time checking your timetable. This can mean the generations will be slower. For some complex timetables it might be needed to use these complexities.

Notes:
a.) Please check the chapter 24.4 A good way to generate your timetable.
b.) Do not forget to test your timetable before generating.
c.) It is not a good idea to use large and huge settings before you are quite convinced that there are no mistakes in the basic data and you inputed realistic constraints.

24.3 Constraints relaxation

Constraints relaxation allows generator to partially violate some constraints in order to fully generate the timetable.



With constraints relaxation enabled, program tries to fulfil all the constraints, but if it gets in some bigger trouble with some card, it will put it into timetable even if it means that some constraints will be broken. Of course, it tries to create timetable that most closely matches your constraints.

Constraints relaxation can help you in two ways:

1. **It can help you with identifying what can be the problem with your timetable and which constraints are probably too hard**. If you generate your timetable with relaxation turned on, there is a higher chance that timetable will be generated. Then you can check which constraints were relaxed and think if they are realistic. Or you might consider changing settings of some constraints to some easier values.

2. **It can help you to find the final timetable with only some constraints relaxed**.

If you turn the constraints relaxation to strict, then no constraints can be relaxed and only those timetables that are fully complient with your requirements are accepted. The software will generate until it finds such, or may leave some unset cards in case such a timetable doesn't exist.

See also:
24.4 A good way to generate your timetable
24.2 What does the complexity of generation mean?
23.5 Generate draft timetable

24.4 A good way to generate your timetable

Here are some 'best practise' procedures to follow when generating your timetable:

1. Test the timetable before the first generation.

2. Test the timetable after you make any big changes to the data.

3. Try to generate a Draft timetable, before inputting all your constraints. A Draft timetable will only contain the basic data(lesson). The draft timetable is good to use to check if the timetable is basically what you expect to produce; if the groups are matching etc.

4. It is a good idea to allow relaxation of the constraints during the first few generations. This can give you a idea of what might be problem in your timetable. For example: if the software always relaxes the maximum number of consecutive lessons for a teacher, it is most likely the case that you will need to allow this teacher to be able to teach more consecutive lessons.

5. Add constraints one by one. If you were able to generate a draft timetable then you are probably heading in the right direction. Now you can add constraints one by one, from the most important to the 'wish lists' of your teachers. So add a constraint, generate and if successful, add another. If you are not able to generate a schedule after adding some constraint it is likely that this constraint is unrealistic based on how your timetable data is currently setup.

6. If needed you can raise the complexity of generation, including draft generations. However, only do this if you are confident that the software understands what you want. That is at this complexity have you been able to generate drafts or previous timetables at this level of complexity.

7. Repeat steps 4,5,6 until you find a timetable you are fully happy with. The good thing about this approach is that you usually end up with a timetable that can be used even if the generation with added constrains produced no results.

8. At some point you might try to turn off the relaxation of constraints and accept only the timetables with no relaxations. Or, if this isn't working for you, you can continue with relaxations and accept the timetable with a few relaxed constraints.

Notes:

a) Sometimes it might be necessary for the generation to take many hours. However it is best to only do this if you are in the later stages of generation. ie) you have already generated some schedules and you are adding new constraints.

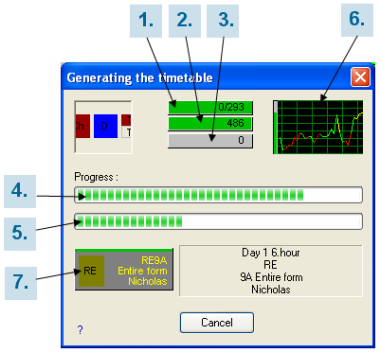
b) We recommend that you do not input all the constraints you might think of to start with and then generate for 10 hours, for

example. Rather it is better to follow the above approach (draft and then add constraints one at a time)

c) We can always assist you if you have problems with the generation of your timetable. Just contact us by using the red question mark (Don't forget to describe your problem so we are better able to help you).

24.5 What does the dialog displayed while the generation is in progress mean?

This dialog is displayed during the whole generation and shows you the progress of your generation:



1. progress bar shows the total number of cards in the timetable. It also shows how many cards the software was unable to put into the timetable. If the generation algorithm was not able to put some cards into the timetable the color of this bar changes and the total number of unplaced cards is shown. For example 3/768. The generation continues, however you might consider to stop it, try again and/or relax some constraints.

2. this progress bar shows how many timetables per second the computer can check. This number is just informative, no real value.

3. this bar shows how many constraints were relaxed, if you have allowed the constraints relaxation. If this number gets higher than you expect you can stop the generation and immediatelly run the verification(press SPACE). That will show which constraints were relaxed. It can give you a clue what the software had problems with and you can react. More on relaxing constraints can be found it this chapter 24.3 Constraints relaxation.

4. The total progress. Your aim is to get this to the most right. However as you can see, if the generator cannot continue in the chosen direction, it can even go back, throw a few cards out of the schedule and try some other way. This is very similiar to how humans would do it manually. Note: the complexity of generation more or less means how stubborn the generator is, how much effort it will put into investigating each possibility before trying another way. More on complexity in this chapter 24.2 What does the complexity of generation mean?.

5. This bar shows some local progress in investigation inside the current path. If the progress goes to the most right, it concludes the current direction is wrong and goes back to check something different.

6. The graph shows you the history of the total progress (point 4). Also please notice the small green vertical bar at the left area of the graph. This green bar shows the maximum achieved progress. What can you learn from this graph? If the green vertical bar is near the top, it means that at some time during the generation, only a few cards were left. This is a good sign that the generation will be succesfull. On the other hand if the bar is at 10% and the graph shows a flat line, the generator is trying to solve some group of cards at the very beginning. It might be a good idea to check what is that group and try to generate only this group. However sometimes it might be necessary to wait and give the algorithm some time to find the solution.

7. the current card that the computer is trying to place into the timetable. Note that there is lifebar at the top of the card. If this lifebar gets red, it means there were many unsuccesfull attempts to generate this card and if there are a few more, this card will be left out of the generation.

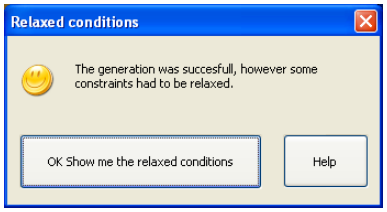
Hints:

a.) Please check the chapter 24.4 A good way to generate your timetable.

b.) You can generate more timetables on one PC, you just have to run multiple instances of the software at one time. Or you can generate a timetable and check some other variants in the second instance of aSc TimeTables.

24.6 Generation has finished and the program tells me it had to relax some constraints.

In case you have allowed constraints relaxation before the generation it is possible that you will see this dialog at the end of the generation:



What does it mean?
It simply means that computer was able to put all lessons into the timetable but it had to relax some of your constraints.

If you click the "Show me..." button the software will show you list of the constraints that it had to relax.

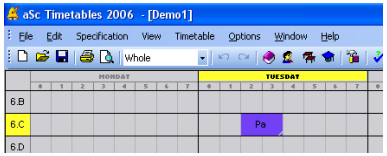
You can check if the constraints that were relaxed are realistic.

Also please check these articles:

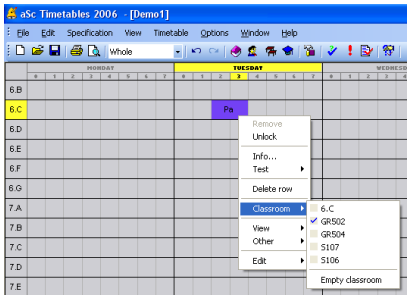
24.3 Constraints relaxation
24.2 What does the complexity of generation mean?
24.4 A good way to generate your timetable

24.7 Can I force the generator to place certain lesson on certain position?

You can place the lesson into the timetable before the generation and then lock them. The generator will not move the locked cards. Locked cards are marked with small stripe in the lower right corner:



If you click right mouse button you can specify also the clasroom for this lesson:

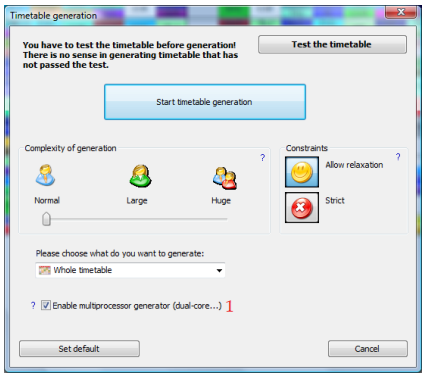


IMPORTANT: try to avoid locking lessons unless really necessary. It is better to specify the timeoffs for teacher, classes, subjects etc. If you lock many cards you can make the timetable impossible to generate. Sometimes one card locked on unlucky position can spoil the whole timetable.

24.8 Multiprocessor generation (dual-core...)

Some of modern PC computers contain special kind of processor called DUAL-CORE processor (or multi-core). Processor is central part of computer that does most of the computation. In case of dual-core processor computer, this processor "contains" two separate processors inside, so it is theoretically capable to do twice as much work in parallel.

Generator in aSc Timetables is capable to utilize this additional computing power. All you have to do is leave checkbox "Enable multiprocessor generator" 1 checked.



This checkbox is visible only on dual-core (multicore, or multi-cpu) computers and is checked by default.

From our measurements, multiprocessor generator on dual-core computer runs cca 50% faster than single processor version.

When to disable multiprocessor generation

In some cases it is not practical to use multiprocessor generator:

- if you are doing some computation intensive work on your computer while generating timetable
- if you are generating two timetables in two separate windows

In these cases it is recommended that you will turn off multiprocessor generator.

24.9 Testing was sucessfull, but the generation fails

1. **Try to generate on higher complexity**

2. **Try to generate with relaxed constraints** to see what kind of constraints had to be relaxed, and then relax them.

3. **You can also try to test bigger parts of the timetable.** The Test tests just one item at time, however sometimes problems are not linked just to single class/teacher, but occur when trying to generate two or more classes/teachers, whole grades, or even half of all classes, etc...
Please see this page:

23.4 Testing multiple classes/teachers at once

See also:
24.4 A good way to generate your timetable

24.10 What happens when I cancel the generation?

The standard generator generates until it places all the cards into the timetable. If you have relaxation allowed it generates until all cards are placed, but may need to break some constraints.

If you cancel the generation you have two options.

Canceling immediately will stop the generator in the exactly same state it was in the moment you cancelled. So if the generator has already placed 90% card but for the last few he had to explore different possibilities, you might cancel it with just 10% cards placed.

Finish quickly option will force the generator to try to place all the remaining cards, without extensive rebuilding of the timetable. This option will not give you timetable, but you will have most of the cards placed which can give you some idea on what is going on in your timetable.

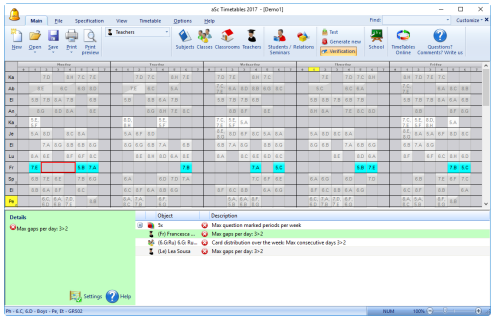
The student based generator works different way. Once it finds timetable, the button bellow changes from cancel to stop. It still tries to find better solution (usually this means less students choices unrealized). It will stop after reasonable time (defined by

the complexity of generation) but you can stop it at any time and the software will show the best solution so far.

25 Verification

25.1 Verification of timetable

The aScTimeTables program allows you to verify the created timetable. You can run verification from menu Timetable/Verification (or by pressing space bar). It shows you the broken or releaxed constraints in your current timetable.



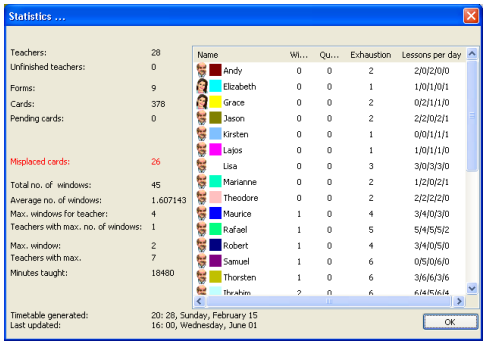
The timetable is grayed. In the lower part you can see a list of errors. Each line shows one error. When you click on any line the affected cards are colorized in the timetable so that you can immediately locate the problem.

On the left from these errors you may find some more information about the current error as well as buttons Settings or Help.

By clicking on Settings you can see detailed description of particular error and you may correct it right away.

25.2 Statistics

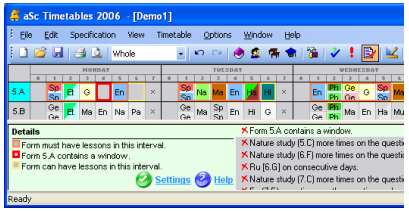
You can get more information about the timetable by choosing menu item TimeTable/Statistics:



25.3 Class XY contains a window

The software calculates when the class MUST have lessons and when it CAN have lessons.

By default every student must have a lessons in the MUST section. So the software alerts if there is a group of students that doesn't have lesson in the MUST section. E.g. Monday 4th on the picture:



A window can be created also in the CAN section. If the CAN section is 5-7 and the class has lesson on 7th but not on 6th then 6th is window in the students timetable.

You can change the MUST and CAN have section by changing the education block manually and allowing students to come later or leave earlier. See: 17.2 Education block - allow some classes to come later or to leave school later.

25.4 Divided cards are placed on too many positions in class XY

This problem is closery related to problem 25.3 Class XY contains a window

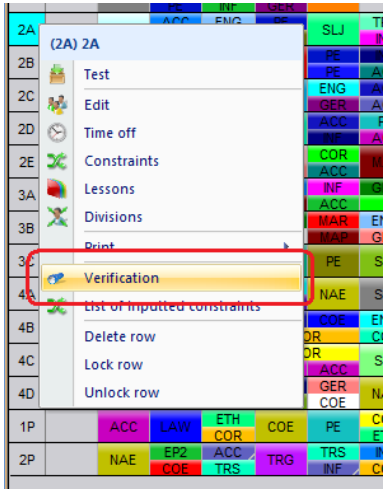
Program automatically counts for every division how many positions can be fully occupied with its lessons.

There are some positions in the timetable where all students must have lesson, e.g. because of checking of windows in class's timetable, or because all students must start education at period 1. If you place cards from division on more such positions than can be fully occupied, program reports this error.

25.5 Verify just one class/teachers/subject

If you want to show problems of just one class or teachers in the current timetable you can right click on its/his row headers and select "Verification".

This will show only the problems related to the selected object:

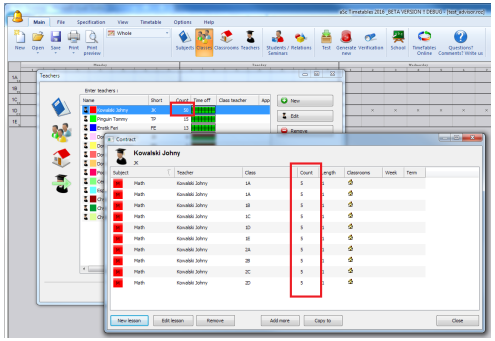


25.6 Advisor - Overbooked class/teacher/room

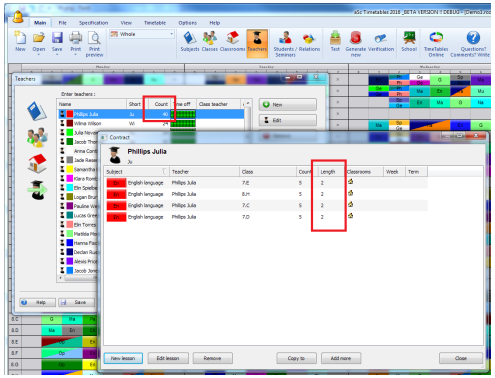
Sometimes it may happen that you defined more lessons per week for one teacher/room or class than you actually have positions per week.

This can be either a mistake in input, or misunderstanding of how the software interprets your input.

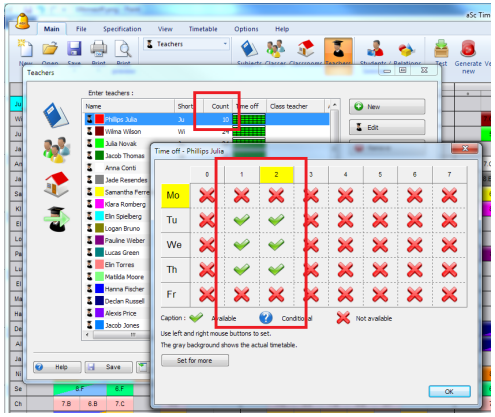
For example, this teacher has to teach 5 periods per week in 10 different classes. In total that is 50 lessons per week. However there are just 5 days each 7 periods. It is clearly not possible to teacher 50 periods per week. Either raise the amount of periods per day or change the contract of this teacher:



Another example:
This teacher teaches just 20 lessons per week, but they are double lesson, so in total she has 40 periods per week:



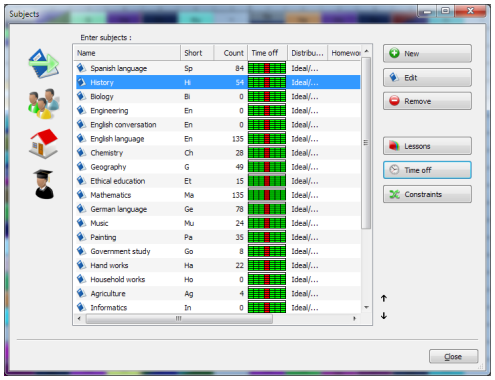
Do not forget to check the timeoff - teacher can have 10 periods, but only 5 free slots per week:



25.7 Advisor - No lessons for certain period

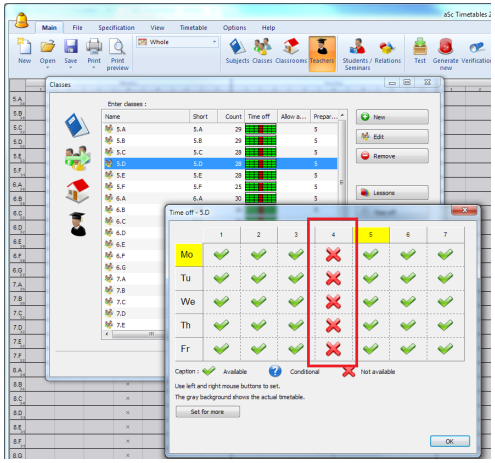
Sometimes it may happen that the class simply doesn't have a lesson that can be on certain positions.

For example this school has forbid all subjects to be on 4th period:



This is however a problem in the default settings where a student cannot have a gap in his/her timetable.

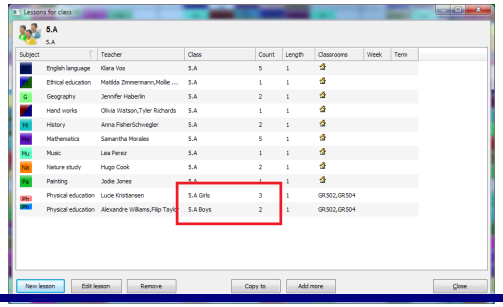
Either you have to allow some subjects or you need to block this period also in the timeoff of the class. Then the software will know there is no period at that slot:



Of course this was simple example - it may happen then only certain teachers combined with subjects will result is some period where no lesson can be placed because either teacher or subjects cannot go there.

25.8 Advisor - Different number of lessons for groups

Let's have a look at this class:

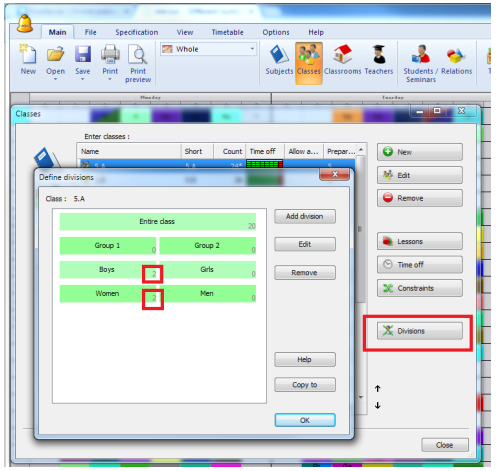


Boys have 3 Physical education lessons per week, while girls have only 2. Of course this can be perfectly legitimate situation on some schools, but many times it is a mistake in data input and the advisor tries to warn you about this.

This was simple example. However, sometimes there are many groups, so it is worth to check this dialog. It shows how many lessons each group has:

Please remember that the software can only put lessons for the groups from the same line onto the same period. Thus if one group has 8 lessons and other groups in the same line have 0 lessons - you will need 8 slots where only one group is placed and rest of the kids have nothing to do.

This example shows not correctly defined lessons:



Since the software can put only lessons from the same division on one period, it cannot put "boys" and "women" together at the same period, although it was probably the intention.

The lessons had to be defined for "girls" so that the software knows these two lessons can be put into the same period.

Notes
- you can disable this warning in the advisor if it is ok on your school.

See also:
5.3 Divisions

25.9 Advisor - Lessons of different length

The software allows you to input double and single lessons of the same subjects.

However sometimes it may be preferable to input them all as single lessons.

For example if you have 5 lesson per week you may have one double lesson (2+1+1+1) or two double lessons (2+2+1).

If both situations are ok for your school, then it is better to leave the decision on the generation. Maybe it will then be possible to find a better schedule if it has more options. This can be especially true if you have many such lessons. Because if you define them all as 2+2+1 - such a timetable might not even exist, but if you allow the software to go for 2+1+1+1 it may find a solution.

Once you have a solution, you can try to go back to 2+2+1 for certain subjects where it is more preferable to have double lessons.

Please check:
7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.

25.10 Advisor - More lessons than days

If you have 5 days and define, that Math lessons shall be 6 times per week, the software will try to put at least 1 Math lesson on each day.

So your lessons will always end up like 1+1+1+1+2.

However for some schools this is not exactly what was needed, there can be two problems with this input.

1. The software will not try to place Math lessons consecutively. If you require the Math lessons to be placed consecutively, it is better to define the lesson as 4 single lesson and one double lesson.
See:
7.4 I want to have Single AND Double lessons of one subject! E.g 1+1+1+2

2. Second issue can be that you allow more flexibility here. Maybe 2+2+1+1 is also correct solution for your school. But since the software treats 6 always as 1+1+1+1+2 you may be limiting options for the generation.
See:
7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.

25.11 Advisor - Teachers have many blocked days

Many of your teachers have a full day blocked.

This of course may be legitimate request and the software can cope with this.

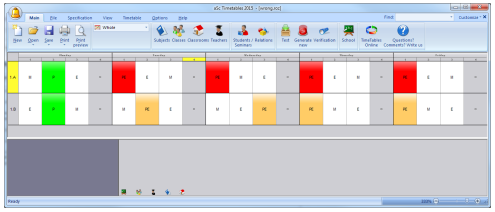
However many times if you block different teacher on different days, the timetable may become impossible to generate.

Very simple example.

Lets say you have small school with 2 classes 1.A and 1.B.

Each class has 5 Math, 5 English lessons, 4 Physical Education and one Painting. The Painting lesson is joined so both 1A and 1B have it on the same time.

By default the software is setup to put one lesson on each day, so on each day the kids will have one Math, one English and either PE or Painting lesson. The timetable will look like this:

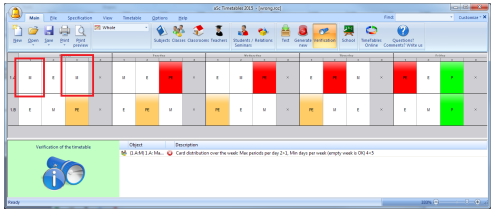


Now the Physical education teachers - Arnold and Christiano are both busy men.

Arnold cannot come on Mondays and Christiano on Fridays.

Suddenly there is a problem in the timetable. The only way how the timetable could be setup was to have these two at the same days.

Now the only solution the software has is to place two Math lessons onto the same day:



As we said earlier, the software by default thinks that if you have 5 lessons per week, then you want one on each day.

So to solve the above timetable, you will need to tell the software to accept that Math can be two times on the same day. If this is not acceptable at your school, you will need to convince the PE teachers to come on the same days. Or you might allow 4th periods.

Since the software cannot decide this for you - you need to tell the software what is acceptable solution on your school.

This was an easy example. In real life if you block many teachers on many days, the timetable can get so twisted you will have no idea what can be wrong.

In that case, try to unblock teachers'

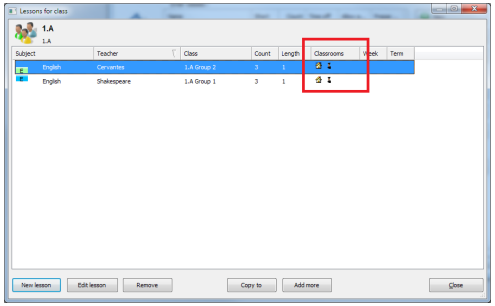
timeoffs that are not essential and try to allow the software to place the two periods on the same day if applicable on your school.

See also:
[7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.]
[17.2 Education block - allow some classes to come later or to leave school later.]

25.12 Advisor - special classrooms are not defined

Typical example of this problem:

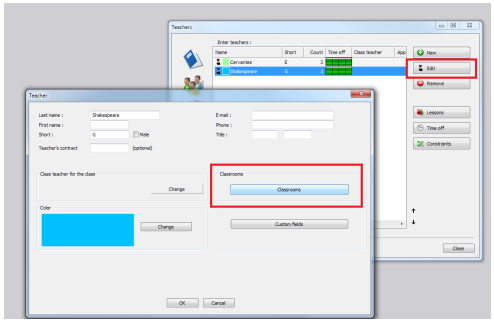
You define that English lesson is divided into two groups. Each group can either stay in the the homeclassroom, or can go to the teacher's room:



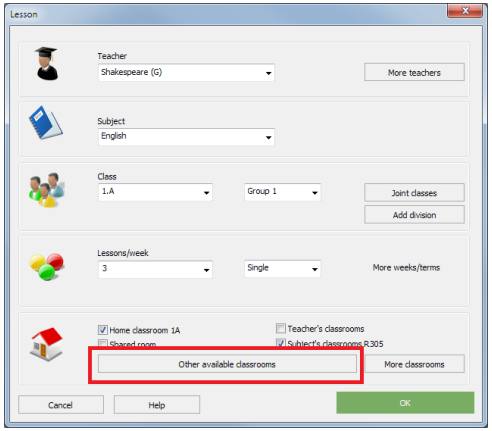
But when you forget to define the rooms for your teacher, the result is that both groups can only stay in the homeclassroom - in other words these two lessons cannot be on the same period, because they require the same classroom.

This might be OK and the timetable may be completed. But many times this is not what you wanted. Especially if all your groups have to stay in home classroom.

To fix this you need to either define the special rooms, etther for teacher, or for subject or define shared rooms:



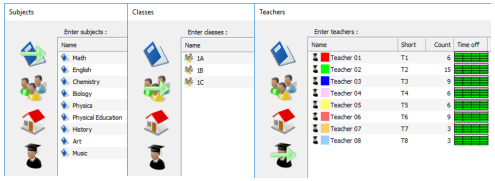
Of manually specify the other available classrooms for those lessons:



See also:
[8.2 What is shared classroom? What is home classroom?]
[8.1 Assign lessons to classrooms]

25.13 Advisor - These teachers have to teach in too many classes at the same time

Typical example of this situation Let s say, that we have small school with 9 subjects, 3 classes and 8 teachers.



Then we want to create some free lessons for teachers. It is fine, until we set, that 6 teachers have time-off on exact same period (on picture below it is third period on Wednesday).

Name	Short	Count	Time off
Teacher 01	T1	6	
Teacher 02	T2	15	
Teacher 03	T3	9	
Teacher 04	T4	6	
Teacher 05	T5	6	
Teacher 06	T6	9	
Teacher 07	T7	3	
Teacher 08	T8	3	

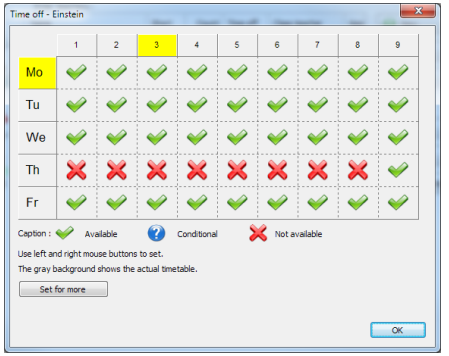
It means, that for these three classes, there are only two teachers available for teaching on this period. This situation software evaluates as clearly mistake in inputs.

As solution, we have to check time-offs of all other teachers, then mentioned by advisor on highlighted position, and allow some periods.
Of course, in real timetable, this is more difficult, as in this example. It need not be only time-offs, but you have to check also other constrains you had created (i.e. maximum periods per day for teachers, constrains forbidding teachers to teach on specific periods, and others).

25.14 Blocked part of the day

It is of course possible to block any part of the day to any number of objects in the timetable.

However, let's look at this timeoff:



Teacher Einstein can teach the whole week, except for Thursday. But somehow he can teach the 9th lesson on Thursday. In most real life situations this is not what the user wanted to input, so the software reports this as a warning. You can hide it - if Einstein

can really teach just that one lessons.

Now imagine that Einstein is teaching 5 Math lessons in 1A and 5 Math lessons in 1B. In the default setting the software will try to put one Math lesson per day in each class. This cannot be achieved because on Thursday there is only one free slot for Math in 1A and Math in 1B.

If the the whole Thursday was correctly blocked, the software would know that Einstein only has 4 days and will generate two math lessons on one day.

So it is worth fixing these little mistakes in timeoffs - they can hurt the generation.

This was very easy example. However if you block several half days to more teachers/subjects, it may be very hard to tell why the timetable doesn't generate.

In that case it is better, if possible, to leave the decision on the software. You can for example tell the software that teacher shall have only 2 days, but the generator can decide which ones:

15.1 We have teacher who teaches only 2 days per week and it doesn't matter which

or if you need some free afternoons for your teachers - let the software decide which ones:

15.12 Each teacher shall have one or two free afternoon

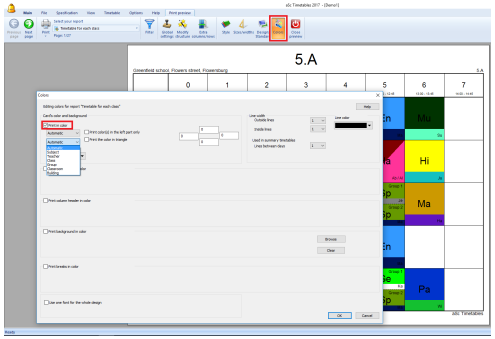
The software allows you to input many similar constraints. In general, initially try to input only the timeoffs for the teachers that are essential. Once you generate initial timetable you can try to please other teachers. But if you input everything at the start, the timetable might not exist and you will not know why.

Note:
- on some schools it might be worth considering this:
7.5 I want to have 1+1+1+2 OR 1+2+2 lessons per week.

26 Printing

26.1 How to print in color and define colors in printouts

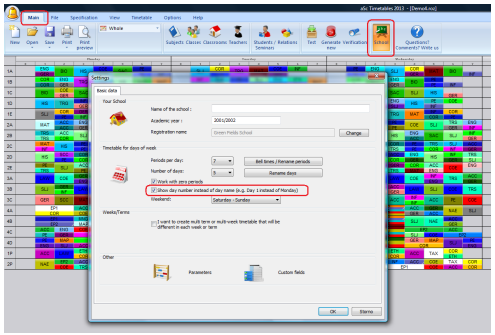
Click on the icon Colors. A dialog appears where you can turn colors on or off:



You can also specify what shall be printed as background color. If you specify for example Teacher, the background color of each card will be defined by the lesson s teacher. This applies only to the selected printout. This feature is usefull for example if you want to print the teachers timetable and color it by buildings so that you can see when they need to switch building.
You can select two colors, one main and one for a small stripe in the bottom of each card.

26.2 We need Day 1, Day 2... rather then Monday - Friday

You can change this in menu Main/School:

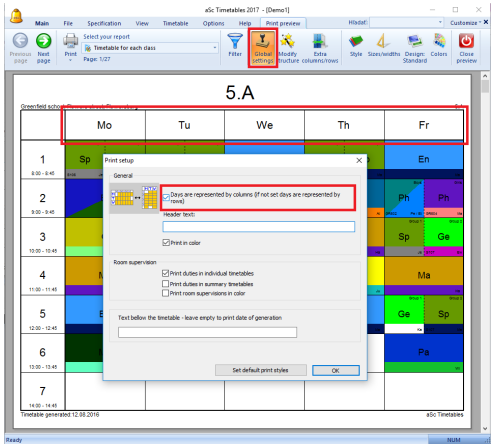


See also:
11.6 Can I rename the days?

26.3 How can I print days in columns and periods in rows?

By default the software prints individual schedules for teachers, classes or classrooms using days as rows and periods as columns.

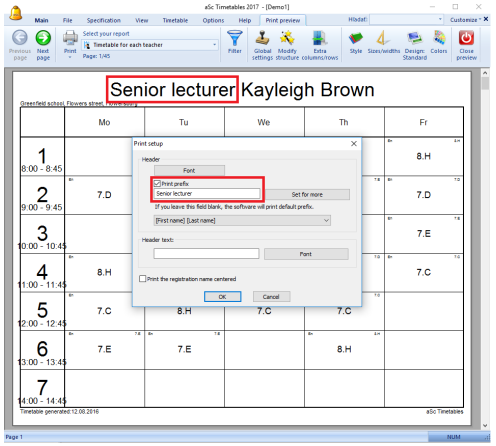
You can switch this as shown on this picture:



Note: you can drag the columns and rows to change the width or heigth of columns or rows.

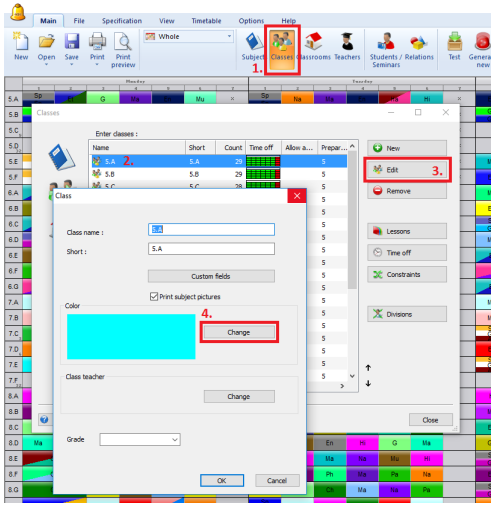
26.4 How can I print Lecturer or Professor instead of Teacher?

Simply click right mouse button on the text and type the desired text:



26.5 How can I change color of CLASS?

Please check this picture:



26.6 Print teachers' contracts

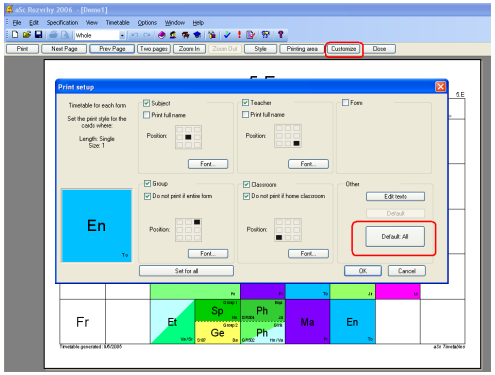
You can export the contracts to MS Excel, adjust to your needs and print from Excel:
30.1 Can I export the lessons, teachers, subjects to MS Excel?

26.7 How to remove all custom texts? Some texts in the printouts are wrong, what can I do?

The software allows you to change the texts in the printed timetable. This helps in some special cases when you want different texts printed in the timetable then the original one. For example Grade5 instead of 5A/5B/5C.

However sometimes you want to remove these custom texts. For example when you used the last years data to create a schedule for the new school year, then the custom texts can get out of date.

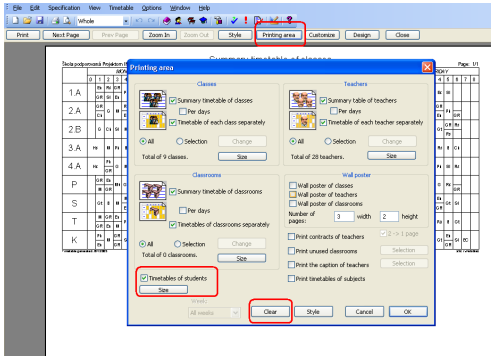
In this case you can remove all the custom texts by clicking **right mouse button** in the print preview mode:



See also:
27.1 Customizing printouts

26.8 How can I print timetable for individual students

If you are using seminars you can print the timetable for each student. Please check this picture:



Note: if you are not using seminars then you might not have the individual students in the software. Only groups. In this case you can only print timetable for whole classes.

26.9 Timetable of subjects

Go to menu "Files/Printing area". In the right bottom corner
check "Print timetables of subject".

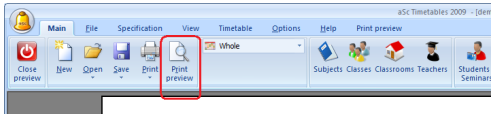
Program will print timetables for each subject where you can see list of classes where the subject is taught.

If you wish to display also the shorter names of teachers you may edit this printout in Print preview using the right mouse button.

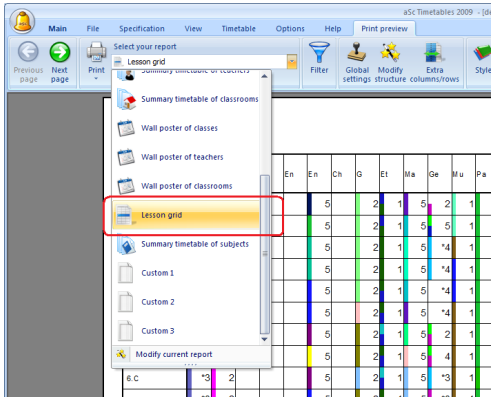
See also:
27.1 Customizing printouts

26.10 How to print lessongrid?

Go to Print Preview.

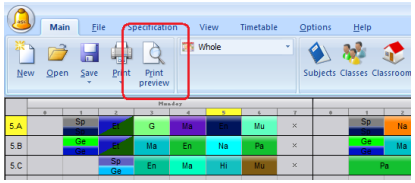


Then select the Print lesson grid from the list of available printouts:

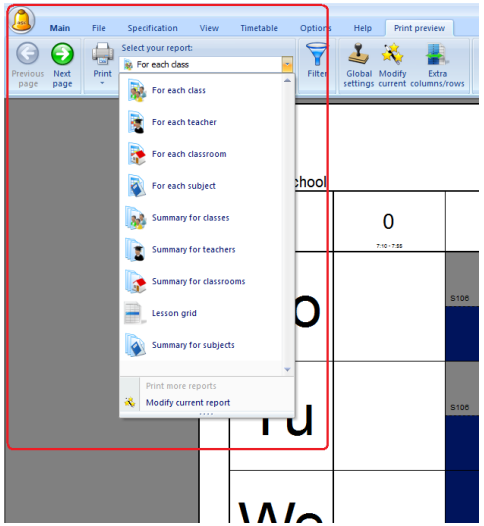


26.11 How can I select what printout will be printed?

On the main toolbar select print preview:



A print preview appears and you can select what shall be printed in the combo box:



Once you select the report you can see all pages via button Next Page, Previous Page or can press button print to print it.
You can also use the remaining icons to modify this selected report.

26.12 I want to have periods running from top to bottom, not from left to right

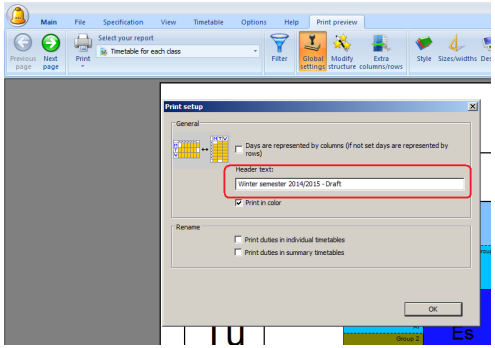
There is one central setting that can swap the layout of timetables for ALL printouts. Go to global settings and choose that lessons shall go to top from bottom:

All the printouts will be changed accordingly. You can define what shall be printed in rows and colums more precisely in the topic Modify the structure of the printout

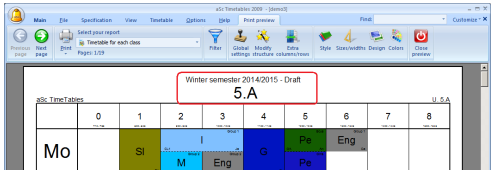
26.13 I want to change the header above printed timetable

You can go to Print Preview, then click icon General Settints.

The dialog is shown where you can write your own header:

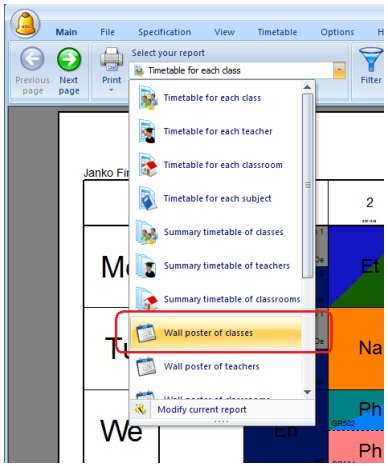


Then the result will look like:



26.14 How to print wallposters, for example 3x2 papers

Select that Wall poster from the list of available reports:



Then you change the column widhts and heihts:
27.14 Modify the heights of rows or widths of columns (available in version 2009)

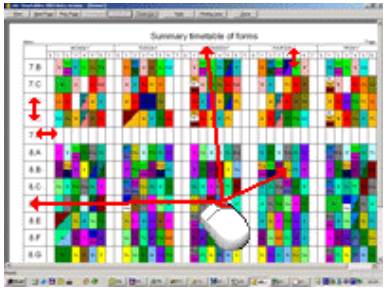
27 Customizing printouts

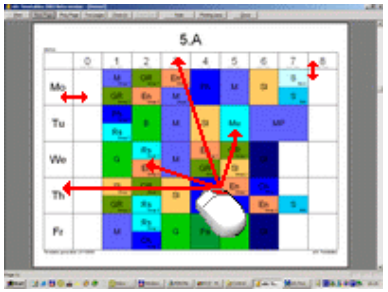
27.1 Customizing printouts

aSc Timetables allows you to fully customize your printouts.

There are two main things you can customize:
- Customizing the timetable
- Using Printout desings

1. Customizing the timetable is done in printpreview. Just press right mouse button on any part of the timetable you want to change:





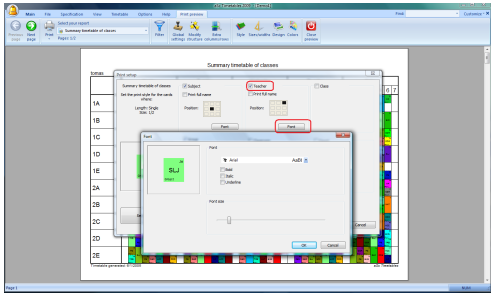
Every part has it's own customization dialog that specifies how that part is rendered in the printouts.

You can also use left mouse button to resize parts of timetable.

2. Using Printout designs allows to you to change the surrounding of your timetable. It is described in this chapter:
28.1 Print-out designs

27.2 I want to print also teachers' names in timetable printout/ need bigger font size

You can customize what is printed on each card:
1. Go to printpreview.
2. Use the right mouse button on the desired card:
3. Check what shall be printed:



The same aproach can be used to specify texts also in individual timetables.

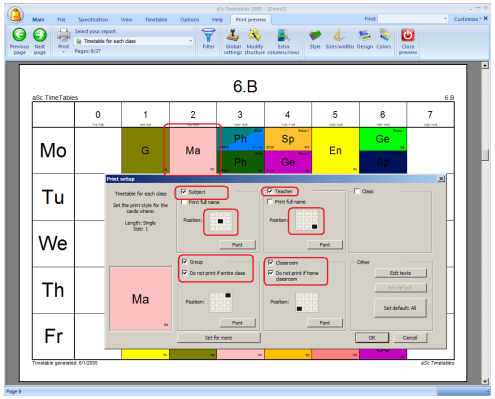
You can also specify the font sizes and positions for each element that you want to print.

Remember that you are customizing only one type of the card. This allows you to use different layout/fontsizes for double lessons and different for single lessons. On the other hand if you want the same change on double and single lesson you have to do it two times.

See also:
27.3 I want to print also classroom/teacher/subject for each lesson

27.3 I want to print also classroom/teacher/subject for each lesson

In print preview, you can right click on any card and you can modify what shall be printed on this card:



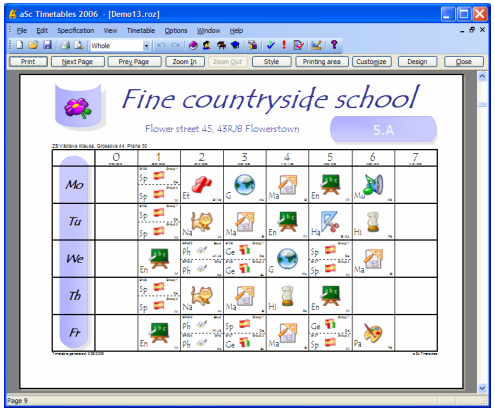
You can check if you want to print subject, class, teacher, classroom and for each object you can also specify position of each element.

For example on the above picture the subject is printed in the middle, teacher in the bottom right corner. Classroom is printed in the bottom left, however if the lesson is in homeclassroom for that class, it is not printed.

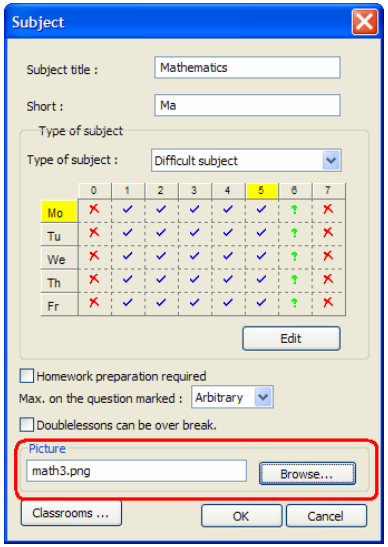
See also:
27.2 I want to print also teachers' names in timetable printout/ need bigger font size
You can also change the texts for each lesson

27.4 Printing pictures of subjects

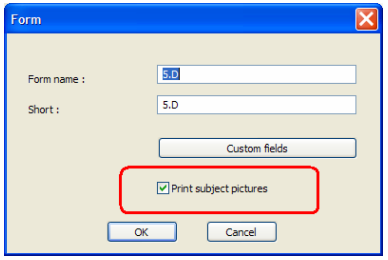
For each subject you can specify a picture. This feature is very good for younger children so that they can understand the timetable without reading. Also if you put in nice pictures, the printout looks nicer:



This is how you specify the picture:



Also for each class you can specify if you want to print subject pictures or not, so for smaller children you can print pictures and for older just the texts:

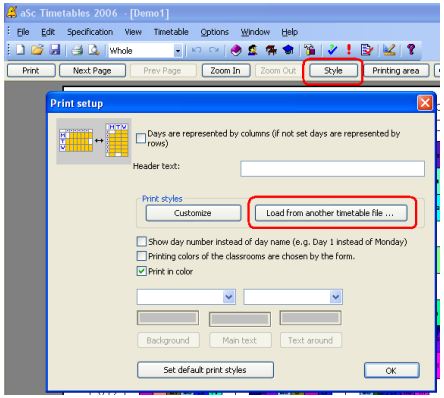


Note:
- aSc TimeTables comes with a collection of pictures located in 'Subject pictures' directory, but you are free to find your pictures in your collections or on the internet.

- the selected pictures are copied to the timetables/Subject pictrues folder. So if you want to print the timetable on some other PC you have to copy this folder before printing.

27.5 Can I load a custom printout settings from another timetable?

Please check this picture:

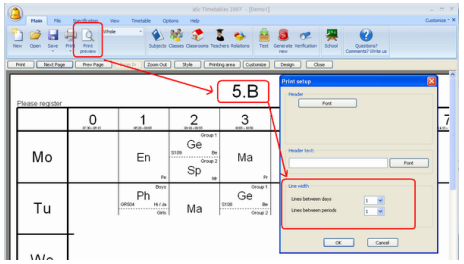


Note that this only applies to timetable printout settings. Not the printout designs.

27.6 How can I set the width of the lines?

First go to print preview.

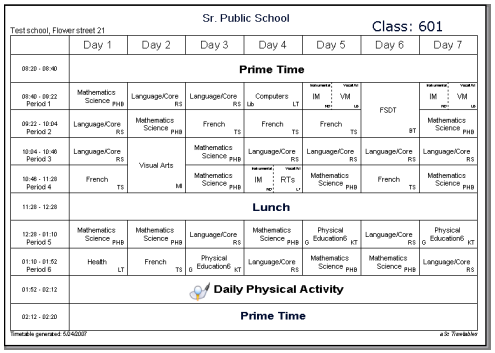
Then right click on the header of the timetable. A dialog appears where you can input line widhts:



You can input two widths. One for main lines between days and one width for less important lines usually dividing the periods during each day.

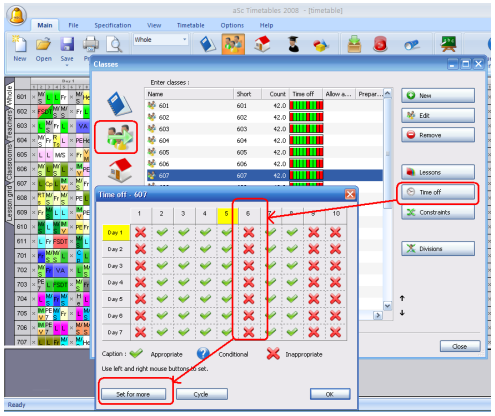
27.7 How to print DPA, Entry, Lunch, Recess?

Some schools want the printout to look like this:

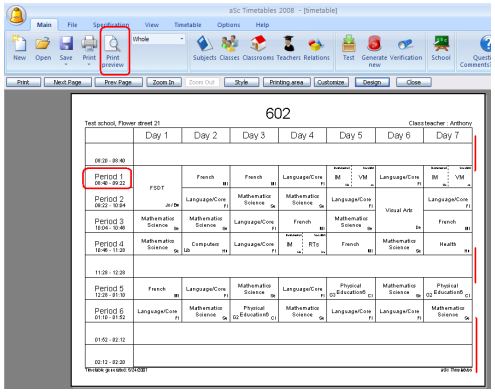


If you are one of these schools, please take the following steps:

1. Block the periods:
For each class specify in the timeoff that there is no education at these periods:

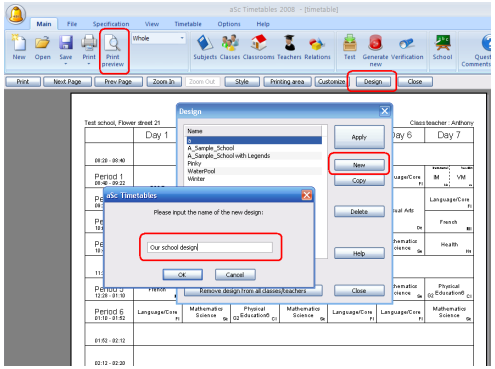


2. Once you do this, the software will realize that you want to skip these periods and will not number them in the printouts:

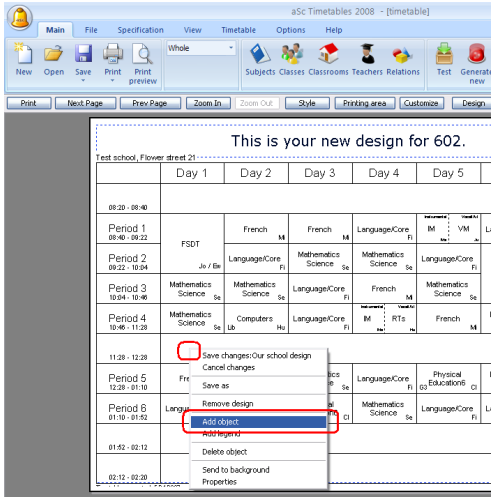


You might have to switch the printouts to display days in columns in case you haven't done so already:
26.3 How can I print days in columns and periods in rows?

3. Create a printout design for your school:

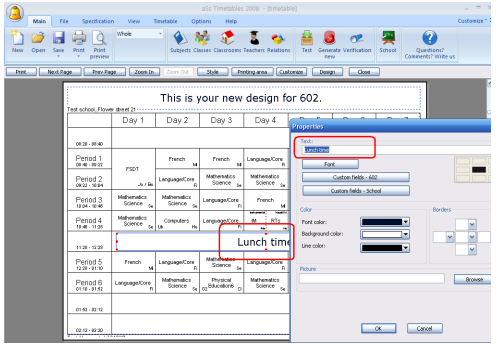


4. Click right mouse button and choose Edit Design. Then add the text field to the empty fields using right mouse button again:



The new field is added to the topleft corner, move it to the desired position.

5. Double click on it to type the desired text:



You might position the texts, change font sizes maybe add some object with pictures.

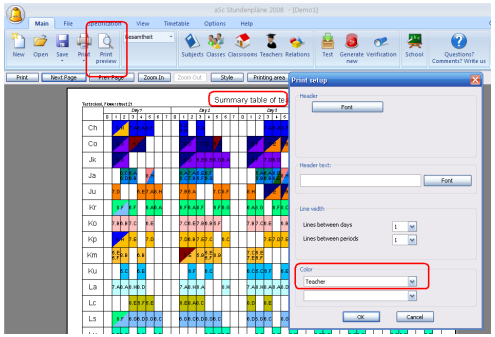
See also:
28.1 Print-out designs
26.3 How can I print days in columns and

periods in rows?

27.8 I want to print summary timetable of teachers with teachers' colors

By default the summary timetable of teachers is printed using colors of classes.

However you can go to Print preview and right click on the timetable header:



You can select which color you want to use.

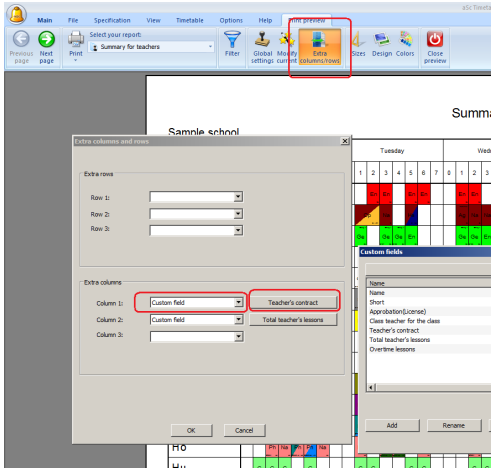
27.9 I want to have periods running from top to bottom, not from left to right (available in version 2009)

There is one central setting that can swap the layout of timetables for ALL printouts. Go to global settings and choose that lessons shall go to top from bottom:

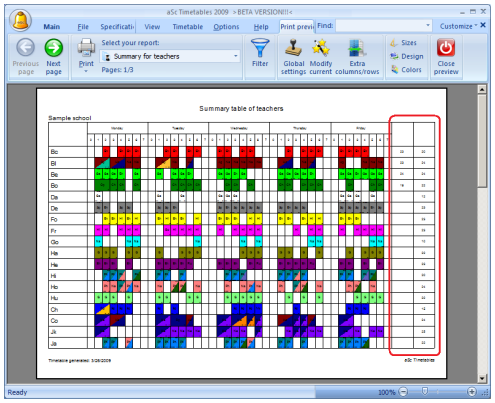
All the printouts will be changed accordingly. You can define what shall be printed in rows and colums more precisely in the topic Modify the structure of the printout.

27.10 How can I define Extra columns?

For each printout you can define several additional columns or rows. For example, you want to add column with teacher s contract and actual total number of his lessons. Go to Extra columns, add two columns both with custom fields. If you select a custom filed in the combo box an additional button appears where you can specify the actual custom field that shall be printed:



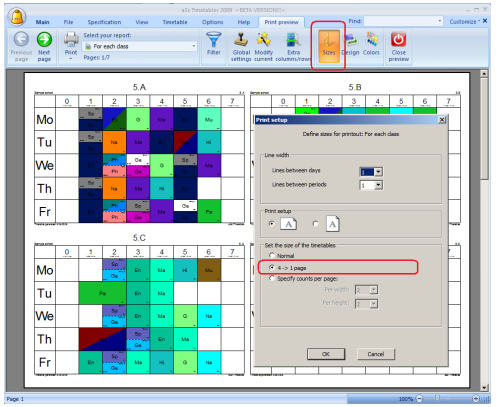
The result is 2 extra columns with teachers contract and his actual number of lessons:



The custom fields can be edited and you can write actual values for each teacher: 3.4 Custom fields

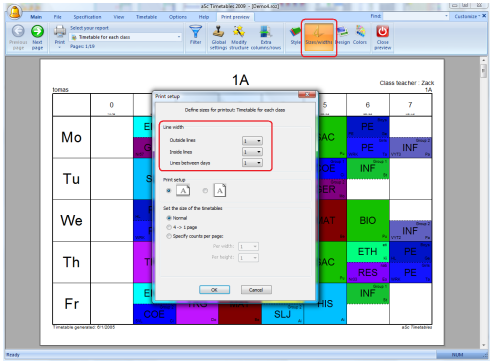
27.11 Printing multiple timetables at one page (available in version 2009)

Select icon Sizes. Here you can specify how many timetables shall be packed onto one sheet of paper. This can be good to save paper when printing timetables for students or classes. Select timetables per width and per height or just quickly select 4->1:



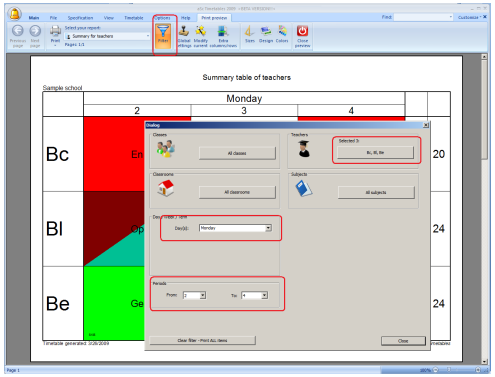
27.12 How can I define the widths of lines (available in version 2009)

If the lines are too thin at your printer, go to dialog sizes and you can specify the widths for inner and main outer lines:



27.13 How to print only certain classes or teachers? (available in version 2009)

You can use button Filter. Here you can specify for each type of the objects allowed values that you want to see in the printouts. For example, here we will print a summary timetable only for 3 teachers and only for Monday, periods 2-4:

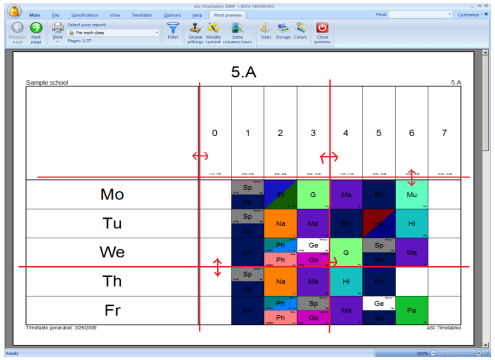


This filter is global for all printouts, so it will affect all the printouts. For example if you select 3 teachers, then in the summary timetable of teachers it will print only 3 rows. In timetable for each teacher it will print 3 pages. However, printout for each class will not be affected one page for each class will be printed.
You can clear the filter using button Clear filter print ALL items in the filter dialog.

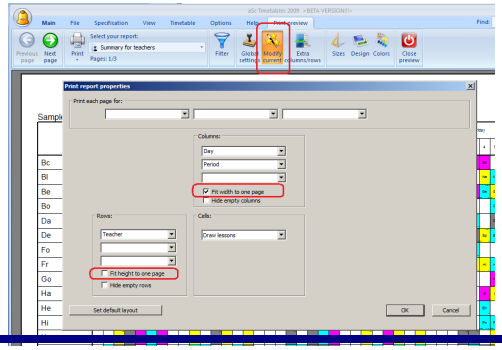
Note: The filter is not saved, its reset after you load the timetable.

27.14 Modify the heights of rows or widths of columns (available in version 2009)

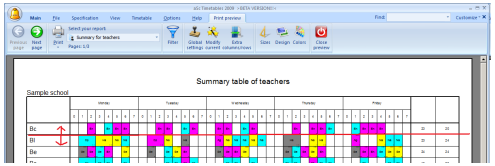
In each printout, you can drag the lines between the timetable, header and footer:



In some reports, you can also drag the FIRST line that divides the first row or column. Why only in some reports? Because a report be set to fit to page width or page height.
For example, summary timetable of teachers is fit to width, but not fit to height so you can set the height of the rows. IF there are more rows, the printout will continue onto the next page:

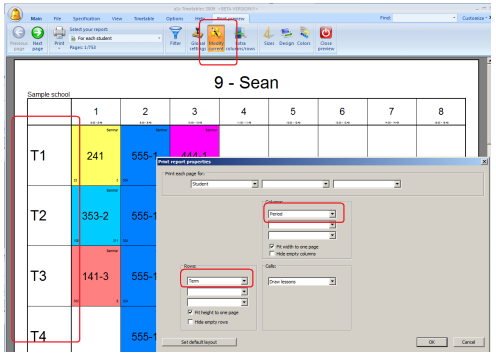


You can change if the printout must fit width of height in the Modify current icon. This applies only to the current report and you can specify this separately for width or height. If the page is not fit to height, then you can change the heights of rows:

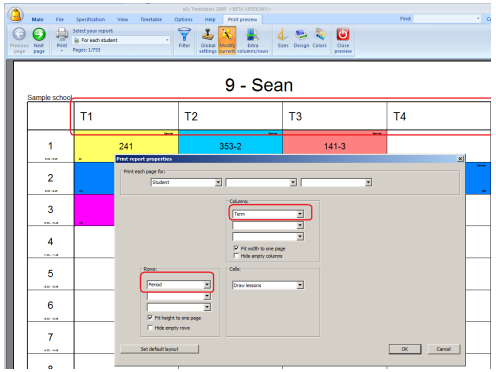


27.15 Modifying the structure of the printouts (available in version 2009)

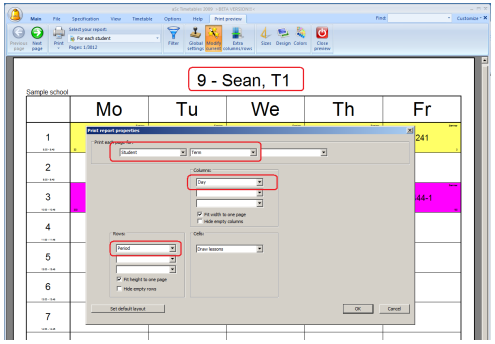
By default, the software provides the most common report types. For example, Printout for each class, or summary timetable for classes. You can change the look of these reports. However, there might be situations where you need bigger changes. Typical example might be to modify the report for each class or students, so that it doesn t show days/periods but rather terms/periods. This is very useful for schools that have the same schedule each day during the semester.
In order to create this report, all you need is click Modify Current and change what shall be displayed at the left side:



If you want the same report but periods at the left side and terms at the top, simply swap the contents of the rows and column definition comboboxes.



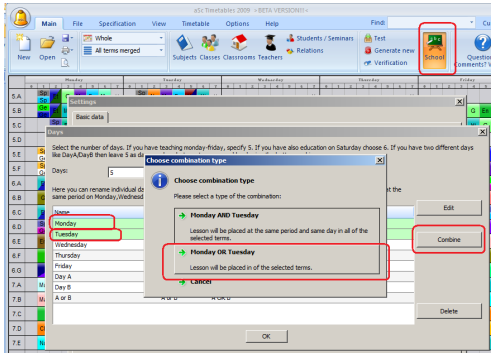
If you for example have different timetable each day and each semester, you can print a separate paper for each student and each term. Simply specify at the top part what shall be on each page. By default there is one page per student, you can add term in there:



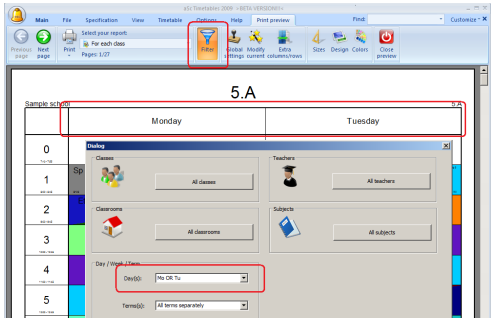
Now, whenever you will select in the main combobox that you want to print timetable for each student, this new modified layout will be used.
Note that you are always changing the current layout. You can press button Set Default layout to get the default values. This will reset all your changes.
Before modifying the layouts, make sure you are editing the correct or nearest report.
Theoretically, you can modify the summary timetable of teachers so that it prints one page for each teacher. But you already have such a report in defaults and you will have to no summary then. In this case, it is better to modify the original for each teacher report.

27.16 How to print report for Monday AND Tuesday only? (available in version 2009)

You have to go to the days definition dialog and create new entry Monday OR Tuesday:



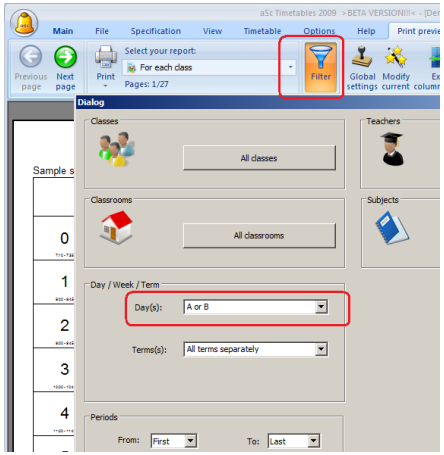
Once this is done, you can simply select this entry in the filter and only these two days are printed.



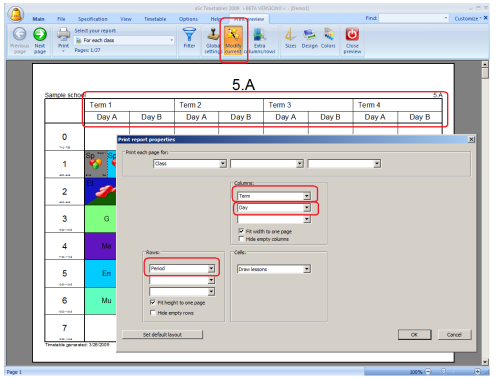
This might look a bit complicated, but once you define this special day, you can quickly reuse it further printouts, you can even combined it with some new days and the same system works for weeks and terms if that applies to your school.

27.17 How to print reports for DayA/DayB? (available in version 2009)

If your school has DayA/DayB timetable, you can define these special days in the Day definition dialog, see above.
Then all you have to do is to make sure in the filter you have selected entry DayA or DayB:

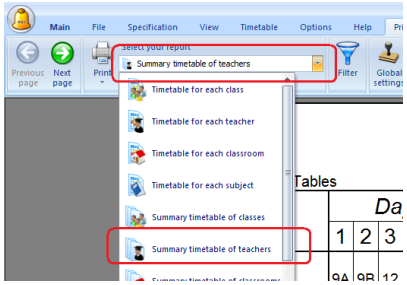


The program will then print your lessons accordingly, for example this is report that prints terms and days at the top, and periods at the left:



27.18 How can I print summary timetables for teachers/classes/clasrroms?

Go to print preview and in the marked combobox, select your report.



Notes:
1. You can modify what shall be printed in each card
27.3 I want to print also classroom/teacher/subject for each lesson

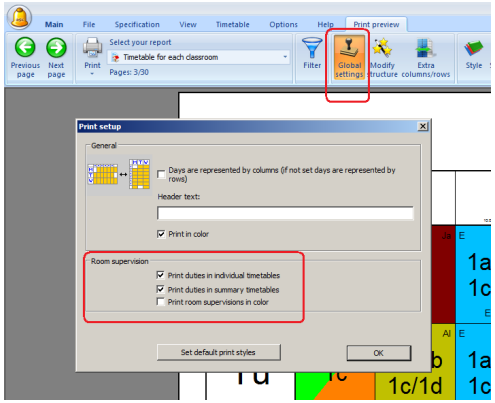
2. You can change the height of rows by dragging the lines
27.14 Modify the heights of rows or widths of columns (available in version 2009)

3. You can change colors of the cards
26.1 How to print in color and define colors in printouts

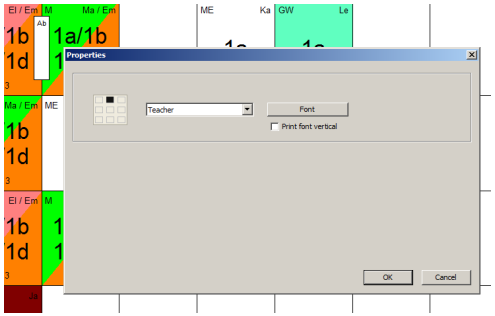
27.19 How to print room supervision in teacher's and classroom's timetable?

You can print the room supervision in the timetables for each teacher or classroom.

In menu PrintPreview/Global Settings, you can check if you want to print the room supervisions in individual and/or in summary timetables.



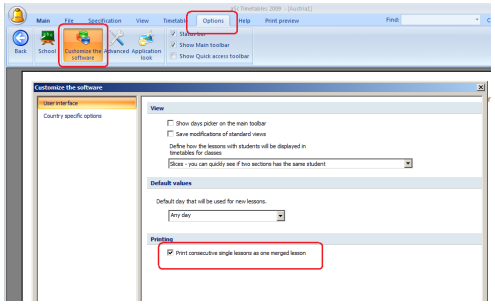
Note:
- you can even customize the font size/position. Just right click on any room supervision in print preview:



- if you check "print room supervision in color" then the background is filled with teacher's color in the timetables for rooms and room color in the timetables for teachers.

27.20 Is it possible to print consecutive single lessons as one lesson?

Yes, there is a global setting in menu Options/Customize the software:



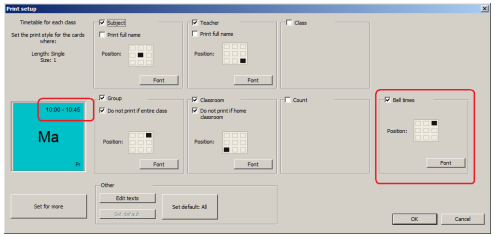
When check the software will print all consecutive single lesson as one longer lesson.

Notes:
- this applies to printouts only. The timetable displayed in the software will show two single lessons.
- the lessons have to be the same. Same subject, same classroom etc.

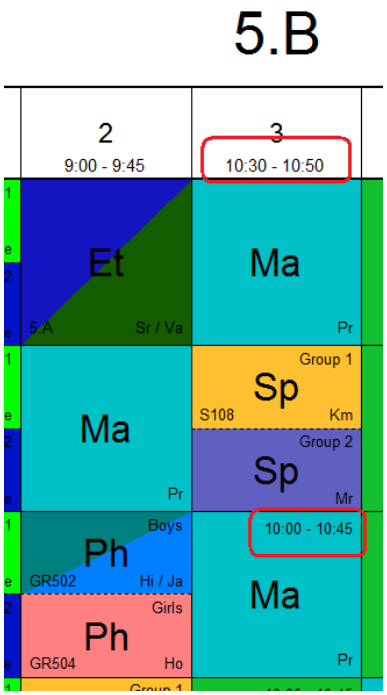
27.21 Printing different bell times for school sections/days

By default the software print the bell times bellow the period number.

In case you have diffent bells in some parts of the school or on some days, then you can print the bell time directly on the cards, right click on them in the print preview and select that you want to print the bells on cards:



Then, if the actuall period has different start or end then the value in column header, the periods times are printed:

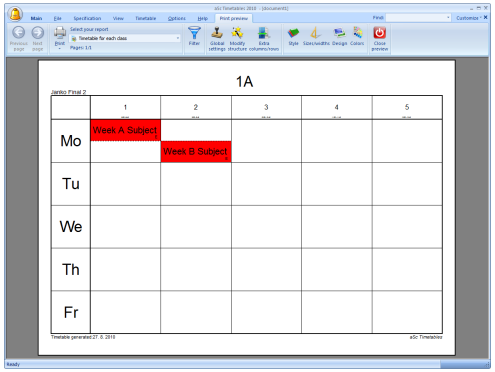


In class timetable, this can happen when there is different bell times on some day, in teacher's timetable this can happen when the teacher is teaching in school section with different bell times.

See also:
10.13 Do not print some breaks or periods in some classes(or teachers or in summary timetables)
10.8 We have different recess times in parts of school. How to input it? (Solution 2)
27.26 Print different bell times for teachers

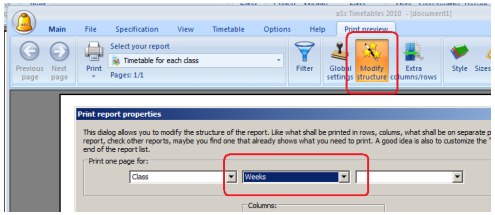
27.22 Printing weekly timetables

By default the software prints the two week(or two term) timetable on one sheet, with the row divided into weeks. Top part of the row shows week A, bottom part shows week B:

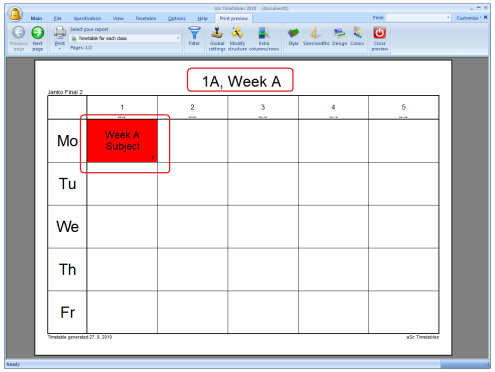


Setup 1

If you want to print each week on separate paper, go to Modify structure and add "Weeks" to headers:

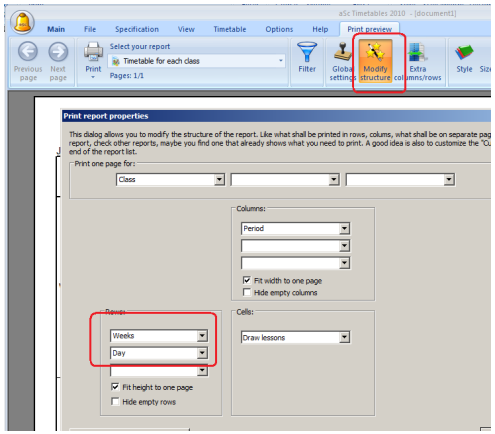


The software will print one paper per each week:

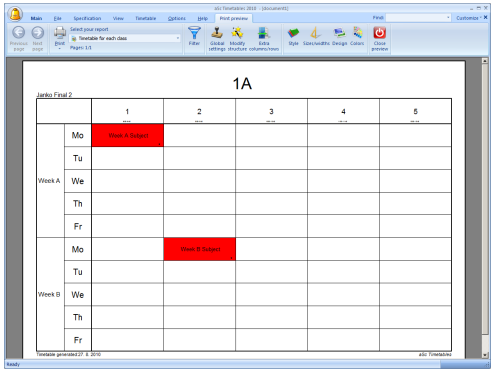


Setup 2

If you modify the strucuture like this:

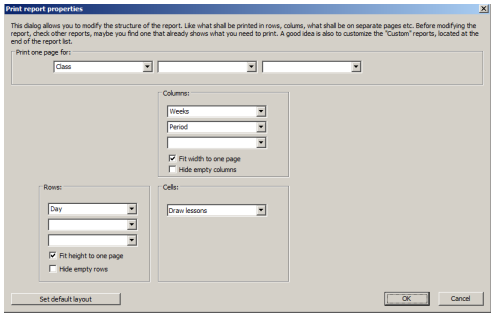


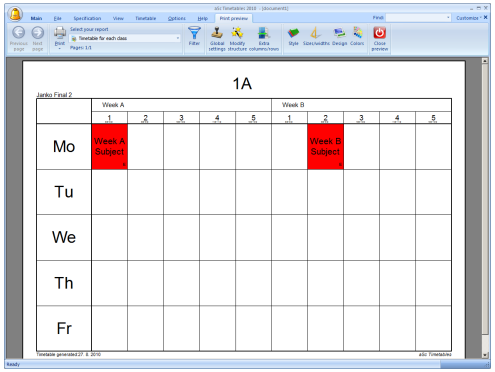
The software will print week A days and then bellow week B days.



Setup 3

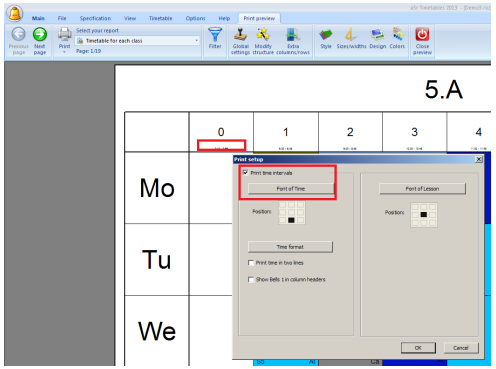
Similar setup, just the weeks are at the top:





27.23 How can I print bell times?

The default bell times can be printed by right clicking on the lesson number in print preview:

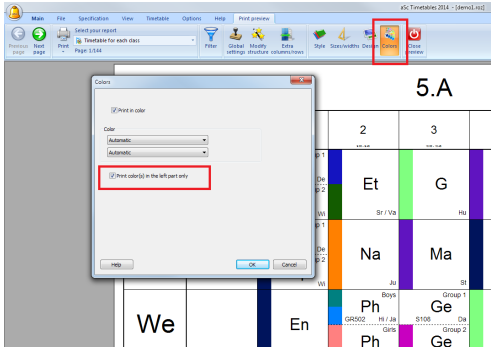


See also:

27.21 Printing different bell times for school sections/days

27.24 Print the color only in the left part of the cell

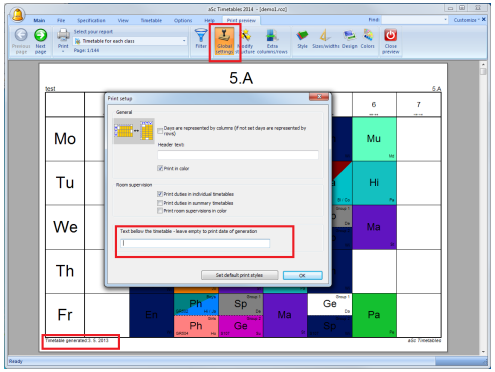
If you do not want to print the timetable in full color you can print the color of teacher only in the left part of each lesson:



27.25 Print date or remark bellow timetable

By default the software prints date of last change in the bottom left corner of the timetable.

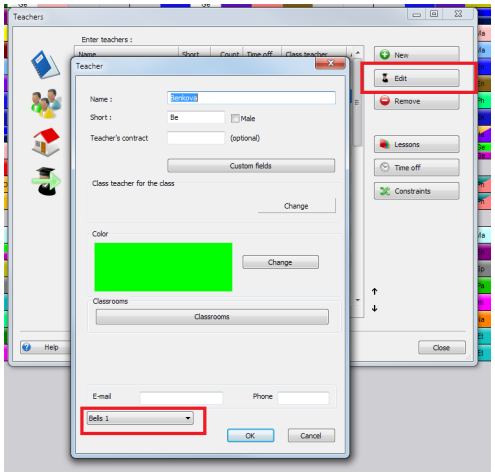
You can change it in Global settings:



27.26 Print different bell times for teachers

If your school has different bell times for different parts of the school, then the software tries to guess which bells shall be printed for each teacher. Eg if the teacher has all the lessons in one part of the school, then that bell is printed. But if the teacher is teaching in two parts, it is not clear what shall be printed.

Then you can specify for each teacher his/her bells and then these are printed:

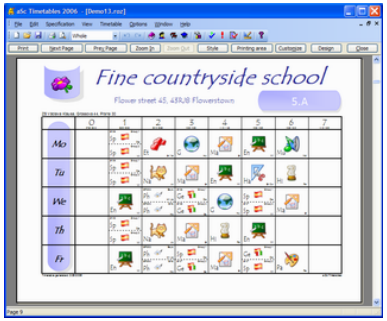


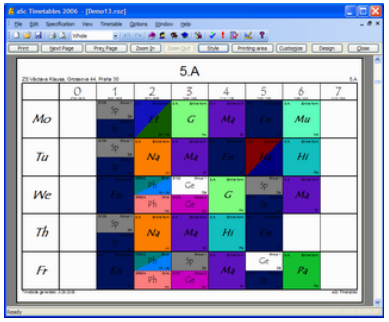
See also:
27.21 Printing different bell times for school sections/days

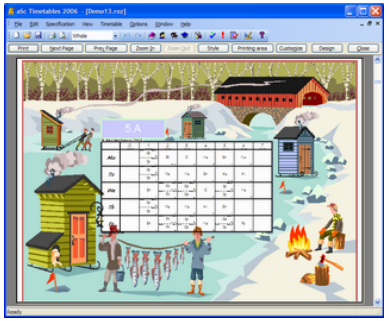
28 Printout designs

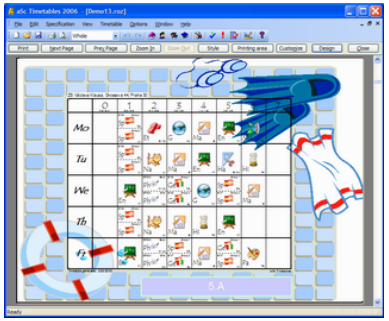
28.1 Print-out designs

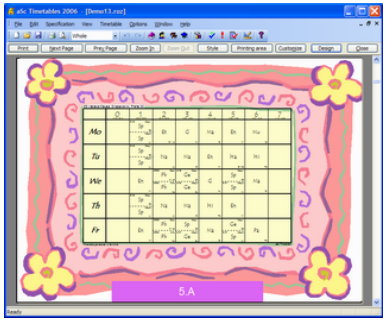
aSc Timetables allows to completely customize your printouts.

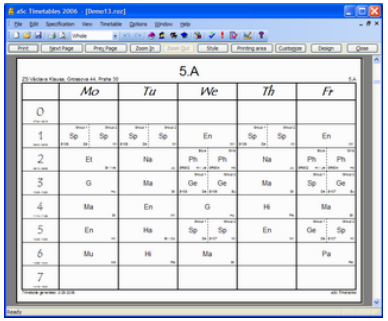












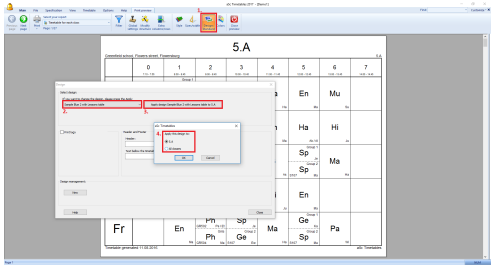
aSc TimeTables comes with a collection of predefined designs. You can choose and use one of them. You can also modify any design and create your own, customized for your school with your **school's logo**, address headers and all the information you might need on the printouts because your education ministery requires it.

Here are the possible tasks:
28.2 How to apply a print design
28.8 How can I change/remove the design?
28.7 How can I modify the print-out design?
28.6 Design object properties
27.4 Printing pictures of subjects

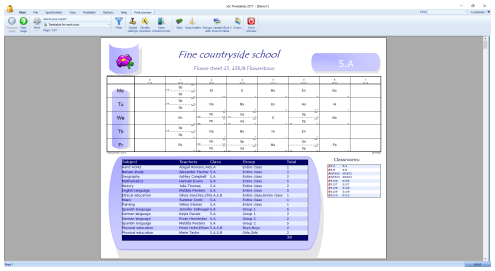
28.2 How to apply a print design

Go to **PrintPreview** and display the class, teacher or classroom to which you want to change a design.

Then press button **Design** (1.). Select your design (2.) and press button **Apply design ...** (3). Program will ask (4.) if you want to apply this design to selected class or to all classes.



Then your timetable is shown with this new design:

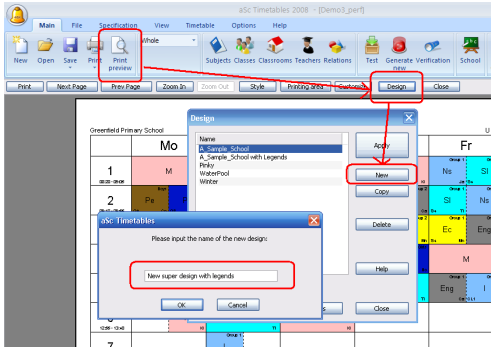


28.7 How can I modify the print-out design?

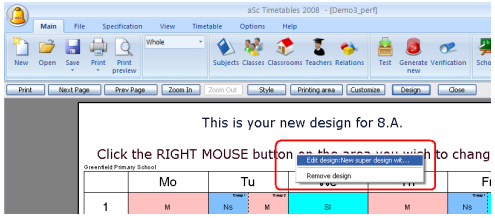
28.3 Print legends below timetables

Below each timetable you can print legend that shows list of subjects, teachers or classrooms so that your students will understand the abbreviation in the timetable.

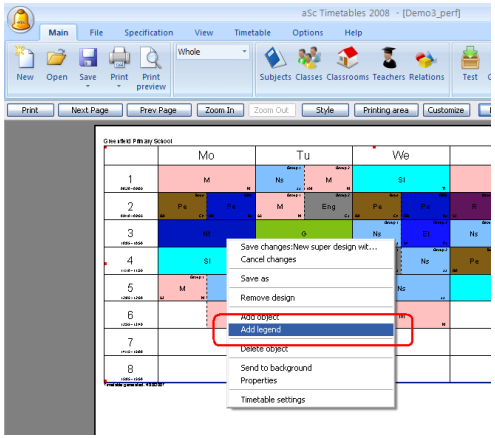
First you have to create your own design:



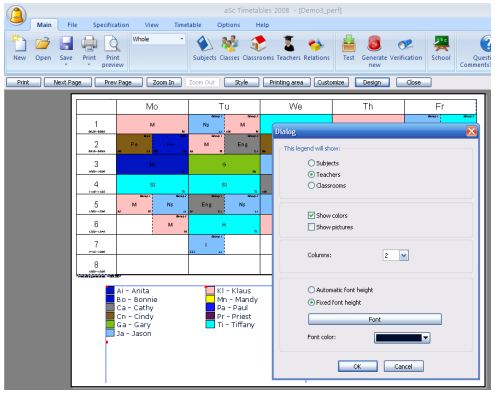
Then apply it to the selected classes or teachers and **press right mouse button to Edit the design**:



Once you have your own design you can add legends to it. Again right click in the print preview:



A dialog appears where you can customize the look of the legend:

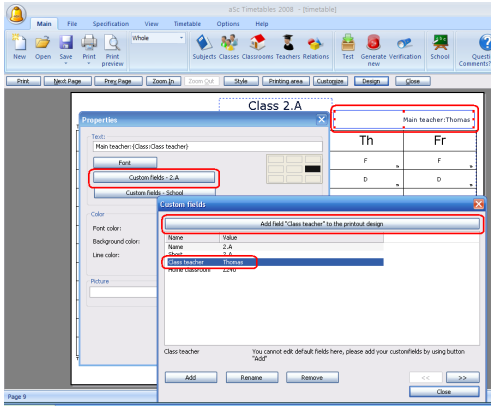


After clicking OK you can move the legend to the desired position, resize it. You can also add other legends(teachers, subjects) or change the look of the legend by right clicking on it.

28.4 How to add class name, classteacher, homeclassroom to my print design

1. Add new design object to your design using right mouse click and selecting menu "Add object".

2. Add custom fields with this information to the design:



3. Type your text before

"{Class:Class teacher}"

For example:

"Main teacher: {Class:Class teacher}"

For each class the part in brackets will be replaced by it's classteacher's name.

See also:
28.7 How can I modify the print-out design?

28.5 I want to print different texts for each teacher. Do I have to create design for each teacher?

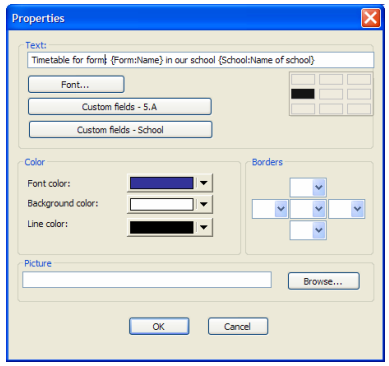
No. You just need to create one template and use **custom fields**.

You can define your custom fields and then fill them for each teacher. In the design you will print a custom fields, so for each teacher his/her own texts will be printed.

See also:
3.4 Custom fields
28.6 Design object properties

28.6 Design object properties

Each object in the design can have text, borders, backround and pictures:



Please note that the text allows you to define replacable parts. So instead of creating design for each class with hardcoded class's name, you can create one design with text the includes {Class:Name}. This part will be replaced with actual class's name during the printout.

You do not have to care about the format, rather use two buttons below the text field. These shows your custom fields. Double click in the custom fields dialog and the corresponding field will be stored to your text.

You can combine normal text with custom fields in one text object.

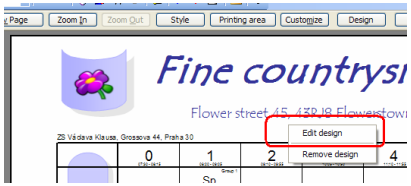
You can also specify the text alignment by clickin on one of the 9 positions in the control below the text field.

Note: the browsed picture file will be copied to the designs directory, so that everything you need is located in one design folder.

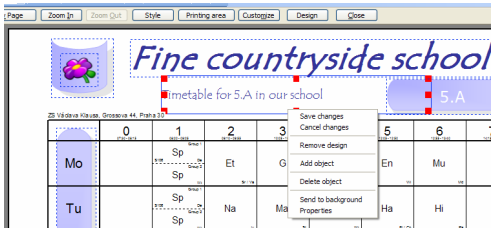
See also:
3.4 Custom fields

28.7 How can I modify the print-out design?

Just press **right mouse button in Print preview** and select Edit design:



You will immediatelly see the current design in Edit mode. Each object in the design is displayed in blue rectangle:



You can:

1. Click to select an object and **drag** it to another location

2. Use the red track points to **resize** the object

3. Double click on any object to **Edit properties** of this object. See: 28.6 Design object properties

4. Press right mouse button and select **Add object** to add a new object to your design. The new field is added to the top left corner and you can immediatelly edit the properties of this new object.

5. Press right mouse button and select **Remove object** to remove the object.

6. Press right mouse button and select **Send to background**. This will display all other objects above this one.

If you press right button over the timetable itself, you have another option **TimeTable properties** that allows you to change the look of the timetable as described in: 27.1 Customizing printouts

Once you are happy with your changes you can press right mouse button and either **Save changes or Cancel changes**

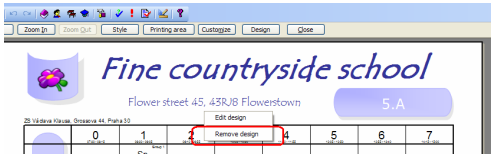
Notes:
- each design is represented by it's name. So for example if you change design named 'Our super cool design', then all classes/teachers(also in other timetables) that are using 'Our super cool design' will be displayed with the changes you've made. So if you only want to change the design for one class only, then create a copy 'Super cool desing for 5.A' and change this copy.

- the actual desings are not saved into your timetable file. So if you want to use design on another PC you first have to copy the folder c:\timetables\designs\our cool design to the other computer before printing.

See also:
3.4 Custom fields

28.8 How can I change/remove the design?

If you do not like the selected design, you can simply press **right mouse** in printpreview mode and select Remove design. From now on the selected page will be printed without any special design:



See also:
28.9 I get error message: design file is

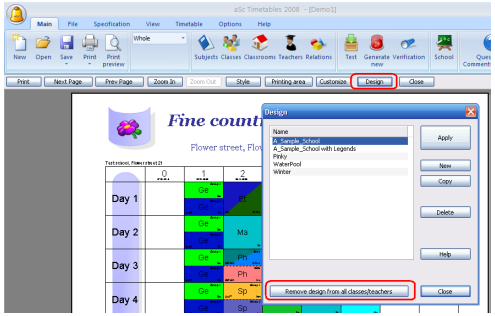
missing on this computer

28.9 I get error message: design file is missing on this computer

If you create a new design on one PC this design is not available on another PC.

You can either copy the whole folder c:\timetables\designs\designname from one PC to another.

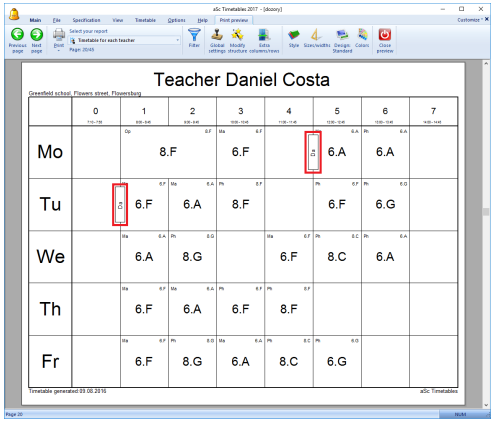
Or you can remove the design from your timetable, so that all timetables are printed in standard layout. Just click PrintPreview/Designs and Remove from all:

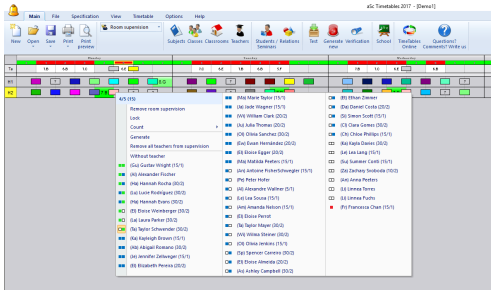


29 Room supervision (break time supervision)

29.1 What is room supervision and how to input it?

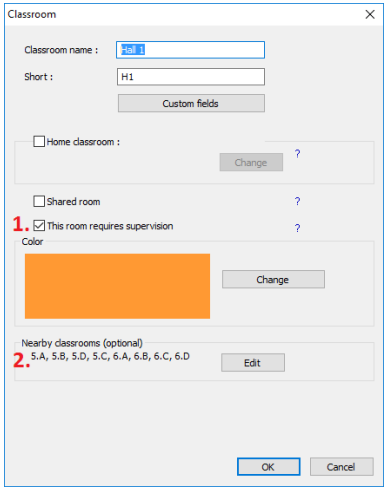
On some schools, children need to be supervised by some teacher during break times in some areas of the school (e.g. halls, or yard). aSc Timetables offers you a set of functions to handle this situation.





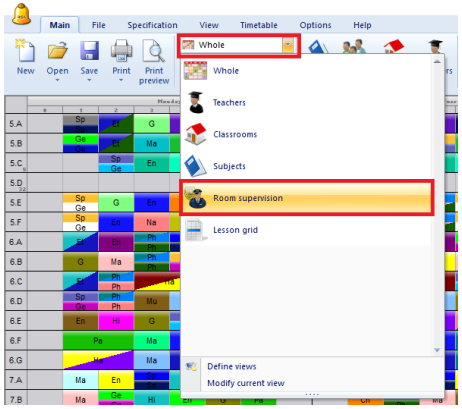
How to input room supervision?

First, you have to input areas (rooms) where supervision has to be done. You input these areas as ordinary classrooms, but you have to select checkbox 1 in Classroom dialog:

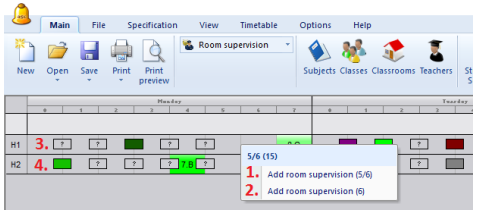


It is also recommended, that you will input nearby classrooms 2 of this area. This information is helpful during assigning of teachers for supervision - it is better to choose teacher which was teaching lesson in some nearby classroom before or after supervision time.

Next step is to define supervision times. You can do this in special "Room supervision" view (menu View/Choose/Room supervision).



In this view you will see only classrooms where you have checked "Room supervision" in classroom dialog:



Note: Room supervision view is visible only when you have defined some classrooms that need room supervision.

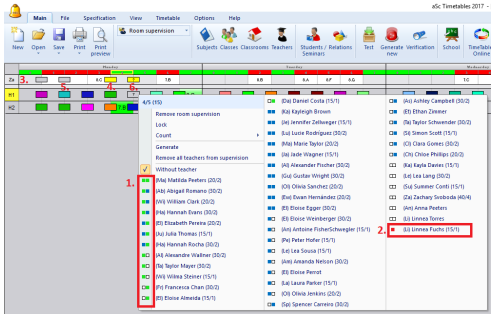
You can add supervision time by clicking on desired position. You can add supervision during break time between lessons 1 or during ordinary lesson time 2.

Initially, there will be no teacher assigned for supervision, so it will be shown as grey square with question mark in it 3. After you will assign teacher to supervision time, it will be shown as square with teachers color 4.

Next step is to assign teachers to supervision times: 29.2 Choosing teachers for room supervision.

29.2 Choosing teachers for room supervision.

You can choose teacher for room supervision by clicking on supervision time in "Room supervision" view (menu View/Choose/Room supervision):



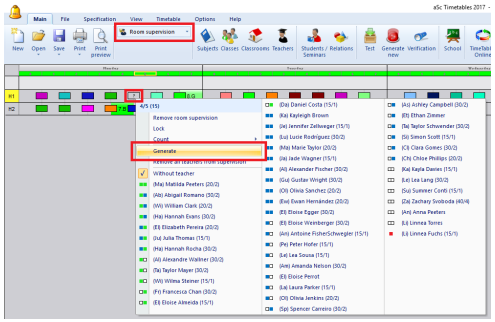
Popup menu will show all teachers available for supervision during this time. Teachers are sorted, so that best teachers to do supervision on this time are shown first. Colored squares 1 give you information about teacher's lessons before and after this supervision time. Green color means that teacher is teaching in nearby classroom, blue square that he is teaching in some other classroom. Left square is for lesson before and right square for lesson after. Red square 2 means that teacher is doing supervision in some other room at this time. Numbers after teacher's name show how much supervision has this teacher already assigned (minutes/count).

When you move mouse over teachers in this popup menu, you will see teacher's timetable in preview rows area 3. This timetable shows in which classroom is teacher teaching. It also shows when is teacher doing supervision in this room 4, in some other room 5, and position where you are currently assigning supervision 6.

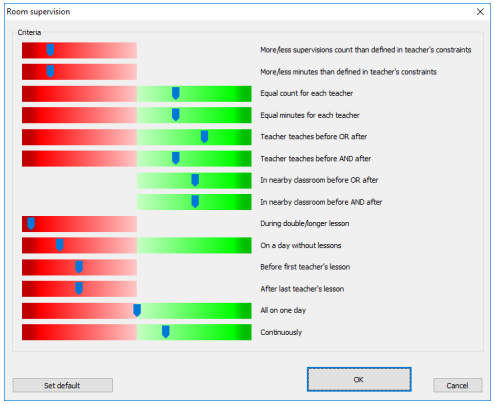
See also:
29.3 Generate room supervision

29.3 Generate room supervision

Program contains a simple generator for room supervisions. You can start generator by right-clicking anywhere in Room supervision view. Just choose "Generate" from popup menu:



Generator tries to optimize timetable according to the criteria. Just before the generation you can check the weight of each criterion:



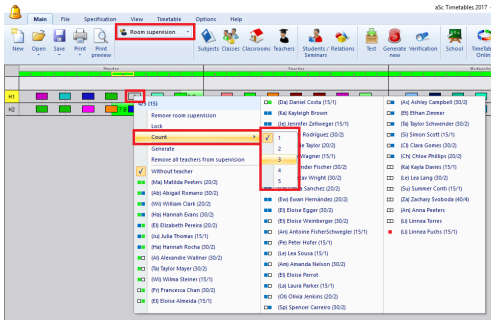
Red part means that you do not want the situation happen, green on the other hand means that such a situation is preferable.

A good idea is to check the generated duties in the teacher's view. If you find something you do not like, just change the criteria accordingly and generate new supervisions.

See also:
29.5 Can I define max/min supervisions for some teachers?

29.4 Is it possible to have two teachers supervising one room?

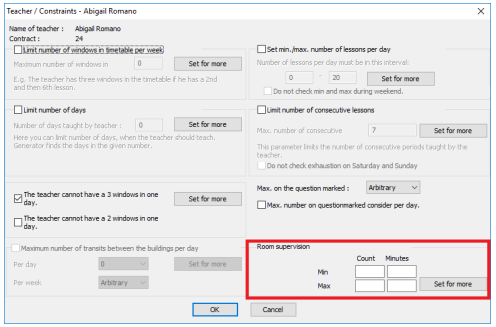
Yes. You can define the number of teachers needed for one duty:



Please note that you can specify this different for each duty. For example the room requires two teachers in the morning breaks but in the afternoon only one is needed.

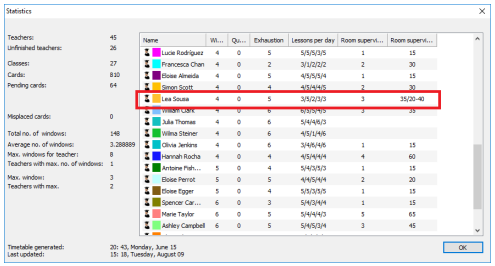
29.5 Can I define max/min supervisions for some teachers?

It is also possible to define limits for supervision for certain teachers in menu Specification/Teachers/Details/Room supervision:



You can limit count or total minutes of supervision (or both).
If you do not want to limit teacher, just leave these fields blank.

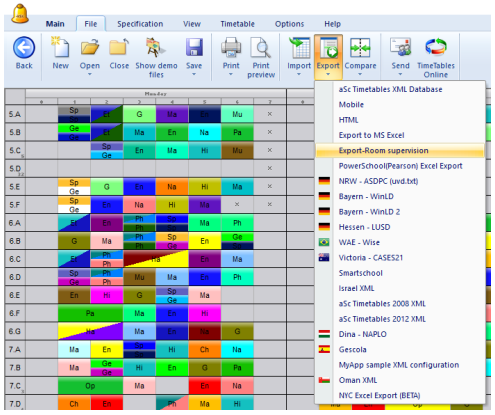
In menu TimeTable/Statistics, you can check the actual values along with min-max:



29.6 How can I export/print the room supervision?

You can print the supervisions in the timetables of each teacher or classroom: [27.19 How to print room supervision in teacher's and classroom's timetable?]

You can also export the supervisions into Excel if you need some special layout. Just use menu File/Export/Export Room supervisions



The supervisions are exported into excel template located in:
c: imetables emplateexcelexport oom_supervisions_template.xml

If you wish, you can modify this template and save it under new nameroom_supervisions.xml - without the "_template" in the same directory.

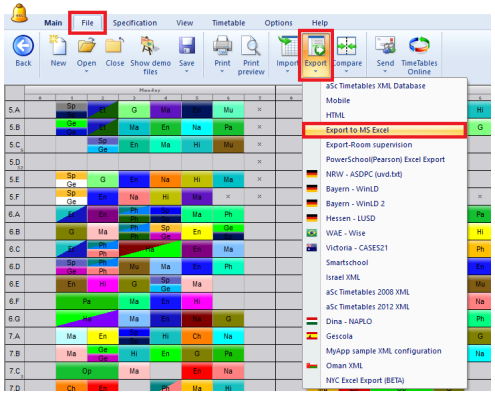
For the next exports the software will use your modified template.

30 Exporting/Publishing

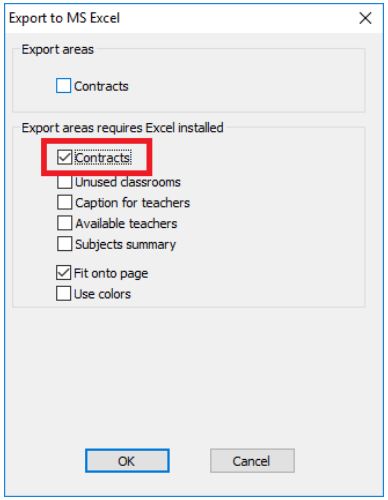
30.1 Can I export the lessons, teachers, subjects to MS Excel?

You can export the data you have inputted to MS Excel.

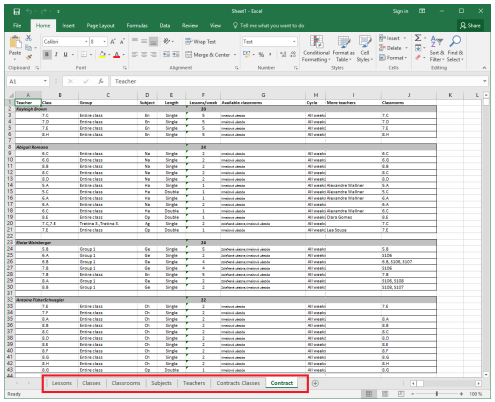
Choose menu File/Export/Export to MS Excel:



The following dialog appears. You can select what you want to be exported:



The most usefull is probably to export contracts. This export all the data into several sheets for each list. Please note that there are several sheets:



Notes:
- you can import these exports back to aSc TimeTables. Check this article [31.1 Importing from Clipboard (MS Excel)]

30.2 Export to XML

This topic is for IT personnel of your school. It requires basic software programming skills.

Please see this topic for simpler way of exporting data from aSc Timetables:
[30.1 Can I export the lessons, teachers, subjects to MS Excel?]

See also:
[30.3 Export limited to max 10 cards/lessons]
[31.3 Import from XML]
[Integration with SIS systems]

aSc Timetables can export data into "aSc Timetables XML" file. There are 3 types of export

1) Default export - exports only basic data
2) Configured export - here you can configure what will be exported.
3) Combined import/export file.

Default export
You can do default XML export from aSc Timetables by invoking command menu - File - Export - aSc Timetables 2012 XML. Select destination for export and click OK. Program will export timetable data in default data structure. This default data structure is similar to internal structure of aSc Timetables. It contains only a basic data. Also all ids used in this export are just **Random internal IDs**. These ids may change over the lifetime of timetable (they are not persistent, they can change e.g. when users add/remove some objects from

timetable or change their values).

To get some more useful export, you need to use configured export:

Configured export
For configured export, you need **XML export configuration file**. This file contains description of data structure in which you want to get data exported from aSc Timetables. It can also include your "idprefix:" option, so you will get **your ids** exported instead of internal ids (if the data were originally imported from your system).

Export configuration files are stored in C:/TimeTables/template/xmlexport directory. To invoke configured export, go to menu - File - Export - Name of your export (displayname).

You can find sample export configuration file here:

C:/TimeTables/template/xmlexport/sample.xml

This is just a sample. You can choose any tables/columns you wish. Don t forget to configure idprefix option (if you need to get your ids). Also fill displayname (=name of menu item in aSc Timetables export menu) and displaycountries (=comma separated list of Internet country codes). Rename the file to program_cc.xml , where program is name of your software and cc is country code of your country. When you have this file finished, email it to us and we will include it in standard installation of aSc Timetables.

Note: XML export configuration file is something like "blank database". It contains only tables and column definitions, but usually there is no data in these tables.

Please see 31.3 Import from XML on how to enhance XML file with new tables/columns.

Creating combined XML import + XML export configuration file
It is also possible to combine XML import with XML export. This might be useful e.g. if user is required to input subjects/teachers/classes in your system, but he inputs the lessons in aSc Timetables. In this case you don't need to export subjects/teachers/classes from aSc Timetables. You need just to link subjects/teachers/classes in aSc Timetables to corresponding objects in your system. But you need to export lessons.

You can find instruction how to implement this here.

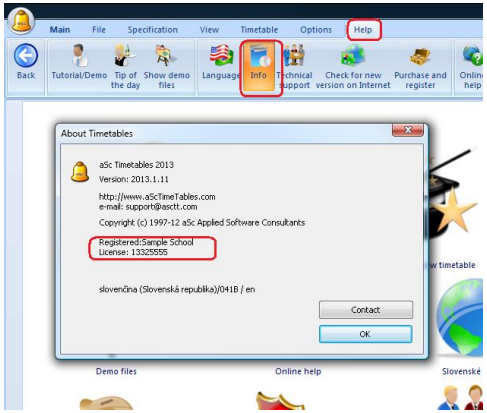
If you have some questions regarding XML import/export, please write to support@asc.sk.

30.3 Export limited to max 10 cards/lessons

In some export functions (e.g. Export to XML), there is a limit of maximum 10 cards or 10 lessons. To bypass this limit, you will need special computer registration code. If you are registered user of aSc Timetables, you can get this code for free. You can ask for this code via email to support@asc.sk. Please provide us with following data:

1) Your current registration name
2) Your computer license

(You can find both values in menu - Help - Info).



You will have to register program with new registration code. You can do this in menu - Help - Purchase and Register - Register.

Note: New code is valid only for single computer.

31 Importing

31.1 Importing from Clipboard (MS Excel)

Import from clipboard is useful tool which you can use to import your data from almost any other program.

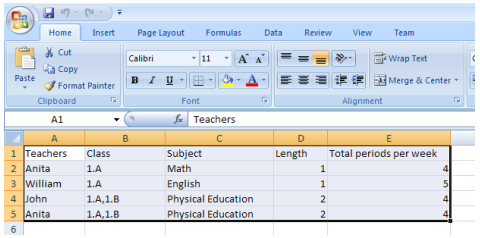
These steps will describe how to transfer data from MS Excel but same method can be used with other programs too.

(If you are building student based timetable check this article:
31.5 Import sections from clipboard(Excel))

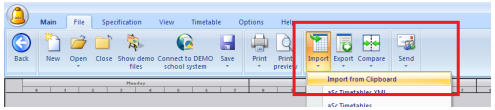
In this article we will show how to import data from this excel file into aSc TimeTables. Please note that this file contains all the information, your file may contain only subjects, or only teachers.

1. Open aSc TimeTables and create a blank document.

2. In MS Excel select the first sheet with classes and copy in to the clipboard(CTRL-C or menu edit/Copy)

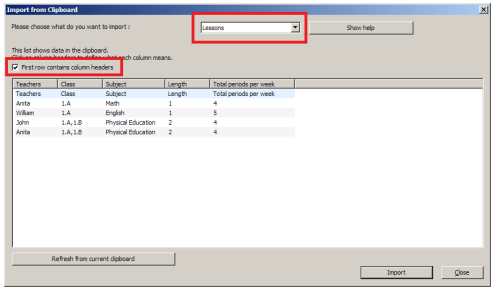


3. Switch to the TimeTables and choose menu File/Import/Import from Clipboard



4. Dialog shows up that shows the selected data in the list. If the list is empty then you have not copied the data into cliboard so return to Excel and copy them as in step 2.

5. Select 'Lessons' in the upper combobox, because we want to import the lessons first.



6. Check the checkbox "First row contains column headers" or click on each column header and specify what the column means.

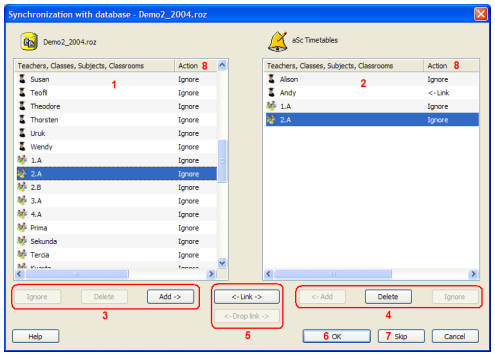
7. Once you have specified a meaning for each column, click the buttom 'Import'.

Note that the software will create also teachers, classes, subjects if they are not yet in the timetable.
Alternativelly you can use the same steps as described above and import teachers or classes before lessons. This way you will be able to specify name and also short name for each object. Then later when importing lessons the software will not create new teachers, but will use the onces you imported previously.

31.2 Synchronization with database

aSc Timetables can synchronize (import or export) its data with database of some partner school administration software (or other timetable files). Please contact us at info@asc.sk if your school administration software can not communicate with aSc Timetables.

Following dialog may be displayed during synchronization of aSc Timetables data with database:



Note: This dialog might be shown several times during synchronization for different object types (e.g. for teachers, students, groups, ...)

Dialog shows differences between data (teachers, classes, etc...) in aSc Timetables and database. Left list 1 shows data in database that is not in aSc Timetables, or that is in aSc Timetables, but is somehow different (e.g. different name, short name, etc...). Right list 2 shows data that is only in aSc Timetables, or that is different in aSc Timetables than in database. Your task here is to review or change actions 8 for each row in both lists. You can do this by clicking on buttons below. Buttons 3 will change action in database list 1 and buttons 4 in aSc Timetables list 2. Buttons 5 apply for both lists (you need to select one object in each list).

Here are meanings of various actions.

Add - This action will add object to other side (e.g. add new teacher from database to aSc Timetables, or vice-versa).
Delete - This action will remove selected object (e.g. remove some obsolete classroom).
Ignore - Do nothing with this object.

Link - This is special action tells that selected object in list 1 is the same as selected object in list 2. This will link both objects together.

Note: Some actions might be unvailable in certaing situations. For example if this dialog is shown during some import, you will not be able to fill "Delete" action in list 1, because import is not allowed to modify database.

By default, program will pre-fill following actions:
"Link" for object for which it has found corresponding object on other side (based on name or internal database identifier).
"Add" for all other objects in database and "Ignore" for rest of objects in aSc Timetables.

When you are finished with filling of actions, click OK 6 and program will carry these actions for you. You may also click on "Skip" 7 to skip this synchronization step and proceed with other object type (e.g. if you wish to import only lessons, click skip until you get to list of lessons).

31.3 Import from XML

This topic is for IT personnel of your school. It requires basic software programming skills.

Please see this topic for simpler way of importing data into aSc Timetables:
31.1 Importing from Clipboard (MS Excel)

aSc Timetables can import data from "aSc Timetables XML" file. You need to write your data into this format. There is a sample XML import file included in installation of aSc Timetables:

c:\TimeTables\template\Import Samples\XML\import_basicdata.xml

This XML file is quite simple and contains import of just very basic data about classes, subjects, teaches and classrooms. It is a good start with implementing export from you school's system into this format.

Note: To create new timetable file from XML data, first click on "Create new timetable" and then go to menu - File - Import - aSc

Timetables XML.

Note2: you need to replace "MyApp" in first row with name of your system (use only letters/spaces).

It is possible to enhance this import in two ways:

1) You can add new columns to existing tables in XML file
2) You can also add new tables to import some other data (e.g. lessons).

Adding new columns into XML file
As an example, we can enhance XML import with class teachers for classes.

In documentation (see link at bottom) you can find that column for class teachers is in table "classes" and it is called "teacherid". We have to add "teacherid" to list of columns in attribute *columns="id,name"* of XML node "classes". Also for each class we need to add *teacherid="xxx"* attribute. So the resulting XML might look like this (only classes part is shown here):

```
<classes options="" columns="id,name,teacherid">
  <class id="1" name="5.A" short="5.A" teacherid="1"/>
  <class id="2" name="5.B" short="5.B" teacherid="2"/>
</classes>
```

This way you can enhance import with any number of columns you need (e.g. colors for teachers, gender, time-off, etc...). Full list of supported columns can be found in documentation.

Note: It is also possible to import up to 3 custom fields for teachers, classes, subjects and classrooms. In this case you have to also add name of custom fields to attribute *options=""*. Example:

```
<teachers options="customfield1:Email" columns="id,name,short">
  <teacher id="1" name="Bacova" short="Bc" customfield1="bacova@myschool.net"/>
  <teacher id="2" name="Belicova" short="Bl" customfield1="belicova@myschool.net" />
  <teacher id="3" name="Benkova" short="Be" customfield1="benkova@myschool.net" />
</teachers>
```

Adding new tables into XML file
As an example, we can enhance XML file with import of lessons.

In documentation (see link at bottom) you can find that there are several tables for this purpose. We will choose "classsubjects" table and import classes' subjects, their count per week and teacher. For this purpose, we have to add this section into XML:

```
<classsubjects options="" columns="classid,subjectid,periodsperweek,teacherid">
  <classsubject classid="1" subjectid="1" periodsperweek="5" teacherid="1"/>
  <classsubject classid="1" subjectid="2" periodsperweek="3" teacherid="2"/>
  <classsubject classid="2" subjectid="1" periodsperweek="5" teacherid="1"/>
  <classsubject classid="2" subjectid="3" periodsperweek="4" teacherid="3"/>
</classsubjects>
```

This way you can enhance with any number of additional tables from list of all possible tables. Full list of supported tables and their columns can be found in documentation.

Documentation
Here you can find complete documentation to XML structure.

Note: If you have some question regarding XML import, please write to support@asc.sk

See also: 30.2 Export to XML

31.4 ID numbers in import/export

What does asterisk in ID number means?
When exporting from aSc Timetables to XML file, you may get exported id numbers looking like *1, *2, *3. These are so called "temporary id numbers". These numbers are assigned during export to objects that do not have any id number assigned yet. They are called "temporary", because they are valid only during one particular export. When you export same timetable next time, you may get different temporary id for the same object exported.

These temporary ids are needed to provide links between rows in tables, e.g. lesson row can link through temporary id in "teacherid" column to table of teachers.

If you want to get some real id numbers exported, you need to configure so called "idprefix".

IDPREFIX - How to specify where aSc Timetables should store your id numbers?
When creating XML you wish to import to aSc Timetables, you must fill in global option "idprefix". Example:

<timetable importtype="database" options="**idprefix:MyApp**" displayname="MyApp sample XML configuration" displaycountries="us">

Id prefix option specifies where should aSc Timetables store your id numbers. In the above example, your id numbers will be

stored in custom field called "MyApp ID".
See also: 3.4 Custom fields

How to specify idprefix during export
When you use default XML export from aSc Timetables, you will always get temporary ids exported (because internally idprefix is set to %TEMPID). To specify idprefix for export, you have to create your own XML export configuration file. These files are stored in directory C:\timetables\template\xmlexport\. You can find example in sample.xml file.

Special idprefix values
%NAME - id is stored in name of object.
%SHORTNAME - id is stored in short name of object.
%NUMBER - id is stored in number field of object.
%TEMPID - do not store id numbers in timetable (this is default).

You can specify idprefix value also per individual tables with "idcf:" table option. E.g. if you want to store id numbers for students in "number" field, simply use:

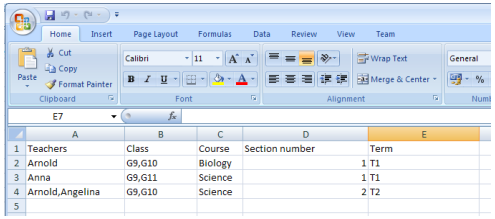
<students options="canadd,idcf:%NUMBER" columns="....">

Note: There is a difference between "idprefix:" and "idcf:" when id is stored in custom field. With "idprefix:MyApp" aSc Timetables will append " ID" to the end, but with "idcf:" you need to use full custom field name: "idcf:MyApp ID".

Documentation
You can find further details here. Check "Types - id", "Database options - idprefix" and "Table options - idcf".

31.5 Import sections from clipboard(Excel)

1. Open your excel file and select the data, then press CTRL-C:

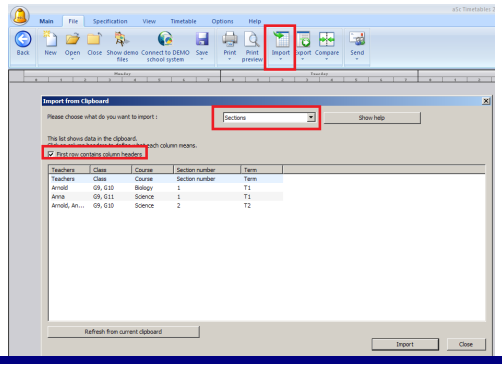


	A	B	C	D	E
1	Teachers	Class	Course	Section number	Term
2	Arnold	G9,G10	Biology	1	T1
3	Anna	G9,G11	Science	1	T1
4	Arnold,Angelina	G9,G10	Science	2	T2
5					

You can use this excel file for tests, or you can add your data into this excel file. If you keep the column names, the software can recognize the columns automatically.

2. Open timetables and create a new documnent. Then go to File/Import/Import from clipboard.

3. Select **"Sections"** and "First row contains..":



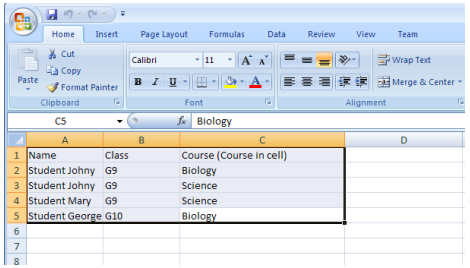
4. Press Import.

Notes:
- if your timetable already contains teachers, courses, classes etc, the import will try to match them. If the corresponding object is not found, the import creates it.
- if you want to import Terms/Weeks/Days, you will need to create these prior to import

See also:
31.6 Import students' course(seminar) selections from clipboard(Excel) - Method 1
31.7 Import students' course(seminar) selections from clipboard(Excel) - Method 2

31.6 Import students' course(seminar) selections from clipboard(Excel) - Method 1

1. Open your excel file and select the data, press CTRL-C:

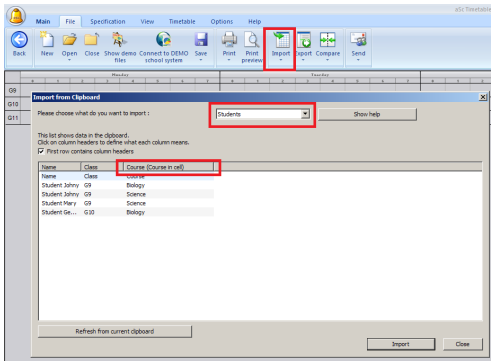


	A	B	C	D
1	Name	Class	Course (Course in cell)	
2	Student Johny	G9	Biology	
3	Student Johny	G9	Science	
4	Student Mary	G9	Science	
5	Student George	G10	Biology	
6				
7				
8				

You can use this excel file for tests, or you can add your data into this excel file. If you keep the column names, the software can recognize the columns automatically.

2. Open timetables and open your timetable file or create a new one. Then go to File/Import/Import from clipboard.

3. Select **"Students"** and "First row contains...":



4. Press Import.

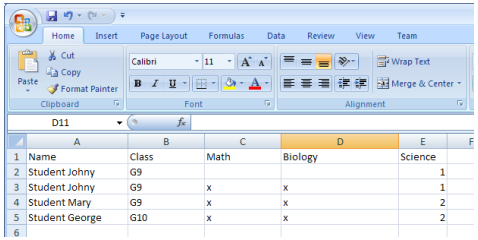
Notes:
- if your timetable already contains students classes, courses the import will try to match them. If the corresponding object is not found, the import creates it.
- you can click on column headers in case your excel has different column names

See also:
31.5 Import sections from clipboard(Excel)
31.7 Import students' course(seminar) selections from clipboard(Excel) - Method 2

31.7 Import students' course(seminar) selections from clipboard(Excel) - Method 2

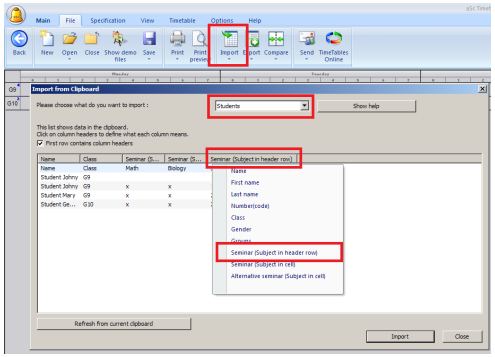
Instead of manually inputting it is possible to import the students and their seminar choices from program MS Excel. Just select your excel data and copy them to the clipboard.

Data for import must be exactly in this format.
Take care to stay in the correct structure of the first three columns (the third column must be empty).
Use the exact names of objects and classes as specified in the program.
If you are using more groups in the seminar, the number 1 and 2 specifies the group of your students in this seminar.



	A	B	C	D	E
1	Name	Class	Math	Biology	Science
2	Student Johny	G9			1
3	Student Johny	G9	x	x	1
4	Student Mary	G9	x	x	2
5	Student George	G10	x	x	2
6					

Then you can press button Import in menu Specification/Seminars:



Notes:

You can click the column header to specify that the column holds student names or class names in case the software hasn't autodetected them correctly.

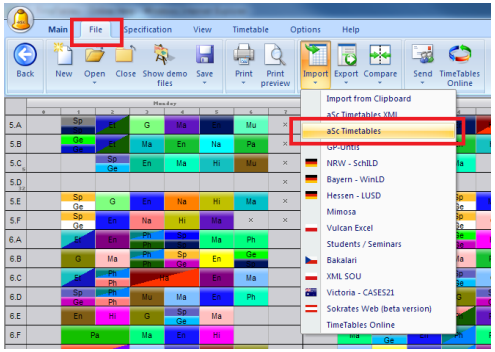
The software will even add subjects, classes in case they are not yet inputted in the software.

You may find a sample table also here.

See also
31.6 Import students' course(seminar) selections from clipboard(Excel) - Method 1
31.5 Import sections from clipboard(Excel)

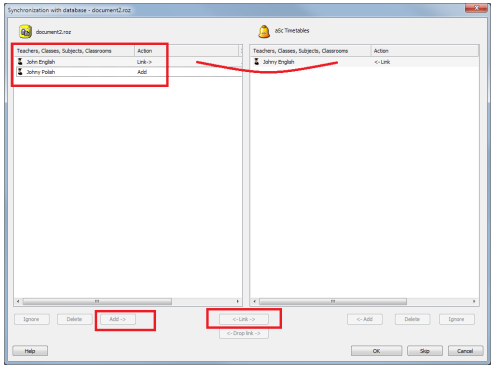
31.8 How to merge two timetable files into one

1. Open the first timetable.
2. Select menu File/Import/aSc TimeTables:



3. Browse for the second file.

Now if the teacher's, subjects are named the same in both files the software will automatically link these. If ther are named differntly, you will be able to specify if a new object shall be added or you can select one of the existing objects to link with:



See also:
31.2 Synchronization with database

32 What's new

32.1 What's new in version 2007

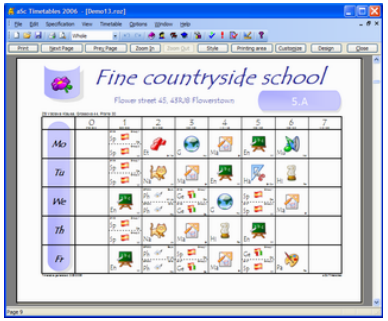
Dear aSc TimeTables users

First of all we would like to thank you for your ongoing support.

The software was already purchased by schools in 98 countries and we are very glad that we still receive many responses, suggestions, praises and comments from all of you.

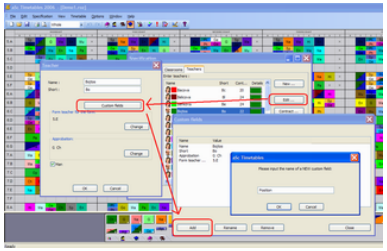
Your trust is very important to us and we try our best to continue improving the software and make your timetabling work easier. This new version is part of this trying and we hope you will like the new features.

Printout designs
The new version now allows you to fully customize your printouts. You can add pictures, your school logo or other necessary text:



Details: 28.1 Print-out designs

Custom fields
Custom fields allow you to define any additional information you might need for your teachers, classes, rooms or even the school. You can for example input and then print teacher's position, consultation hours or similar on the timetables.

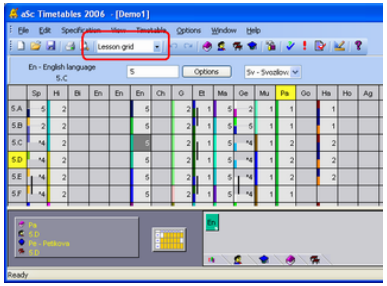


Details: 3.4 Custom fields

Pictures for subjects
Nice feature for smaller children

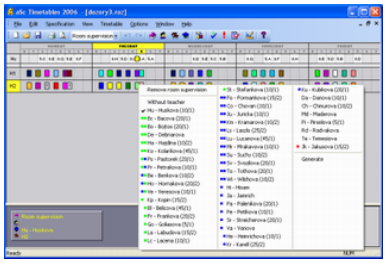
Details: 27.4 Printing pictures of subjects

Lesson Grid
The lesson grid allows you to see all your lessons in one view. You can also create or edit lessons here. For some tasks this feature is extremely helpful.



Details: 12.1 Lesson grid overview

Room supervision
You can now manage the supervisions of some school areas during the breaks between lessons.



Details: 29.1 What is room supervision and how to input it?

Dual core generators
The software now natively supports Dual core processors. Most of the new computers will have them and aSc Timetables can use them. Details: 24.8 Multiprocessor generation (dual-core...)

35% faster generator
We have optimized some generator routines and achieved 35% faster generation times with the new version.

Other improvements
- you can define lessons without teachers
- classrooms can be home classroom for more classes
- many other small bug fixes and improvements
- we also plan another update with new Substitutions features in this summer.

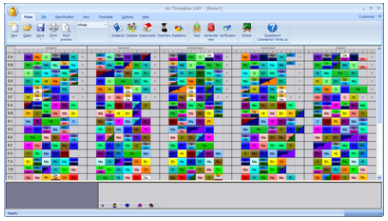
32.2 What's new in version 2008

Dear aSc TimeTables users

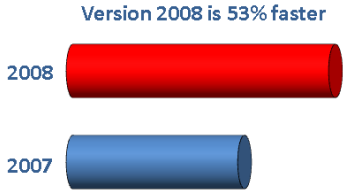
thank you for your support and your interest in our software. aSc TimeTables are now used in 114 countries and we are very glad to receive many praises. We are also grateful for your suggestions as they are necessary for further improvements.

So here is the list of this year's additions:

1. User interface.
The new version is now nicer, but more importantly it shall be easier to use. We tried to minimize the number of clicks so that you can input and create your timetable faster:

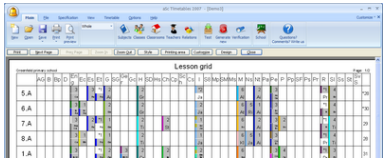


2. Generator
Over the past year we have generated literally millions of schedules and measured the impact of many algorithm improvements on schedules from different countries. As a result the generator is now 53% faster.



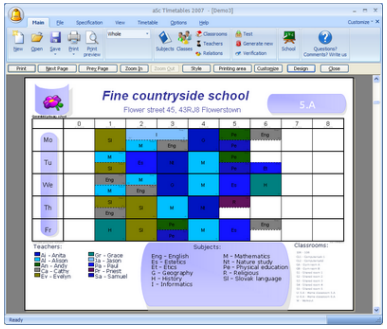
3. Dual core and Quad core generator.
Since dual core PC's are more and more available we have checked and fine tuned the generator so that it fully utilizes your computer.

4. Printouts
It is now possible to **print the lesson grid**:



See: 26.10 How to print lessongrid?

Also you can **print legends** below the timetables:



These legends can show the list of subjects, teachers or classrooms used in the timetable. They are fully customizable. See:
28.3 Print legends below timetables

5. Imports and exports
The software now features simplified XML import/export. This allows you or the company that supplied you with school management system to easily transfer data to aSc TimeTables. Or to transfer the created timetable back to the school management system. See:
31.3 Import from XML
30.2 Export to XML

Other notable additions:
Possibility to change line widths in printouts. 27.6 How can I set the width of the lines?
Improved import of students/seminars
Classroom capacities and group sizes. 8.8 Classroom capacitiesNew advanced card relationshipsLesson grid now supports more subjects (on more pages)Related timetables now show also classroomsAnd as usual many more small improvements.

see also:
32.1 What's new in version 2007
and

32.3 What s new in version 2009

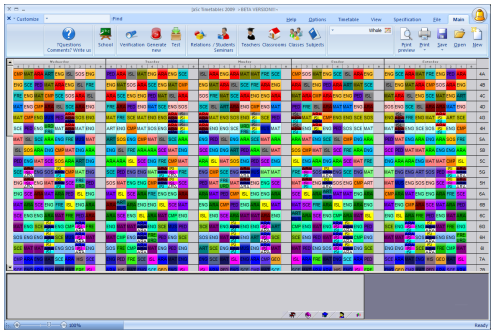
Full support for student based timetables
The timetable can handle all the tasks needed to build the timetables based on students.

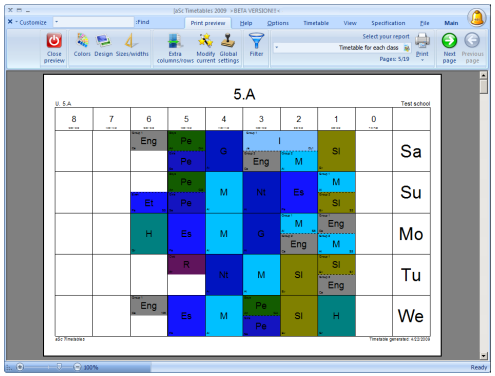
The previous version already supported a possibility to input student and their picks. However this new version greatly extends these possibilities. You can also input course priorities, alternate, optional courses etc.

So now the software shall help even Universities, US and Canada High schools and all schools that have whole or part of their timetable build up from students picks, usually in higher grades.

There are now two version is the software. Standard and PRO. The PRO version has extended generator that can schedule individual students between different sections of the same course during the generation.

Right to left in both application and printouts
We have run through the software and made it right to left friendly both on screen and on printouts.



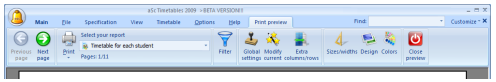


Day A/Day B timetables
Lesson now not only can flow between terms and weeks, it is also possible to specify that a lesson is on the same position each day, a timetable can be the same on Mon.Wed,Fri etc.

Support for Terms
The timetable now supports possibility to define higher level structure of your school year. For example you can create 4 terms. Then for each lesson you will be able to say in which terms it can take place. So you can define a lesson that has to be in Term1 and Term 2, while another lesson has to be in Term1 or Term 2 or Term3.

Improved support for weekly timetables
You can create weekly timetables and the software now allows you to more precisely specify when each lesson shall take place. If you for example say certain lesson shall be on 1st OR 2nd week, the generator can decide this for you during the generation Note: you can freely combine terms and weeks. So you can have 4 terms timetable and each term can consist of Week A/Week B.

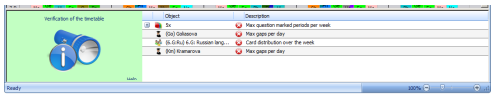
New printout toolbar & functions
The print preview section has changed, shall be now more straightforward to customize your printouts. This allow you to quickly define colors, sizes of timetables and new features like Extra columns and headers that can provide your custom information for each row/column in your timetable



More complex printouts and extended customization
It is now possible to change the layout of your timetable printouts. You can freely decide if periods shall be in rows, days in columns, or terms in columns and periods in rows. If you want a separate paper for each week, or that weeks shall be merged into one paper.

Improved verification

The verification now groups the items in case there are many similar problems. You can also sort by teacher/class.

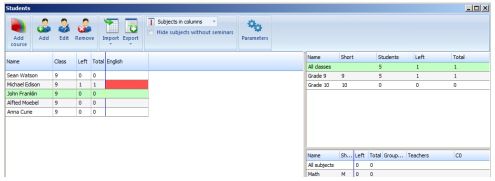


Constrains summary

A new function shows you all the constraints you have inputted so far and that the generator shall maintain during the generation

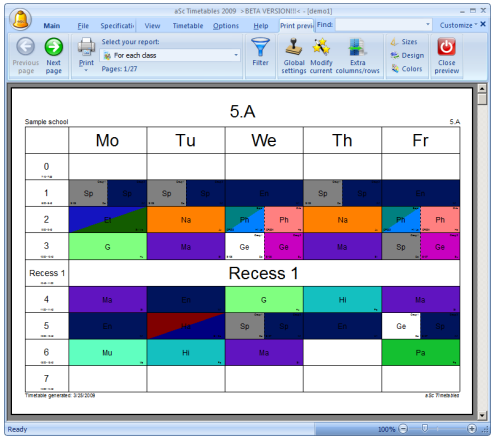
New window for inputting students and their picks

The window for inputting student s picks is now reorganized, several features shall allow you for faster input manage the student s selections.



Renaming periods

You can now rename your periods to your liking and also you can create special breaks that will be then printed into the timetable printouts:



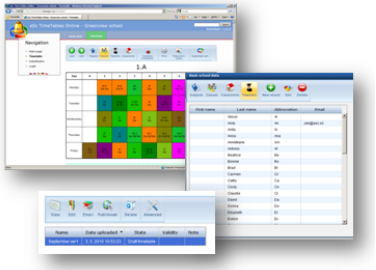
Other improvenets

Like lessons that can be during lunch. new cardrelationships etc. We have also added smaller improvements into UI wherever we though it will make your work easier.

32.4 What's new in version 2010

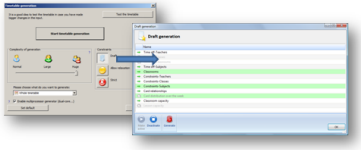
Timetables online

Timetables online is a web-based extension of the timetabling application. It offers several features that will help you with sharing the timetables, online backups, teachers daily plans, publishing substitution information and more. Everything is secured, hosted on aSc Servers, so that you do not need to maintain your web-server to get these new features.



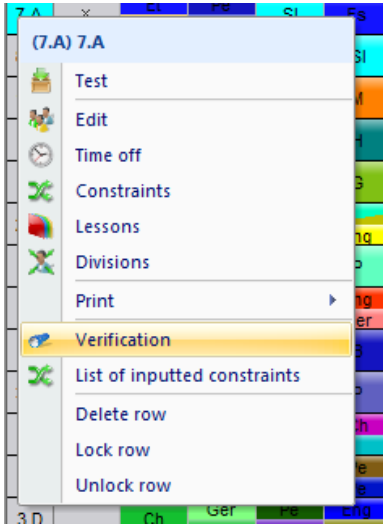
For a complete description please check this article:

New generation mode - Draft



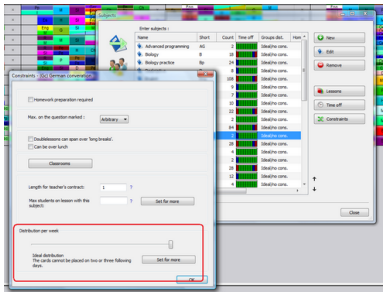
A new generation mode called 'draft' has been added. This can help you in early stages of timetable generation. It allows you to turn off or on whole groups of constraints and try to generate the draft timetable.
23.5 Generate draft timetable

Context verification and constraints



You can now select one or more objects, for example a few classes and display only the problems in the timetable related to the selected classes. Same for teachers, subjects etc. Similar function was added to display the constraints the software is checking for each object.
25.5 Verify just one class/teachers/subject

Distribution per week/per two weeks



We have extended the card distribution per

week options. For each subject you can now specify the default behavior.
Of course you can still input the exact numbers on how many days/how many times per day, by using the card-relationships, however the new default values are much easier to input and shall cover the most situations.
16.13 Modifying the default card distribution per week for one subject

Backup/Auto-save
A new backup feature has been added. Whenever you save your file, a copy is saved to local backup storage. Also autosave now backups your work every 30 minutes. You can recover these files in case you accidentally delete your original files.
33.4 Local backup

Note: the timetables online also allows you to save documents to online storage hosted by aSc:

A new advanced card-relationship options
New "Apply to" options have been added "Apply to classrooms" a and "Apply to grades". So you can now apply constraints to all classes from one grade or to specify e.g that certain lesson can be just two afternoons per week in Media room and many similar
17.8 Apply conditions to whole grades

Improved export to HTML/Flash
The export to Flash have been extended, now the whole export is in Flash, we are have also polished the behavior in all current web-browsers. Also please remember that the new Timetables online allows you to publish the timetable to servers hosted by aSc in both Flash and pure HTML. You do not need to have and maintain your web-server or to deal with ftp/upload of the exports. This is done automatically.

Export of rooms supervisions
You can now export the supervisions into customizabled excel document:
29.6 How can I export/print the room supervision?

Password protection
You can now save your timetables protected with password.

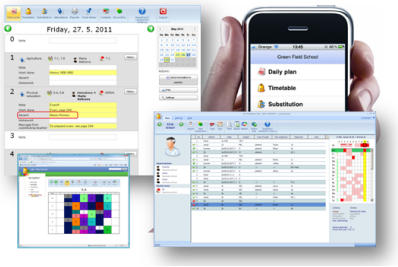
Other smaller improvements
Besides the above, we have added other impovements like new advanced cardrelationships, grades, better import of student choices, customizabled export of students in seminars and more

Substitutions:
Change lesson
It is now possible to change any lesson in the substitutions or split it into several sections and do the substitution on these.

Integration with Timetables online
The substitution is fully integrated with timetables online, you can publish the daily substitution for online viewing, the changes are merged into teachers daily timetables/plans, you can send emails/SMS to the teachers doing substitutions.

32.5 What's new in version 2012

First of all we would like to thank all the schools using the software for the ongoing trust and feedback we receive. The software is now used in over 150 countries at around 100,000 schools.



We are also glad that many schools are already actively using the TimeTables online feature we have added last year.

Since December it is possible to view TimeTables published on TimeTables online also on iPhones/Androids. It is also possible to input the daily plans/attendance directly from your smart phone.

This year the main changes are focused on the Substitution(Coverage) module, but there are new things in both Timetables and Timetables Online as well. So let s start with Timetables:

What s new in aSc TimeTables 2012

Faster classrooms assignment.
It was possible also before, but now there is direct way to specify that some rooms are used by certain subjects or teachers:
8.4 How can I specify teachers home classrooms?
8.3 How can I specify default (usual) classrooms for certain subject?

Afternoon lessons
It is possible to specify that some lessons can be in the afternoon, means they can be outside of the regular teaching block. This allows the software to put them in the positions that will create gaps for students, you can of course limit how long gaps do you tolerate.
16.16 How can I define lessons that can be outside teaching block(in the afternoon)?

TimeTable testing
Testing the timetable now supports also testing of individual students. So the test can now pinpoint if there are some fundamental problems with picks of certain student. The testing was also made faster in some cases.

The generator for the student based timetables was improved.
The student based generator works like before, but after it finishes it also automatically tries to improve the result after the generation.
We have also fixed problems that made the generation sometimes slower on some

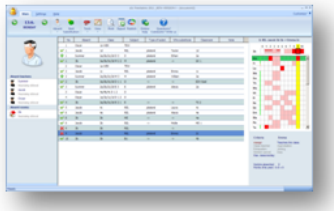
dualcore notebooks.

Lesson capacities
Lesson capacities and student counts can now be displayed on the cards, the software also shows visual warning in case you manually cross the capacity.
22.16 How can I display capacities and students counts on the cards?
13.18 What does the stripes on the cards mean?

Displaying courses
The default timetable view now can be changed by specifying your school type. For timetables based on student s picks it can display all courses in one row, or courses in more rows one for each grade.
13.17 What happens when I change school type?

New card relationships
It is possible to specify for example that teacher shall not have more than 3 consecutive lessons, but he/she may have 2 doubles (4 in total) or that group of students must have certain teacher in elective subjects.

What s new in aSc Substitutions 2012
User interface was redesigned
We liked the old interface for its simplicity, but it was now time to move on.



We believe the new interface will provide more smooth operation and still be familiar to all users who were already accustomed to the previous version.

Speed up for bigger schools
While most schools were not affected, there were certain issues that made the software slower in bigger schools. This has been addressed.

Adding a new lessons
It is now possible to create new lesson in the substitutions.

Substitution based on the groups
It is now possible to specify that certain group is missing. Not just the whole class. The software also suggests transfers based on the groups now.

Lesson with multiple teachers/classrooms
If you have lessons with more teachers, it is now possible to specify exactly which teacher will be affected. In general it is still advised to have the lessons defined in the original timetable by the groups, but if you already have timetable with joined lessons, this will make things clearer.

TimeTable assignment overview
New dialog now provides more detailed information about what timetable are you using on which day. You can change the days, weeks, terms here easily. So if your timetable changes a lot over the year, this dialog will be for you.

Print preview customization
- now shows the font sizes on the fly also with number

- you can specify what shall happen if certain text is bigger than his space

What s new aSc TimeTables online 2012

Smartphone support
You can now use IPhone/Androind to view the timetable and substitution information or to input various data directly from your mobile.

Attendance
Attendance can now be inputted both from the web and smartphones. The teacher can input the attendance directly on the lesson, classteacher can approve or disapprove anytime later and school administrator can see statistics for the whole school.

New events:
There is now one unified function called Events that allows you:
Plan exams for students
Teacher can book exam for any class/subject, so that other teachers do not use the same date for important test/exams.
Create new lessons/meetings
You can create one time lesson or event and specify which teachers/classes shall attend it.
Room booking
Teacher can specify he would like to use certain room and if approved the other teachers will see that this room is already occupied.

Better reports
The reporting component now allows for more complicated reports with custom designs.

32.6 What's new in version 2013

As each year, we would like to thank you all our users for the support and interest we receive. There is now hardly a country in the world without aSc TimeTables users.

Mac & Linux version
Yes, aSc TimeTables & aSc Substitutions are now available on Mac and Linux systems. You will soon be able to download the instalation for each platform from our main download page. No emulator or windows license is needed. You can of

course share your timetables between platforms.

Improved generation speed
The software now generates around 10% faster on the dual/quadcore systems due to improvements in the communication between cores.

Room priorities
It is now possible to specify for each lesson the ideal, not-so-best and use-only-in-emergency classrooms. You can exactly specify how many times per week kids can be in the best room, how many times you will tolerate usage of the emergency room:
18.1 Optimizing the room usage for students
There are now a few new rules that allow you to reduce the room usage to save on cleaning or rent the rooms:
18.5 Reducing the room usage

Cardrelationships for groups, subjects, teacher's classes
you can now apply all cardrelationships to groups. So for example you can define cardrelatioships that will only affect girls from 5A.

Simplified Import from Excel/Clipboard
It shall be now much easier to import basic data as well as lessons into the software. If you are importing lessons/seminars, you no longer need to have the timetable with subjects/teachers, the software can import all the data in one step.
31.1 Importing from Clipboard (MS Excel)
also the import of students and selections was simplified:
31.5 Import sections from clipboard(Excel)

Max teachers on one period
You can now define the maximum number of teachers on certain periods to make sure you have enough free teachers free on each period.
15.16 We need two free teachers on each period to make sure we have enough teachers for substitutions

Subjects/courses distribution during the year
You can specify that student has to complete Course A before he can have course B.
19.1 Student has to finish Biology before he can attend Biology practice
Also for the multiweek timetables it is now possible to specify that subject has to be on consecutive 4 weeks.
19.2 Subject has to be in consecutive weeks/terms

Importance of cardrelationships
It is now possible possible to specify the importance also for regular cardrelationships.

Importance of constraints
For some constraints you can set the importance directly when you specifying this constraint. So even if you run the generation with relaxation allowed you can specify that this constraint shall not be relaxed.

Student group changes
If you allow it, the generator can swith the student to different section between terms.

Other small improvements
Note for each cardrelationship
Copy cardrelationship

What's new in aSc Substitutions 2013

Generate the substitutions for one day
You can do the substitutions manually one by one as before or you can let the software to do it for you for the whole day. It follows the substitution criteria you have defined previously.

Change collision
While doing the substitution, you can now directly go to the collision substitution and change it.

Holidays
You can now mark certain days as holidays. The lessons are automatically cancelled.

Adding the timetable
You can now specify the end time when adding timetable.

Points
Points are now calculated by week,month and year and the teacher's base contract can be included.

More situations timetable panel
The software now shows by different color some more situations to help you decide the best teacher for the substitution.

Alternative layout
the alternative layout of the substitution report was changed so that it sorts the lines by the teacher. This makes finding the changes for each teacher easier.

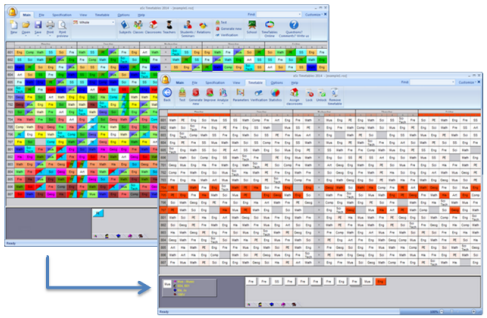
See also:
32.5 What's new in version 2012

32.7 What's new in version 2014

Dear users

Thank you again for the ongoing support and interest in aSc TimeTables.
This year we have focused mainly on helping you to find the possible problems in the timetable input. To help you find if any particular group of lessons or constraints doesn't prevent successful generation. Besides this we have made the generation faster, added new mobile application and new web features. Here is the list of main additions:

1. New feature Analyze by generation



This feature will help you to identify problems in your timetable by showing which cards the generator had the most problems to place. You can use it in case your timetable passes the test, that means the software is able to generate timetables for each individual class, teacher or room but it is not possible to generate the whole timetable.
See more:
23.8 Analyze the timetable by generation

2. New feature Analyze by extended tests

The basic test tries to generate single objects. But although if you can generate a timetable for each teacher alone, you may still not be able to generate a timetable for two teachers together. This new feature tries to help you with finding smaller subsets of your timetable that cannot be generated. It is then easier to find what the actual problem is, because you only deal with small part of your timetable. Also this feature not only finds sets of classes/rooms, but it tries also to eliminate constraints or time-offs. So it can tell you that for example certain two teachers cannot be generated together when you consider their time-offs. You will then know there is no problem with other constraints, just 2 teachers and their timeoffs.
23.9 Analyze the timetable by Extended tests

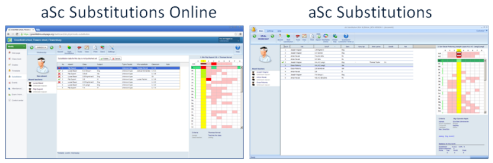
3. New feature Draft generation with relaxation

The draft generation was already present in previous versions, but now it also allows you to say that certain set of constraints can be relaxed instead of just turned on/off.
23.5 Generate draft timetable

4. New feature - Native iPhone/iPad and Android application

This application will be available on the Google/iOS store in all countries soon. This is native application, so when you download timetable you no longer need internet connection to view it. If your school uses substitutions each teacher/student that has smartphone will receive automatic notification when the substitution was changed. You do not need to do anything, just publish the timetables and substitutions.

5. New feature Online Substitutions



The Substitution module has been ported to HTML version that can run in your browser from any place. You just need one password and you can do the substitution from any PC at school or home. Or any tablet that has internet access. The software operates the same way as the standalone aSc Substitutions application, you can decide which one you want to use.
Substitution online

6. EduPage

You can now build a full webpage around your published timetable. In fact nearly 10'000 schools are using EduPage as their main webpage. Not only for showing timetable & substitution, but also to post news, articles, photos. All wrapped in modern design that can be fully customized. Of course if you do not want, you can just use EduPage to publish timetables and put a link on your main school webpage.
How can I setup EduPage

7. Faster generator.

We have made many optimizations to the generation code. The generation is now 20%-100% depending on the timetable.

32.8 What's new in version 2015

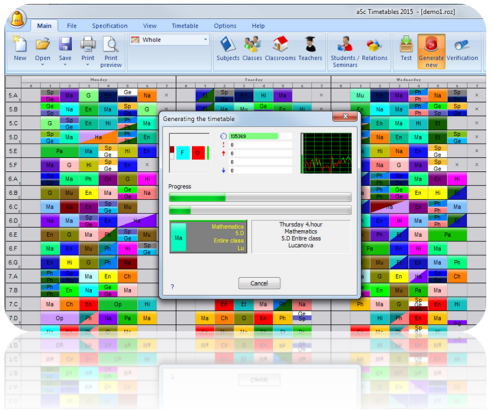
Dear users

Thank you for your continuing interest and great feedback we receive from you. It is important for us to make the software better. The biggest change in this year s release is the new timetable generator:

Self-modifying generator

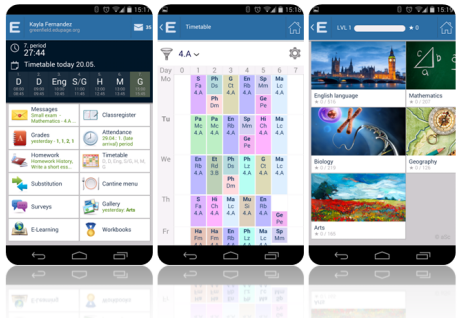
When you start the generation of your timetable the software first checks your data, your lessons, your constraints and then in literally generates a low level processor code that is tailored to your timetable. You heard this right: the program that you download from the internet does not generate timetable. Instead it generates the code that will be the best for your actual timetable and then it runs this code. The result is 2x faster generation times

comparing to previous year release!



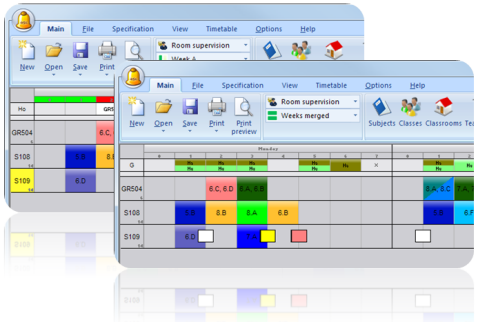
Mobile application was greatly extended

The teachers can now input grades/curriculum into electronic class register. The application works offline, so is great for poor signal classrooms. The students can view homework or exam dates. Parents can view attendance, send electronic absence notes to teachers and much more.



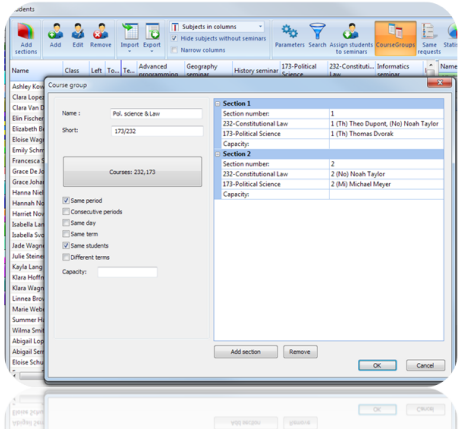
The room supervision can now be defined separately for each week or term

When you define the room supervision while looking at certain week, the software will add room supervision only in that week. If you define it in merged weeks view, the supervision will be defined in all weeks:



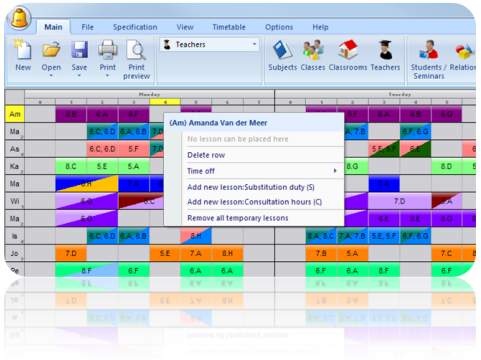
Course groups for students based timetables

New feature course groups lets you group several courses into one entity. So for example when you have 4 students requesting Constitutional law and 2 Students requesting Political science you can tell the software to schedule both with the same teacher into the same room at the same time. Or you can use course groups to make sure certain course pairs are on the same period in different terms. Or tell the software that the groups of students shall be the same for two different courses.



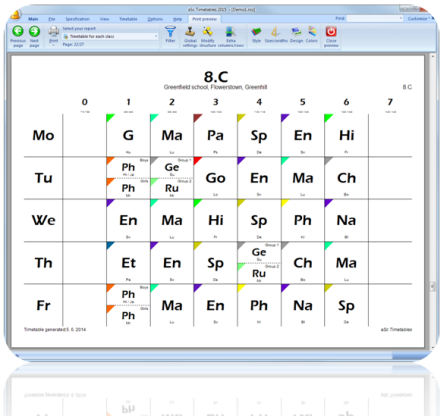
Temporary lessons

You can now add lessons into the timetable by right clicking in teacher s timetable. These lessons are printed, but when you generate new timetable the software can automatically remove them. This feature is ideal if you need to add some extra duties or preparation time to teachers after the generation and their count depends on the actual timetable.



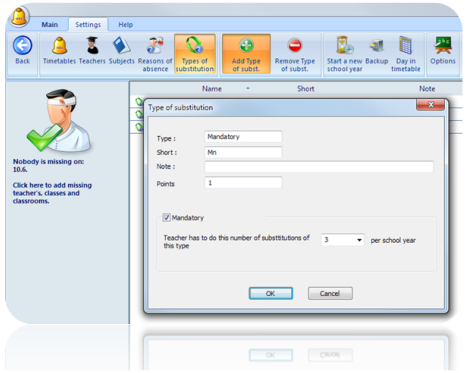
New printout options

You can remove some lines or print the color in little triangle etc.



Mandatory substitutions

You can define that for example each teacher needs to have 20 mandatory substitutions per year. While picking the teachers for substitutions the software shows you the balance for each teacher.



And much more

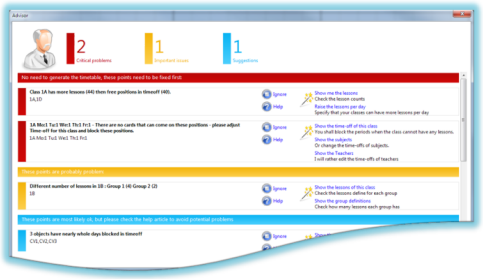
Many subtle improvements to both web and PC/Mac part of the software were added.

We are constantly trying to improve the software so if there is anything do not hesitate to contact us.

32.9 What s new in version 2016

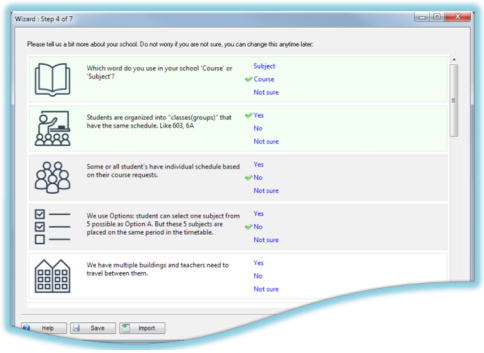
New Advisor

The new advisor will look at your timetable and list the issues we think that might help you move forward. The software will find and warn you about critical issues that need to be fixed before the generation. But the advisor will also display suggestions to avoid potential problems and to show you how to input certain situations.



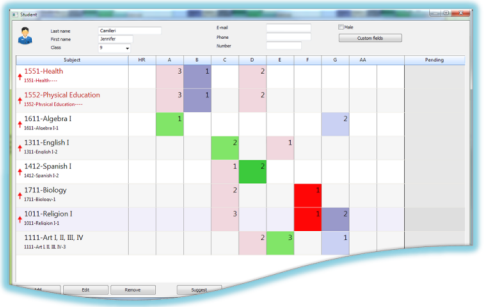
New wizard that helps with the setup of the new timetable

We have added new tabs to the initial wizard to help users setup their schedule. It asks some basic questions about your school, and will then customize the software options to better suit your school.



New dialog for managing student s choices

The revamped dialog will help you in case you want to manually fine-tune individual schedules of students. You can move student to different section or ask the software to provide some suggestions for alternative courses.

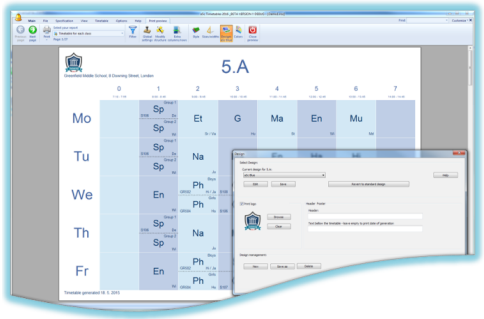


New generator options for student based timetables

We have also added new card relationships that will help further with grouping sections. For example teacher can teach two different subjects at the same lesson if there are very few students signed in, or some kids can have more lessons per week of the same course then others etc.

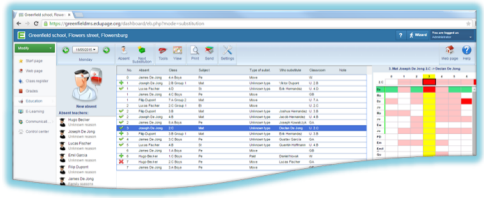
Expanded design possibilities.

It is now possible to define more colors, padding, backgrounds for the printouts and more.



Substitution online application now available

The online substitution application runs in browser, so you can use it from any computer/tablet in your school of from home. Also it allows more people to work at the same time. You can decide which application you want to use either online or PC/MAC based aSc Substitutions, both are available.



New modules in the mobile application

The mobile application now handles teaching plans, lesson preparations, the teachers can assign tests, kids do do online tests directly on their mobiles, it is possible to view payments and more.

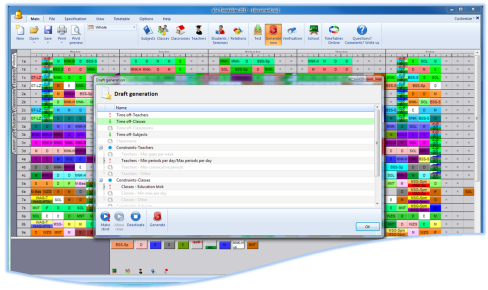
You can download it from:
http://mobile.edupage.org

And as usual many smaller fixes and improvements.

32.10 What s new in version 2017

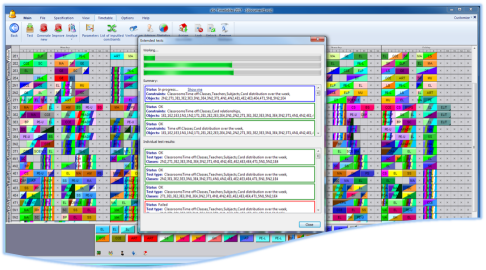
Draft generation

Draft generation was extended to better help you identify possible problems in your timetables. It is now possible to more precisely setup which constraints you want the draft generation to obey, ignore or relax. The constraints for teachers and classes were split into several constraints that can be turned off or on individually.

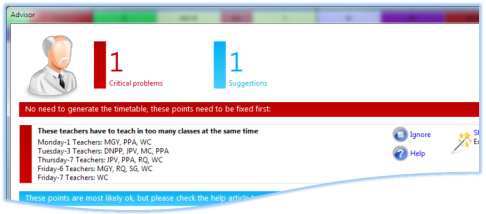


Extended tests

Now the extended tests can run different tests also on selections based on teachers. So if there is a group of several teachers that can create deadlock in your timetable, the extended tests can identify them.



The advisor was improved
The advisor can now detect several new potential problems in your timetable before the actual generation starts. The Advisor is now able to detect situations where you have fewer resources (teachers, rooms) to cover certain parts of the timetable then necessary.

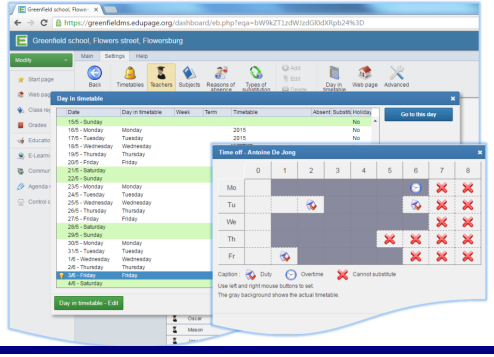


New cardrelationships
A new cardrelationship requested by users was added: you can now specify that selected classes have to have at least one(or more) lessons at the same time. So if your Math teachers want to have lesson where they want to give the same exam to more classes or they want to perhaps mix the students, you can easily satisfy them. Also new apply to section numbers for each subject was added so that you do not need to add one constraint for each subject.

Course groups
The course group can now be defined for two sections of the same subject. So you can specify for example that the same teacher can teach section 1 and section 2 of one seminar at the same time. (when for example some students have 5 lessons per week and other students have just 4 lesson per week of the same subject)

Look and feel
You can now define special screen font color for each object to better distinguish between cards on the screen, select special format for how to print teacher s name and you can now also define padding and alignment for design objects and texts in timetable cells.

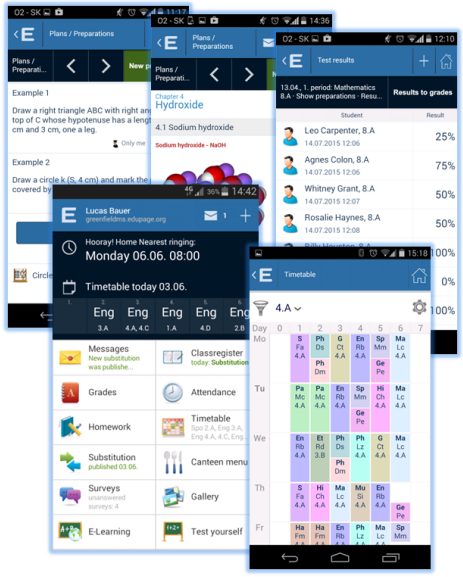
Substitution module online
Over the last year, we have gradually improved the substitution online module. It includes more functions, more customization options and added better integration with events from EduPage.



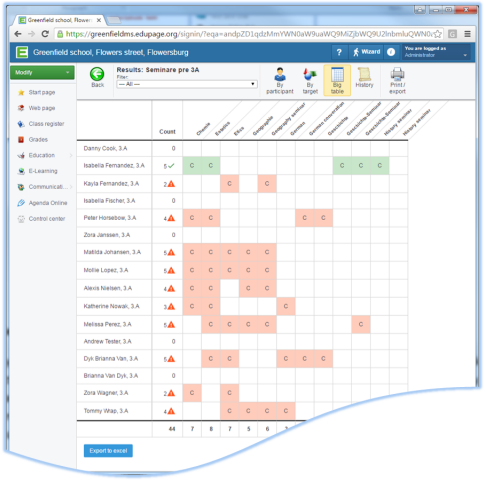
Quick rooms assignment
You can right click on any card/lesson to quickly add/replace its classrooms. Also in view classrooms you can hold Shift and move the card to the row of any room it will allow that lesson to be placed into that room.

Quick changes
Added more Quick changes. For example possibility to change single lessons into double lessons and reverse.

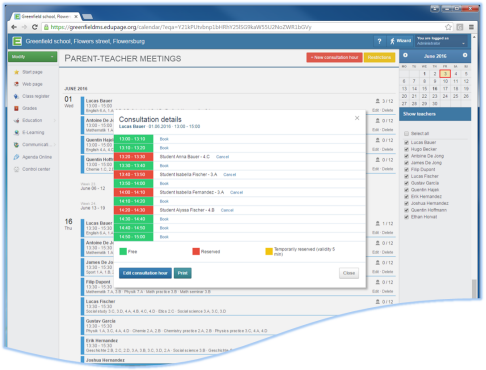
Mobile application
The teachers/students and parents are automatically notified when their timetables or substitution is changed. Also teachers are automatically notified about their substitution duties. The system now sends target push notifications - no need to send SMS or emails.



New EduPage modules:
By purchasing aSc TimeTables you get access to 2 years of EduPage. You can use it to track student s attendance, input curriculum including teaching plans, input student grades and how they progress in various competencies. You can now use EduPage to let your students pick the courses they want to study next year:



Or you can also organize parent teacher meetings where you or your teachers define when they are available and then parent can book a visit. Various rules can be setup to make sure that each parent can talk to the teacher without any long waiting times:



Many small fixed and improvements were added and we will continue in improving the software further, so please feel free to tell us any suggestions or comments.

33 Other

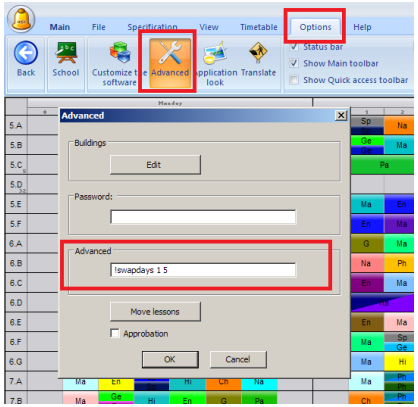
33.1 Swap two days in timetable

Suppose you have finished timetable and you want to swap days Monday and Friday in it. That is you want to move all cards from Monday to Friday and all cards originally on Friday to Monday.

You can do this in menu - Options - Advanced. Type following in Advanced field:

!swapdays 1 5

Then click OK. Program will swap cards between days 1 (Monday) and 5 (Friday). (This command is available from version 2008.6.0)



Note: Program will swap only placed cards between selected days. Cards on other days will be untouched. Also this command will not change any Time-offs.

33.2 Delete all unplaced cards

If you have nearly finished your timetable, but there are still some cards that are not placed in timetable and you want to remove all those cards from timetable, you can do it this way:

Go to menu - Options - Advanced. Type following in Advanced field:

!deletependingcards

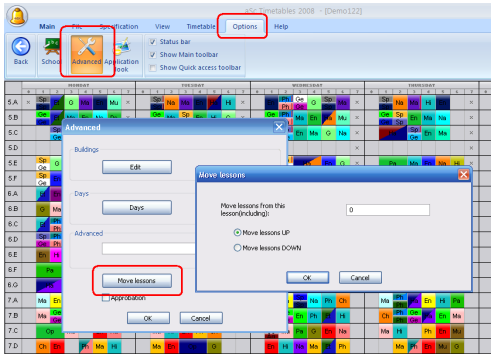
Then click OK. Program will change definitions of lessons for classes and teachers in a way that there will be no unplaced cards, but placed cards will stay in the timetable.

33.3 I need to move all lessons withing the day

You have to go to menu Options/Advanced.

Then click button Move lesson.

A dialog appears where you can input two parameters:



1. Choose if you want to move lessons UP or DOWN. UP means lesson 1 will become 2, 2->3 and so on.

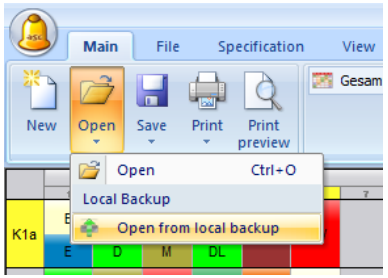
2. Lesson number from which you want to move. If you want to move all lessons type 0. If you type for example 3 then lessons 1 and 2 will stay on the same position. However lessons above 3 will move: 3->4, 4->5 and so on. This will essentially create a free lesson on position 3.

Note: the timeoff information for teachers, subjects and classrooms will also be shifted.

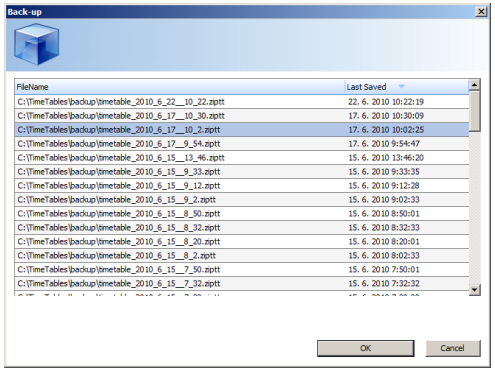
33.4 Local backup

Everytime you save your file and once every 30 mins you are working on some file, the copy of this file is saved to a local backup storage on your PC.

In case you loose your file, or it gets demaged or you accidentally overwrite it with wrong data, you can just go to "File"-"Open from local backup":



and open the file from backup:



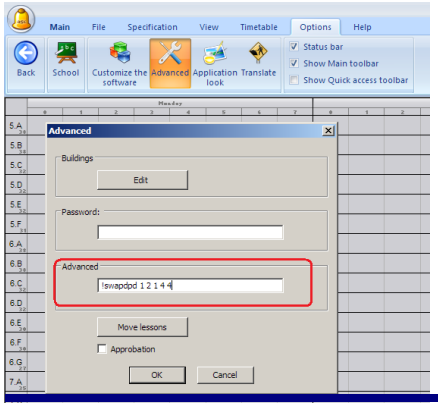
33.5 How can I swap all the lessons from one period to another

You can do this in menu - Options - Advanced. Type following in Advanced field:

!swapdpd 1 2 1 4 4

press OK. This will swap

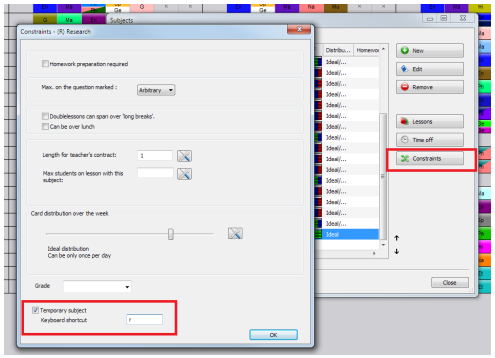
1 - monday(1st day in your timetable)
2 - 2nd period
1 - copy 1 period(2 would copy 2 periods to
4 - 4th day in your timetable
4 - 4th period



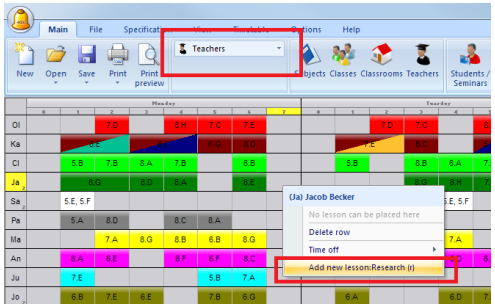
33.6 Temporary subjects - quickly add extra activities for teachers into their schedule

If you have some activities that each teacher shall do and you want to add them AFTER the timetable is created, you can use "temporary subjects".

First define that subject is temporary:



then you can switch to the view "teachers" and right click on position to quickly add this lesson to the teacher's timetable. You can also just point to the position and press the shortcut key defined for this subject.



Notes
- If you know that for example each teacher has to have 5 planning time lessons, then use the approach with "lessons without class" instead:
20.6 Maximum one planning time lesson per day

-The solution with temporary subjects is good when you do not know how many special lessons each teacher will have.

- These subjects are "temporary" so they are deleted when you generate the timetable.