

How to use *TimeTabler* to do ‘What if...?’ investigations

If you or your colleagues are proposing a change to the school’s curriculum or timetable structure then it is often a good idea to do a ‘What if...?’ trial run in *TimeTabler*.

The proposed changes may be to the curriculum, for example:

- changing the number or style of the option blocks in Year 10,
- changing the setting arrangements for Maths in Year 8.

Or they may be changes to the structure of the timetable cycle, for example:

- changing the number of periods in the day,
- changing from a 30-period week to a 50-period fortnight.

Even if the data that you use isn’t the final correct data (eg. due to staff that are yet to be appointed), a ‘What if...?’ investigation can still give you valuable clues about the (im)possibility of the proposed changes.

The evidence from a quick ‘What if...?’ schedule can be of two kinds :

- the number of ‘kick-outs’ that you get (eg. many, or just a few that look as though they could be solved), and
- the nature of the kickouts (eg. if they are mostly from one department, or a pair of linked departments, that would need investigating).

This is discussed further on page 3.

This article leads you through a suggested route.

Note: If you just want to test a single Year (or two) then it is much quicker to





use the method described in: www.timetabler.com/PDFs/HowCanICheckMyDataBatches.pdf

Step 1. Preserving your existing timetable data

You will normally wish to preserve the data for your current timetable, without damaging it, while you experiment with the ‘What if...?’ data.

There is more than one way to do this, as explained below.

Method A is probably the simplest and safest.

- A** (i) Use **Backup**  **Method 1** to make an *external* Backup of your current data on a memory-stick or an external hard-disc or a CD. You can use ‘Verify’ to check it is backed-up correctly, and also:
- (ii) Use **Backup**  **Method 2** to make an *internal* Backup in the Auto-Backup Library on your hard-disk. You can use ‘Verify’ to check it is backed-up correctly.

Using both these methods will keep your data safe, and either of the Backups can be used later to Restore the original data back into *TimeTabler*.

- B** Alternatively, install another copy of *TimeTabler* into another directory (or another machine). Then use the method of A(i) above to make a Backup in the old copy of *TimeTabler*, and then use **FileMenu->TT-Restore** in the new copy of *TimeTabler* to load in that timetable data.

Then both versions have the same data, and you can modify and experiment with one while leaving the other intact ...but make sure that you go into the correct version each time.

- C** Alternatively, you could take a backup (for safety) as in Method A above, and then ‘Clone’ your existing Batches (see Section H26 in the Manual), and then edit and use the Clones in your experiments below (while keeping the originals intact).

Clear the decks:


When you have used Method A or B then ‘clear the decks’ by Deleting all the existing schedules in the data that you are going to use for the ‘What if...?’ investigation.

If you have used Method C then Delete any schedules that you no longer need.

If you have any surplus (unwanted) Batches then Delete them as well.

continued...

Step 2. Setting up the data for the ‘What if...?’ investigation

After doing (A), (B) or (C) above, edit your data as detailed below (see also the latest QuickStart Guide via  on the Basic Data Screen).

Basic Data

1 Basic Data

1. If you are changing the structure of the School Day or Week then edit the values on the **School Structure Screens** (see Section C in your Manual).
2. Make any changes needed on the **Basic Data Screens**, for the names of Subjects, Rooms, Teachers, Classes. See Section C of your Manual.
3. For your part-time staff, check the **Staff Availability Screen** (see sections C15, H3) and ensure it is correct for the new timetable. If you have any floating part-timers, see Section H4 in the Manual.

Activities

2 Activities

4. Enter your **Fixed Points activities** in a single batch. See Section D, and QuickStart Guide step 21. These are (locked) activities that have to occur at fixed pre-determined times of the week. They can include:
 - ‘Work-related learning’ lessons provided by a local college.
 - ‘Joint Sixth Form’ provision of rarer subjects, at times agreed with a local school or college.
 - Joint provision of Diplomas in Key Stage 4, at times agreed with local schools.
 - Provision of a ‘primary’ or ‘project-based’ curriculum in Year 7 if this involves elements that have to occur at fixed times. (If you wish to restrict some activities to certain parts of the day, eg. numeracy to be only in the morning, see Example 12(b) in Section H8.)

If your curriculum has new features, this Batch may be bigger than before, and more restrictive.


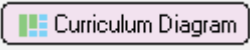
5. Enter the data for all the other Batches (see Section D), or Edit existing batches if this is easier. The Batch for Year 11 can often be obtained by just ‘promoting’ the old Year 10 Batch (see D14). For a discussion of the best ways to build & use batches, click on : <http://www.timetabler.com/SupportCentre/SequenceOfBatches.html>

Preliminary checks of your data

Check & Validate

Apply some of the pre-scheduling checks & analyses that are described in Section D of the Manual. (First make sure that the SuperBatch Screen (Section D20) includes all the relevant Batches.)

The best order is shown below, but only the first two are essential.

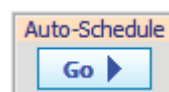
- **The Statistics Screen** (Section D21)  Check that the totals are correct. A value shown in **red** is one that **TimeTabler** thinks is wrong. The **Staff Loading Chart** (D24) is another check of the staffing.
- **The Curriculum Diagram Screen** (Section D22)  Check that the curricular structure for each YearGroup looks correct. For more details about Curriculum Diagrams, click on: <http://www.timetabler.com/SupportCentre/CurriculumDiagram.xls>
- The Combing Chart Screen (Section D25)
This is best done for each individual department (or faculty) initially, and then extended to pairs of departments that have a teacher in common. Serious incursions into the red zone are best investigated and improved at this stage, **before** you start scheduling.
- The Staff Deployment Screen (Section D27)
This will show you how your new arrangements have affected the distribution of the teaching periods in your school. Is the pattern that you intended? Is the Contact Ratio acceptable?
- The Zarraga’s Rule Screen (Section D30)
This could be an important analysis if you are changing the structure of the Lower School curriculum. For more details of Zarraga’s Rule, click on: <http://www.timetabler.com/zarraga>
- The Conflict Matrix Screen (D26) and the Team Combinations Screen (D28) can be useful if you have many large teacher-teams to schedule.

continued...

Step 3. Doing a 'What if...?' schedule

3 Schedule

1. Start a New Schedule (Section E1) and call it something like 'Trial 1'.
Note: if you are changing the structure of your school week, then after setting up the new week in Step 2, do not visit an old schedule before starting this new schedule, because this will re-set the structure.
2. Load in your 'Fixed Points' Batch (only). Assign your Fixed Points activities to the correct times of the week, and ensure that they are Locked in place.
You can do this on the **Visual Builder Screen** (E16).
3. At this stage, if you intend to do several experiments, it is useful to Clone this basic schedule of fixed points (see Section H27) so that you have several copies to use as the starting point without having to re-assign the fixed points each time.
And/or save this state in the AutoBackup Library (page x in your Manual).
4. Load in the next batch of activities (see Section F7).
For a discussion of the best sequence to load the batches, click on :
<http://www.timetabler.com/SupportCentre/SequenceOfBatches.html>
5. Because this is just a 'What if...?' investigation you need only place a few activities interactively ...just enough to give a basic structure. Fixed Points may already have done that.
Thereafter, set the DayBlock Status (see E18) to '4', and click on the Go button:
Set the AutoFit Status (see E19) to '4' or '5' steps. Then Run Fully-Automatic.
6. When that Batch has been scheduled, repeat steps 3 and 4 with the remaining batches.
See also steps 37 – 48 of the QuickStart Guide, and Section F25.



Step 4. Judging what it means

Note: Because most of the work has been done by Auto-Scheduling, the result is unlikely to have the good quality and rhythm that would be obtained if you had done it interactively & carefully.

(You can see the quality by using the reports & displays on the Optimiser Screen, section F24.)

There are 3 main possibilities, A, B, C:

A. No kickouts

In the unlikely event of a 100% solution it means that you have a straightforward timetabling situation, and you can probably afford to develop a more complex curricular structure.

B. Some straightforward kickouts

If you have several 'kickouts', but they look soluble then it would be worth doing another 'What if...?', with a different sequence, to confirm that it looks achievable.

To decide whether the kickouts are soluble, see all the strategies in Section F6 of the Manual or at:
www.timetabler.com/PDFs/SolvingKickouts.pdf

C. Many, or difficult, kickouts

If you have many kickouts then you will need to analyse them (the Log printout, section F10, can help).

- *For example*, do the kickouts occur mostly for one particular **Department** (and if so, can the Combing Chart for that department help you to improve the way that department is staffed?).
Or is it a pair of departments interacting (because they have teachers in common), and so you need to look at the joint Combing Chart?
- *Or*, do the kickouts occur mostly in one **YearGroup** (and if so, can the Curriculum Diagram for that Year be re-structured to give more flexibility?).
- *Or*, can Zarraga's Rule perhaps suggest teacher-exchanges that will give you more flexibility?
- *Or*, it may be mathematically impossible to schedule the proposed new structure with this staffing.
If this is the case then clearly the sooner you find out about it, the better.
This is the value of doing 'What if...?' trial runs with **TimeTabler**.