



Improving Your School's Options

Dear Timetabler,

Timetabling is probably the most important single event in the school year. It has a powerful effect on the life of a school or college, and as the Timetabler you carry a heavy responsibility.

This Booklet, like the others in the series, is designed to help you with specific aspects of timetabling.

An effective timetable is essential for a good school. A school which does not invest in creating a quality timetable will be forever struggling uphill.

These Booklets give you help on specific topics, so you can achieve the best results using our intuitive and smart software.

You have problems? We have solutions! Based on long timetabling expertise.

We are expert in all aspects of timetabling in schools and colleges, and we have been using our expertise to help and support schools for over 40 years in over 80 countries.

Whether you are new to timetabling, or an experienced timetabler; no matter how complicated your school or how complex your timetabling problems, we have **solutions** for you.

What we offer you:

TimeTabler

Easy-to-use and intuitive smart software, used by schools world-wide to schedule their timetables.

TimeTabler can deal with any curricular structure, of any complexity.

It is supported in 12 ways by a friendly and experienced team ...see page 11 for details.

TimeTabler exports your completed timetable to over 40 MIS Admin systems.

Options

An easy-to-use program for analysing and organising your students' Subject Choices (Electives).

It is important to get the highest satisfaction rate for the students, to let them study the subject Choices they have chosen. This improves students' motivation, and Exam results, and it improves relations with parents. And it keeps the cost of staffing the curriculum as low as possible.

StaffCover

This well-known program is designed to help you to streamline the daily business of arranging and publishing Cover for absent staff or special events, as quickly and fairly as possible.

StaffCover links directly into **TimeTabler**, so you do not have to type in your timetable again.

The Timetabler's CookBook

This book is the definitive 'bible' on timetabling, for both new and experienced timetablers.

Help & Support

We provide a wide range of **free** Help & Support. See page 11 for more details.

Happy timetabling!

Chris and Keith Johnson
and the rest of the Team

October ReSolutions Ltd

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White Paper

on

Improving your school's Options

An effective school looks for ways to motivate the students in a variety of ways. One of these ways is to provide a curriculum which allows some choice by way of optional or elective subjects.

A better arrangement of optional subjects can give your students a better motivation ...which can have a very beneficial effect on your school's exam results.

The arrangement of optional subjects has an effect on the school's timetable which controls (and supports, or inhibits) the school's activities, period by period for the school year.

A school which does not take great care to get a quality timetable, with a good rhythm to support the pedagogy, will be forever struggling uphill.

In most British-style secondary schools, the students are allowed some choice in their curriculum for the last three or four years of compulsory schooling. There may be some element of choice earlier (for example in the introduction of a second foreign language), but this White Paper is mainly concerned with the option 'pools' usually offered to students for Years/Grades 9 onwards.

An option 'pool' is a set of subjects or teaching groups which are timetabled to occur simultaneously and in which a student must study one subject.

On the curriculum diagram and the timetable it forms a block, with a team of teachers, teaching simultaneously. In Scotland the block is often called a 'column'; in other countries the subjects may be called 'electives', and the block called an 'elective line'.

In some schools, option blocks may account for 70% of the school week. In other schools there has been a move towards a larger common core and a reduced number of option blocks.

However few schools are likely to remove options entirely and so the problems associated with option blocks and their timetabling remain with us. Option blocks are the main reason for the complexity of UK school timetabling.

In England, schools are working out their best solutions for the E-Bacc or Progress-8; in Scotland, schools are working to resolve the requirements of the 'Curriculum for Excellence'; and each of these involves looking critically at the school's option arrangements.

This White Paper is designed to help schools in this process.

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Option Block structures

The diagrams show examples of the 3 main types of option block structures:

A 'Free Choice' structure (heterogeneous blocks)

block:	1	2	3	4
	Hi	Gg	Hi	Re
	Dr	Ar	Fr	Mu
	Fr	Sp	Tx	Fo
	Te	Bs	IT	Ms

B 'Faculty' structure (homogeneous blocks)

block:	1	2	3	4
	Hi	Fr	Te	Ar
	Hi	Fr	Tx	Dr
	Gg	Sp	Fo	Mu
	Gg	De	IT	Ms
	Humanities	Languages	Technology	Creative

C 'Courses' structure

block:	1	2	3	4
Options as above:				
Foundation Diploma:				
Higher Diploma:				

Each student studies one subject in each block
(except in the 'Sixth Form' Years/Grades 12/13, when a student may have a study period instead).

A 'Free choice' structure (heterogeneous blocks)

In this type of structure, the subjects are arranged so as to try to accommodate the students' requests – the school is trying to provide 'customer satisfaction'.

In Example A shown, the numbers of groups imply that the scheme is being offered to a 'band' of about 90 students (perhaps a half-year group or one-third of a year-group). However the blocks could easily be extended in depth to be applied to a whole year-group, because none of the blocks is likely to demand all the school's resources. (*For example*, none of the blocks shown needs more than one Technology room.)

However there are some disadvantages with this type of option block.

Philosophically, it looks rather odd. *For example*, in block 1: 'History or Drama or French or Technology' presents a strange choice to the student. In conjunction with the other pools, it allows students to select an unbalanced curriculum (*for example*: Drama, Art, PE and Music).

The school must then devise rules, sometimes quite complicated, to ensure that students select a balanced curriculum (*for example*, at least one 'creative' subject, at least one of the 'humanities').

All the choices will need to be checked by staff or, much better, checked by **Options** software that allows you to specify the rules that have to be followed.

When it comes to scheduling these heterogeneous pools, difficulties are likely to arise.

Elsewhere you may wish to timetable some French 'sets' in Year 8 (ie. two or more French groups timetabled to occur 'in parallel', at the same time). This means a group of French teachers must be free to teach Year 8 as a team. This is less likely to happen if you have a heterogeneous structure in Year 10 because the Language groups are dispersed throughout the option blocks and so the French teachers are neither teaching nor free as a team.

If the option blocks are changed from year to year to satisfy the students' choices then the number of timetable conflicts is likely to increase and may limit any setting in the lower school (unless several members of staff teach lower school classes only). The heterogeneous nature of the blocks almost certainly prevents the timetabling of departmental conference periods.

In this context it is essential to remember that it is **teachers** who cause conflicts on the timetable, **not subjects**. Until your curriculum diagram shows staffing as well as subjects, you cannot be sure about where the conflicts will occur.

A further disadvantage of heterogeneous blocks arises in the teaching groups. In Example A on the previous page, there are two groups for French but the groups are in different blocks. This implies that each French group will include the full range of ability of the band. This may lead to a difficult teaching situation. Of course, each French group shown in the diagram could really be two French teaching groups or 'sets'.

Another problem that applies to all blocks (but particularly to 'hetero' pools) is that the period-breakdown of all subjects in the block **must be the same**.

In example A above, French and Technology (block 1) must *both* have single periods or must *both* have Double periods. Neither case is ideal for both subjects.

Summary of heterogeneous blocks

Advantages

- 1 Students' satisfaction rate is high.
- 2 Blocks can be applied across a whole year-group (but see disadvantage 3).

Disadvantages

- 1 Rules and vetting may be needed to ensure a balanced curriculum for each student (this may affect advantage 1).
- 2 Timetabling difficulties: setting in lower school, departmental meetings, block timetabling are limited or may be impossible.
- 3 Blocks may enforce mixed-ability teaching in most or all subjects.

B 'Faculty' structure (homogeneous blocks)

The word 'Faculty' here is not meant to imply that the school must be staffed, administered or accommodated in true faculties; only that similar subjects are grouped together in the curriculum (and thus on the timetable).

Diagram B on page 2 shows a Humanities block, a Languages block, a Technology block and a Creative block.

In this type of structure, the educational philosophy is explicit: subjects within a block have a similar methodology, content or skill. 'French or Spanish' is a valid option and is allowed: 'French or Art' is not. The curriculum diagram forces students to make a balanced choice and no extra rules are needed (although the students' choices still may need to be vetted with a view to career prospects).

With the blocks shown in diagram B, there is no opportunity for a student to take two languages or two humanities. However we shall see on the next page how these can be accommodated with a 'bias' pool.

A disadvantage of homogeneous blocks is that the satisfaction rate for fitting the students' choices is unlikely to be as high as with heterogeneous blocks.

A further disadvantage may arise: most schools will probably not have sufficient resources to timetable homogeneous option blocks across a full year-group (eg. schools may not have the necessary number of Technology rooms).

If homogeneous option blocks are timetabled across half-year groups, then within each block or 'faculty' most schools can offer a range of courses, perhaps aimed at different examination levels and thus reducing the spread of ability within each group.

If it is argued that the 'hump' of the normal distribution curve is the wrong place at which to divide a population, then the blocks and the courses for the two half-years may be identical.

Alternatively, in a large school, the year-group may be divided into three attainment-bands at Key Stage 4 (and of course some bands may be more homogeneous, some more heterogeneous in structure). See also the section on '**Pathways**' on page 6.

The more homogeneous the option blocks, the more likely that the timetable will benefit. If the languages teachers are scheduled as a team to teach a languages block in Year 10, then it is likely that at other times they will be free as a team to teach languages sets in Year 9. Similarly with other departments.

In the same way, there is a greater likelihood that departmental conference periods might be scheduled.

Summary of homogeneous blocks

Advantages

- 1 The blocks force a balanced curriculum.
- 2 Timetabling of sets (in other years) and departmental periods is easier.
- 3 Parallel sets in each 'faculty' can reduce the spread of ability within a group.

Disadvantages

- 1 The students' satisfaction rate is likely to be lower than with 'hetero' pools.
- 2 Homogeneous blocks often cannot be timetabled across a full Year.

This page is mostly taken from Chapter 3 of '**The Timetabler's Cookbook**'.

Full details are given at: www.timetabler.com/book

C 'Courses' structure

Diagram C on page 2 shows a simple 'courses' structure.

This structure may be straightforward to timetable because each group in course A is independent of each group in courses B and C (unless the same teacher or room is involved).

There are disadvantages: the satisfaction rate may be low (because in the simplest case a student choosing course A must study **all** of course A).

As a variation, within each course there may be some option pools of either the homogeneous or heterogeneous type.

Summary of the 'courses' structure

Advantages

- 1 Timetabling may be easier, with fewer problems scheduling lower school.
- 2 They can be applied to a full year-group.

Disadvantages

- 1 The students' satisfaction rate is likely to be lower than with 'hetero' pools.
- 2 The curriculum is likely to be less balanced.
- 3 There may be a wide range of ability within a group unless students are persuaded into certain courses.
- 4 Exam targets for students may be more restricted than in other structures.

So far we have looked at the three types of structure in their 'pure' form.

In practice they are often combined in ways which reduce their individual disadvantages.

D Combinations of homogeneous and heterogeneous pools

There is often a debate about the need for a balanced curriculum. One way of achieving this is to give less choice to the students: increase the compulsory common core of the curriculum to 80% (or more) of the school week and allow only two (or fewer) option blocks, probably of the heterogeneous type.

An alternative which is likely to be more acceptable in most schools, is to adopt a homogeneous pool structure with an addition: since the 'pure' homogeneous blocks do not allow a student to follow his/her special interests by taking two humanities or two languages, we may add one (or two) heterogeneous '**bias**' pools:

block:	1	2	3	4	5
	Hi	Fr	Te	Ar	Gg
	Hi	Fr	Tx	Dr	Sp
	Gg	Sp	Fo	Mu	IT
	Gg	De	IT	Ms	Dr
	Humanities	Languages	Technology	Creative	BIAS

This example would allow students to study two humanities, two languages etc depending on each student's personal bias. Obviously the students' satisfaction rate will depend upon the care with which the bias pool is determined. For this, using Options software is essential.

For a band of less academic students, two bias pools may be more appropriate (for example, blocks 4 and 5 above may be mixed up).

With care in choosing the number of groups and the contents of the bias block, a combination like this can preserve the advantages of both the homogeneous and heterogeneous types.

To decide the composition of any of these option blocks efficiently, it is essential to use **Options** software. See more details on page 8.

Pathways

A school can use Student 'Pathways' to arrange to offer different populations of students a different set of option choices. The different populations may be decided on the basis of attainment (or ability) or on the basis of some other criterion. Here are some examples:

Example 1

This school has 3 option Blocks. The students choose 3 Subjects but because the students are in 4 Pathways the choices for each Pathway are different:

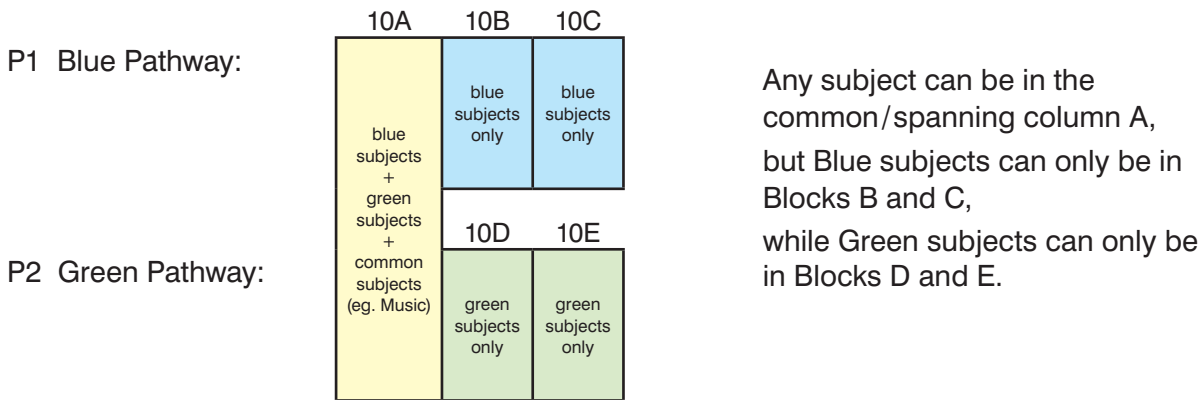
P1	Pathway 1	These students choose 3 GCSE subjects.
P2	Pathway 2	These students choose 2 GCSE subjects + 1 BTEC subject.
P3	Pathway 3	These students choose 1 GCSE subject + 2 BTEC subjects.
P4	Pathway 4	These students choose 3 BTEC subjects.

Example 2

This school has 2 Pathways (called Blue and Green) in Year 10. Each student is either in Blue or in Green, and each chooses 3 Subjects. The Blue students can choose from a list of largely 'academic' subjects. The Green students can choose from a different list, of largely 'vocational' subjects.

But some (minority) subjects appear in both lists.

For example, Music is on both lists, because unless it is offered to both Blue and Green students it doesn't usually recruit enough students to be viable.



Further examples of Pathways

- The same idea can be extended to 3 or more pathways.
- There can be more than one spanning block.
- In addition the spanning column can span across both Year 10 and Year 11 (offering one-year courses, usually in minority subjects, usually with extra teaching time).

If you would like more details of these and other Pathways Examples, together with details of how to deal with them in our **TT-Options** software, send an email to : ask@timetabler.com

Methods of determining the option pools

Once the type of pool structure has been decided by a school, the precise content of each pool has to be determined, to ensure that it meets the needs of this particular population of students.

The method varies from school to school. For example, it may include taking a preliminary survey of the students' choices in order to be aware of any changes needed in your staffing requirements.

For more details of this step please see Chapter 3 of 'The Timetabler's CookBook'.

Full details of this essential book are given at: www.timetabler.com/book

Collecting the Choices from the students (and their parents)

There are 2 main methods:

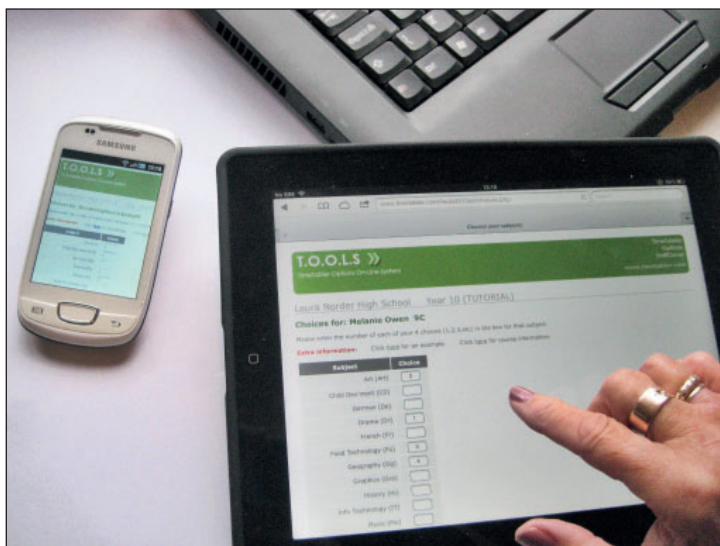
- The traditional paper method, perhaps in conjunction with a spread-sheet,

or

- The **TOOLS** method which allows the Student or Parent to enter their Choices on-line via the internet, from home:

This method reduces the amount of paper, and is more efficient as the students or parents do the typing for you!
Saving your time!

For more details of this **TOOLS** method, including screen-shots of what the students/parents see, visit:
<https://www.timetabler.com/TOOLS>



Students/parents can enter their Choices from home using a computer, tablet, smart phone, iPad, etc

Many schools (particularly in Scotland) use **TOOLS** in school during a discussion between the pupil and the school's Careers Counsellor, and use it to enter the pupil's Choices during the discussion.

Whichever way you use **TOOLS**, the students' Choices are then ready to be fed into **TT-Options** software, for working out the best pattern of groups, quickly.

This is explained on the next page.

Analysing the Choices and Constructing the best Options Pattern

For this step it's essential to use good software, which can scan millions of possible solutions to find the best for your school.

Modern 'smart' software such as **TT-Options** does not need you to guess at possible answers.

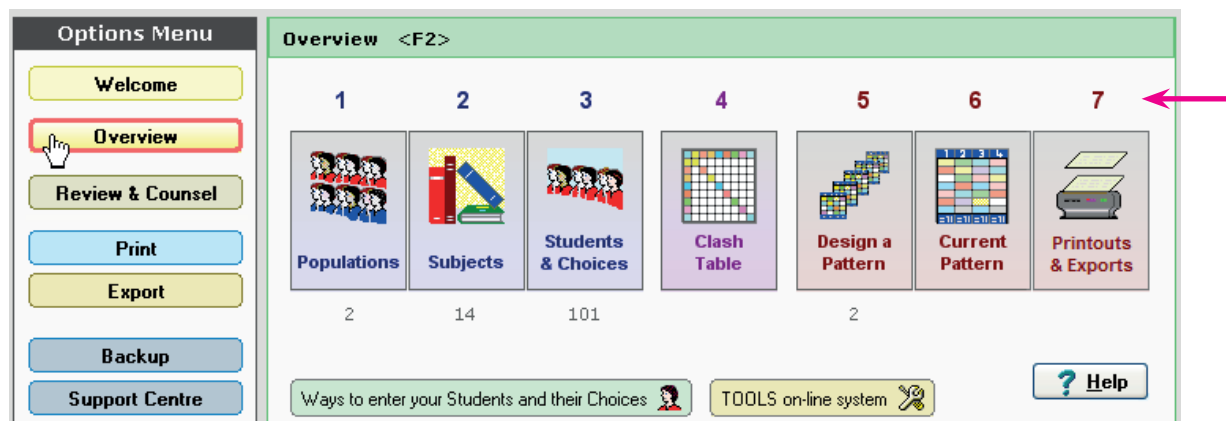
Just click on the Auto-Create button and let the program do the work for you:



The advantages of **TT-Options** include:

- quick, clear, intuitive software
- finds the best solutions interactively or using **Auto-Create**,
- accepts data from traditional paper or from TOOLS (on-line),
- checks your students' choices according to Rules you specify,
- works with Pathways, including 'spanning blocks',
- a 'Student Inspector' allows easy counselling of students,
- mail-merge letters to your parents,
- print out Group Lists and individual student timetables,
- the result can be exported into SIMS .net, iSAMS/Ed:gen, Bromcom, WCBS, and some other MIS.

You just follow the steps 1 – 7 shown here:



There is a short video about the program at :

<https://www.timetabler.com/images/Video-OptionsOverview>

And you can download a free Tutorial version from: <https://www.timetabler.com/options1>

For more about Options Structures see: <https://www.timetabler.com/improvingOptionsStructures.html>

If you are working in Scotland please see: <https://www.timetabler.com/scotland>



What do other people think of this software?

www.timetabler.com/comments

Appendix : the Consequences of making big changes

If, after reading this White Paper, you decide to consider making any changes to your Option blocks, it is important to consider the consequences before actually implementing any changes.

For example, at the time of writing there have been recent trends in some schools:

- to consider having a 3-period day (with a 10-day cycle),
- to consider having common Option Blocks across both Years 10 & 11 together [and in some cases across Years 9+10+11].

The first of these trends is not dependent on decisions about Options (although it rather flies in the face of research about the ways pupils learn best). For more information on this topic, see:

<https://www.timetabler.com/ResearchOnEffectsOfTimetabling>

But the second trend could have damaging affects on other parts of the school. The more that upper-school blocks are bound together, the more likely that it will result in split-teaching in lower-school subjects, which is disliked by Pupils, Parents and OFSTED.

And in practice it may also have an adverse affect in upper-school by limiting the Option Choices for students because of restrictions on staffing the big teacher-teams needed by large blocks.

Some schools that had started to implement such a scheme have now abandoned it, partly because of changes in government rules about which examination result counts for the school league tables in England & Wales.

So what seems like an excellent idea while you are in 'blue-sky thinking' mode or 'broad brush-stroke' mode, may not have good consequences for your students when it has to be implemented within the realities of staffing resources and government legislation.

If you are considering implementing changes like these, then we'd urge you to:

- Do some '**What if ...?**' investigations.
This topic is discussed in a separate White Paper on Timetabling.
Send us an email if you want a copy : ask@timetabler.com

If you use the **TimeTabler** software then the process is outlined at:
<https://www.timetabler.com/SupportCentre/What-if-investigations.pdf>
- Use the services of a Curriculum and Timetabling consultant, to analyse the situation in your particular school and to comment on the feasibility.
See the list of timetabling experts at: <https://www.timetabler.com/inset-courses>

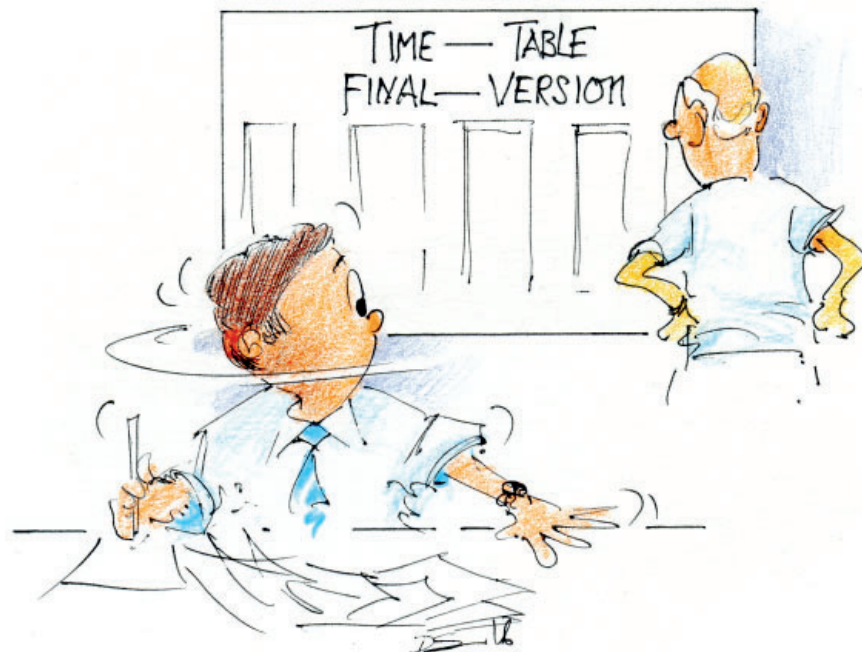
There is also a discussion about ways of Managing Change on pages 30 – 36 of Chapter 2 in 'The Timetabler's CookBook'. See <https://www.timetabler.com/book>

Much of the text in this white paper is taken from '*The Timetabler's CookBook*', by Keith Johnson, Mervyn Wakefield & Chris Johnson, ISBN978-0-9561161-0-9, available from www.timetabler.com
For any queries, contact us at : ask@timetabler.com

Other titles in the series:

TimeTabler:

- White Paper on Options Structures
- Timetabling : A Guide for Headteachers
- *TimeTabler* Tutorial (+ free Tutorial software)
- Will your next timetable be more difficult ?
- Timetabling Primary and Prep schools
- Timetabling a Special School or PRU with Individual Learning Programmes
- White Paper on Improving your school's Timetable
- Saving Money for your school via the timetable
- Help & Support that we provide
- Flexible working : Dealing with Part-time teachers
- Doing 'What if...?' investigations



Uh-oh ? What do you mean 'uh-oh' ?

Help & Support for your timetabling

With **TimeTabler** we provide the most comprehensive and expert timetabling support in the world.

We support you in **12** ways:

1 There is a free **Tutorial**, with a step-by-step Tutorial Booklet, to give you a quick introduction to the general style of the program.

Visit www.timetabler.com and use the Menu shown to get your free copy:

2 In **TimeTabler** every screen has its own interactive **HelpScreen** (as you can see in the free Tutorial versions). Just click on the part of the screen you want Help on.



3 We provide a range of animated **HelpMovies** (video tutorials), to explain each main screen with a guided tour. This is good at the start, to learn it quickly, and also at the start of each new timetabling season for quick revision.



4 **TimeTabler** comes with a fully-illustrated 250-page **Manual**. This contains a large number of **Worked Examples**, from simple 'setting' to the most complicated 'Sixth Form'. It includes lots of timetabling Tactics, Tricks and Tips, spelt out step by step.

5 We provide a **QuickStart Guide**, with a checklist of steps that you need to take.

6 The book by Keith Johnson, Mervyn Wakefield and Chris Johnson on "**Timetabling – A Timetabler's Cookbook**" is the standard 'bible' on timetabling principles. It covers every aspect from A to Z.

The web-site also has some free **INSET/CPD materials** on timetabling principles. And if you are **new** to timetabling, there is more information for you.

7 We send you a **monthly Newsletter** to remind you of the essential tasks at each stage of the timetabling year. To receive your free copy, go to: www.timetabler.com/signupfornewsletter/

8 You will have free access to our 24/7 **SupportCentre**. This includes a large fully-searchable '**Knowledge Base**', where you can find answers to common timetabling problems, and you can download over 300 articles on timetabling.

9 We provide detailed documentation on how to **Export** your completed timetable to **SIMS .net** and the other Admin Systems.

10 Before you start timetabling, our **Options** software helps you to find the most efficient arrangement of 'elective' choice subjects. Simply and quickly.

11 Above all there is the **free** expert **HelpLine Support**, from our team of experienced timetablers. For New Users we provide **free Gold-Start Enhanced** Support & Guidance. More details at: www.timetabler.com/gold-start

12 And if you need a training course, or if you want some on-site in-school Help, then our **TimeTabler Associates** can provide it.

So we provide a complete service for Timetablers. For you.

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A Guide for Headteachers

Saving money via the timetable

Doing 'What if...?' investigations

Download these Booklets and others, free of charge,
from: <https://www.timetabler.com/timetabling-ebooks/>

“Everything should be made as simple as possible, but not simpler”

– Albert Einstein

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 **TimeTabler**
Providing timetabling solutions for 40 years