



Two-Week Timetables

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Idea

Why do some schools run a two-week timetable cycle?

This short article will hopefully provide you with an explanation based on a simple example and some tactical recommendations should you choose to adopt an extended timetable cycle.

Trivial Example

*	Tutor Groups	20
25	Ar ₃ En ₅ Ga ₂ Hi ₂ Ma ₅ Sc ₃	20
25	Ar ₃ En ₅ Ga ₂ Hi ₂ Ma ₅ Sc ₃	20
25	Ar ₃ En ₅ Ga ₂ Hi ₂ Ma ₅ Sc ₃	20
25	Ar ₃ En ₅ Ga ₂ Hi ₂ Ma ₅ Sc ₃	20
		100

Introduction

Let me introduce you to a simple timetable for a particular year group in a junior school. For those of you not yet block-wise, this is what the diagram tells us:

- *The year group has 100 students split into 4 tutor groups of size 25*
- *They all have 20 lessons over one week (4 lessons per day)*

During the week, each class has, at different times

- *3 Arts (Ar) lessons*
- *5 English (En) lessons*
- *2 Games (Ga) lessons*
- *2 Humanities (Hi) lessons*
- *5 Maths (Ma) lessons*
- *3 Science/IT (Sc) lessons*

Problem

As timetabler, you are now told that the school wants to separate their Arts curriculum into two distinct areas of equal importance, ie "Arts" is now to be equally divided into 50% Art & Design and 50% Design & Technology

How do I accommodate this within my timetable?

Solutions

At the moment, we offer 3 lessons of "Arts" per week. If we divide this equally, we would need to offer 1 ½ lessons of Art & Design and 1 ½ lessons of Design & Technology.

Unfortunately, timetables are based on accepted **units** of time and therefore, in order to allow for the new arrangement, you are going to have to do one of the following:

- Reduce (to 2 lessons) or increase (to 4 lessons) the time allocated to "Arts" so that we can divide exactly into two. This would require a change of time allocation for another subject OR
- Change your timetable lessons to half their length so that the week contains 40 lessons, 8 per day. This means, instead of the time allocation for "Arts" being 3 lessons, like the other subjects, it is doubled to 6. This can then be divided into 3 Art & Design, 3 Design & Technology OR
- Change your timetable to a two-week cycle where your lessons are the same length as before but the total of number lessons of each subject does not have to be the same on both weeks. You could schedule Art & Design 1:2 and Design and Technology 2:1 across the two weeks

The last two solutions would both have the same associated curriculum diagram (see below) but one would mean 40 lessons over one week whilst the latter would mean 40 lessons over two weeks

*	Tutor Groups	40
25	Ar ₃ Dt ₃ En ₁₀ Ga ₄ Hi ₄ Ma ₁₀ Sc ₆	40
25	Ar ₃ Dt ₃ En ₁₀ Ga ₄ Hi ₄ Ma ₁₀ Sc ₆	40
25	Ar ₃ Dt ₃ En ₁₀ Ga ₄ Hi ₄ Ma ₁₀ Sc ₆	40
25	Ar ₃ Dt ₃ En ₁₀ Ga ₄ Hi ₄ Ma ₁₀ Sc ₆	40

Conclusion

If a timetable model has units of time which do not allow you to achieve the subject allocations you want, consider either

- Reducing the lesson times and increasing the number of lessons in a week OR
- Maintaining the lesson times but extending the timetable cycle to two weeks instead of one

The Secondary School Curriculum

The example above has been chosen for its simplicity. Over the years, I've been asked by many timetablers about the benefits of moving to a two-week timetable cycle and my answer has been that there is, in fact, only one benefit - a two week timetable allows more fine-tuning of subject allocation ratios without reducing the length of each lesson.

Invariably, the question crops up when a school running a one-week timetable wants to introduce an extra element to the curriculum as a result of a government proclamation. This usually comes in the form of an accepted proportion (percentage) of the curriculum to be given over to a subject.

When Citizenship became a compulsory element in the secondary school curriculum, timetablers turned on their calculators to find out how many lessons per timetable cycle they had to set aside for it. Of course, some of these calculations resulted in fractional answers.

Suppose we say that Citizenship must take up at least 2% of the curriculum:

- For a week containing 25 lessons, this is $\frac{1}{2}$ a lesson. You could give it one full lesson (doubling the required allocation, you could change your week to contain 50 half-length lessons and give Citizenship 1 lesson OR you could maintain your current lesson length, extend the cycle to last 2 weeks and let Citizenship occur once in Week 1 OR once in Week 2*

Suppose we say that Citizenship must take up at least 5% of the curriculum:

- For a week containing 20 lessons, this is exactly one lesson so does not present a problem. You just have to decide which subject loses a lesson!*
- For a week containing 25 lessons, this is $1\frac{1}{4}$ lessons. Neither halving the lesson length nor doubling the length of the timetable cycle will achieve exactness in this case. You might need to compromise or use a mixture of both techniques*
- For a week containing 30 lessons, this is $1\frac{1}{2}$ lessons and so you could use either method to reach exactness*

When Introducing a 2-Week Timetable

The most common objection to the introduction of a 2-week timetable is that it will confuse the students, staff and parents. This can be avoided if you agree to adopt some simple strategies

- 1. Reach a whole-school agreement as to how the days are going to be named (and referred to in conversation and publications). I like:*
 - 1Mon1 ("one Monday one") – meaning Week 1 Monday, Lesson 1*
 - 1Mon2 ("one Monday two") – meaning Week 1 Monday, Lesson 2*

- 2Fri4 (“two Friday four”) – meaning Week 2, Lesson 4
 - 2Fri5 (“two Friday five”) – meaning Week 2, Lesson 5
2. Ensure that the Week Number is displayed clearly on all publications such as the school diary, the student and teacher planners
 3. School websites should display the current Week Number at all times.
 4. When planning the timetable year, ensure you take account of the two-week nature of your timetable. If you break up for a holiday at the end of a Week 1, make certain you return after the holiday to a Week 2.
 5. Don’t allow all your staff training days to fall on a 2Monday!
 6. Make sure that the person who sets up the academic year in your MIS (eg Sims) maps every day of the year to the correct day in the two-week cycle.
 7. If you use Sims (the “Apply Timetable” routine), I would recommend taking great care to define every half term precisely, leaving no room for Sims to make “educated” guesses on your behalf. This can cause problems when term finishes or begins halfway through a week.

Scheduling Implications

*When you schedule a two-week timetable, if you give the process the attention it deserves, you will actually be scheduling **TWO one-week timetable**! This is no exaggeration! Every time you schedule a block of lessons you will be aiming to achieve a reasonable balance of lessons across the two weeks.*

- *If a Sixth Form course is allocated 9 lessons every two weeks, you would schedule it either 4:5 or 5:4*
- *If Maths is scheduled for 8 lessons every two weeks, it should be 4:4*
- *If one half of a year group has Science in the ratio 5:4, it is likely you will want the other half to have it in the ration 4:5*

As you schedule your timetable, you will find that AT EVERY STEP, you will be looking at the weekly distributions. That is why I say that it is like doing two timetables rather than one!

Staff Timetables

*Commercial timetabling software makes it easy to view weekly lesson distribution so achieving a healthy week-by-week balance of lessons for the students should be a natural outcome of careful scheduling. However, I realised many years ago that it is not so easy to ensure your teacher timetables are not **skewed** in favour of one week over the other.*

In the past I have been called in to help out timetablers when they have realised (too late) that some of their teachers have one week of full teaching days and the other week full of free periods! Some timetablers I've met try to rectify these problems by waiting until the school timetable is complete, then printing every teacher timetable, counting the weekly lessons and finally attempting to find teacher swaps which will improve the lesson distribution for all.

My advice is to make the balancing of teacher timetables as important as balancing student timetables. This will not only make your staff happier, it will also save you a lot of time as you approach the end of the timetable and help you avoid being forced into making unwanted compromises to your students' timetables. For example:

Mr Short has only 3 History lessons left to schedule with class 7a/HI2. Unfortunately, I haven't been keeping an eye on how his weekly loading is developing and he has no free lessons available in Week 1, all his free lessons being in Week 2! If I don't go back and make some changes to my previous work, poor Mr Short and his History class are going to be doing all their History in Week 2. Not only that, as is typical of timetables, such an imbalance in History will almost certainly mean that another subject is going to have a similar problem only in reverse!

Staff Loading Utility

To avoid having to constantly count lessons on teacher timetables, I have written an Excel-based application which does all the counting for you. It is designed to be used with Sims Nova-T6 but perhaps those of you using other timetabling software can find someone to program it. Alternatively, if you are reading this as a timetabling software programmer, you may want to use the idea.

The working application can be downloaded at

http://www.limacontech/ttabletips/files/LT - two_weeks.zip

How does it work? I have added some basic instructions to the utility but the following is a brief description:

- *From Nova-T6, choose **Timetable – All Staff**, then **Copy to Clipboard***
- *With the utility open, click in cell **A6** and paste (**CTRL + V**)*
- *Click the **Update** button*
- *You will then see a table with the day-to-day and week by week teaching commitments of every teacher with any misbalances and full days highlighted*

I use this constantly throughout the scheduling process as it helps me fix problems with staff loadings the moment they occur, when it is much easier to take remedial action. I use it to

- *reduce the number of full days in teachers' timetables and*

- *produce properly balanced weekly loadings for all staff.*

If you want to make your staff happier, give it a try!

About the Author

Paul Vant worked for 35 years in secondary school as a Maths teacher, Senior Teacher, Timetabler and Systems Manager. He has acted as a consultant to many schools in timetabling and assessment. He designs software and web applications to solve problems relating to all his fields of expertise. In 2000 he designed the Student Sorting Kit (used for creating balanced groups of students, now in use in secondary schools throughout the UK and in other international institutions.)