



T&L Times

Edition 7

Welcome

Welcome to our second newsletter of Term 4. This week we start with our weekly quote which this week is all about supporting the importance of being part of our great teams both as a Trust and within our individual locations.

“Good colleagues are those who understand that team goals are more important than egos”
Unknown



RIT Reflection

How much do you think about your well being and workload during the week? Here are four key questions which you may want to reflect on in relation to your well being?

- What new ideas have I tried in my classroom lately to keep myself energized about teaching?
- What have I done lately to relieve stress and focus on my own mental health, to ensure I remain an effective teacher?
- What things am I currently doing that I could realistically make less of a priority in my profession?
- How much time have I spent with my friends and family in the last two weeks?

If you have a moment maybe discuss this with a colleague or even in your staff meeting.

Optional Opportunity

We have been very fortunate to be able to use our colleagues at Triple R to be able to deliver some suicide awareness training for any staff across the RIT. This session will be held on **Thursday 4th June at 4pm**. The session is planned to last for thirty minutes in length.

This training is optional and will be held at the RIT main building.

If you would like to access this opportunity for some great CPD then please could you request a place by contacting me at dadsp001@rivermeadinclusivetrust.org



Fantastic Feedback

Many thanks for all of the feedback from the recent Twilight sessions. A full run down of the key points raised has been attached to this e-mail and next steps. Please continue to provide your feedback to our surveys as they are all read and the suggestions acted upon. We look forward to taking the positives from the last Twilight, building on these and making the next one even better still.



Teaching Team Talks

Welcome to our second section on Teaching Team Talks.

Our third contributor is **Sam Simmonds**

Sam is the Assistant Head at Hoo and brings with her a wealth of experience especially in relation to mathematics. She is currently the Trust Lead for Mathematics. Her contribution for our newsletter is about:

Building Long Term Memory

If you have any further questions related to this article or would just be interested in finding out more then Sam can be contacted via Hoo at:

office@hoo-st-werburgh.medway.sch.uk

Building Long-Term Memory – Third Space blogs

Let's be honest; we have all had that memorable moment where you gently remind a child that "We have already studied this..." and they look at you as if you are, for some strange reason making it up!

The Ebbinghaus Forgetting Curve shows how information is lost over time if we do not work on retaining it...after 3 days, 75% of it will be forgotten!

I have always found Third Space Learning blogs useful (<https://thirdspacelearning.com/blog/>). Some of their blogs are not just for maths teachers - two of their recent blogs have interested me, have been about building long-term memory, to counter pupil forgetfulness.

In one, 'The Science of Memory and Forgetting: How to Beat "Summer Brain Drain" In Your Primary School', it looks at the pitfalls to avoid:

Remembering the wrong things

The brain has developed to prioritise the things we pay close attention to. Therefore, it's important to avoid lessons where a child's focus is on the medium rather than the concept. Playing maths games can be a great way to aid learning. However, sometimes more attention is spent on learning the rules than focusing on the actual concept. Open-ended maths problems can be similar. Used too early in the process, this is unlikely to lead to long-term recall of the concepts we thought they were practising.

Solution: plan activities that make students think about the right things.

Build memory, not memories in Maths

What is important to stress here is that exciting lessons take place once the children already know the maths. We might assume that because children remember plays, trips..., the key to remembering is to make lessons full of exciting, memorable events. If we over-stimulate the senses by trying to build good memories, we actually work against the development of strong long-term recall of the concepts. If learning is too focused on the time, place and context, that memory will be inflexible and not very transferrable.

The key to strong memories is lots and lots of thinking hard, practising and revisiting concepts and then finally, applying them in other contexts to aid transfer.

The second blog, 'How Retrieval Practice Helps Long-Term Maths Skills', looks at what retrieval practice is (the act of recalling a piece of information without having anything to help prompt you) and how it helps pupils remember maths in the long term.

'There is very robust evidence from cognitive science that when we try to remember something, that specific memory gets stronger. Teachers can use this to give pupils opportunities to have to try and remember things they have learnt previously; things they have begun to forget. It is quite simply giving children tasks where they have to try and retrieve an answer from their long-term memory. Each time pupils try and do this, that memory will become a bit stronger and a bit easier to find next time.'

For retrieval practice to work, there has to be an element of struggle; there is no point in doing retrieval practice in the same lesson in which you have just taught it. It's the struggle that strengthens the memory. Re-teaching will not be effective. Instead, we need to give low stakes quizzes where they have to try to answer questions from learning a few weeks ago *that the teacher has not revised with them* - it should be low stakes (it is not a test).

Digestible Documents

It might seem that those who write the SATs just pull questions out of thin air. Our article this week shows you that questions have to go through a thorough process.

The Secret Ingredients to SATs: Test Development Frameworks & Content Domains

1. Let's start with the most important fact: SATs papers aren't actually put together by the DfE but they're created by the Standards and Testing Agency (STA). The STA is actually managed separately from the DfE and has its own budget for this very reason.

Behind every good SATs paper, there is a robust test development framework and well defined content domains. After all, if we don't know exactly what is being tested, then what is the point of the test?

2. Did you know that the papers that pupils sit during for their national assessments are actually put together according to the test development framework not the National Curriculum?

3. The test development framework, which is publicly accessible and should be essential reading for Year 6 Teachers, sets out all the objectives from across KS2 that can be tested within the KS2 SATs papers. This is what is referred to as the content domain.

4. The test framework also sets out the proportion of questions that should be tested from different content areas. For example, 83-93 marks each year will be from Number (including calculations and fractions), Ratio or Algebra content areas.

5. Also, of all the content domain references available, each year only around 40% covered in SATs are from Year 6 objectives. So here it is in black and white that KS2 SATs aren't just about Year 6, and it is theoretically possible for children to achieve expected standard, without being proficient in any of the Year 6 content.

Keep this in mind, when you're creating your own programme of revision for maths KS2. The "Science" Behind Testing:

Why are SATs questions so hard?

Just like good teaching, good testing requires a strong theoretical understanding of learning and, especially in the case of SATs, how to objectively assess learning. With all this theory, it's no wonder the SATs questions

can seem so hard! Cue the four cognitive domains...

6. Alongside content domains, the test framework also sets out the four different cognitive domains that are crucial to how the government structures KS2 SATs.

In short, cognitive domains are the type of cognitive skills and abilities that each question is assessed against. And, interestingly, they are an often neglected part of the test framework when people create mock or sample papers, but they are an essential element of the test development process.

The four cognitive domains are as follows:

The first cognitive domain is **Depth of Understanding**. This strand is used to assess the demand associated with recalling facts and using procedures to solve problems.

The second cognitive domain is **Computational Complexity**, which is used to assess the computational demand of a question

The third cognitive domain, **Spatial Reasoning and Data Interpretation**, is used to assess the demand associated with the representation of geometrical problems involving shapes and position and movement. This strand is also used to assess the demand associated with interpreting data presented in tables, charts and graphs

The fourth cognitive domain is **Response Strategy**, which describes the demand associated with constructing a response to a question.

7. In the SATs papers, each question is scored against a 1-4 scale for each cognitive domain that it tests. In which one represents low (or none) and 4 represents high. A definition of what represents a low, intermediate and high level of 'demand' for each cognitive domain is provided in the test framework.

8. Questions which involve a higher level of content (i.e. from Year 5 or 6) often have cognitive domains that sit towards the lower end of each scale, or only have a high level of cognitive demand in one or two of the domains.

Usually, there are only a very small number of high content and high-cognitive domain questions (around 4-6 marks per year)

The Minds Behind the Maths: Who Writes SATs Questions

You might wonder how some SATs questions end up in the papers, but the road to creating a good SATs question is actually a long and intensive one!

9. As teachers, SATs can be an understandable source of frustration. When individual questions, or the mark schemes can feel bewilderingly unfair, it might feel like they were put together all too quickly.

An example of an "unfair" question, picked up by teachers lamenting the 2017 #SATsShambles

But actually each SATs paper starts its journey at least two years before it arrives at your school. It's far from a simple "write a paper and release it" process.

10. Questions (or "items" in test development speak) are written by a number of "item writing agencies", who use the test framework to write individual questions. These agencies include well-known names within the UK educational scene, as well as those which are better known in other countries.

11. Once received into the Standards and Testing Agency, these "items" are reviewed by a diligent team of civil servants who oversee the test development process. (These civil servants often have an education background themselves, and have specialised in test development)

12. All SATs questions are then entered onto a central database of "items". This means that – if any are not used in the current test development process, they can still be called upon in future years.

13. The "items" that are selected as possible candidates for the papers are then taken to a series of expert review groups. There are several separate "groups"; including specialist teachers, academic experts and inclusion experts from various subjects.

The SATs Secret Society Behind the Test Development Process

Great assessment isn't just about the strength of individual questions. Putting together a series of structured questions that pupils are required to answer in a set time, is a process in and of itself.

Stage 1 – SATs Question Level Review

14. The first meeting of the Expert Review Group for a given paper takes place over two years before the date of the assessment.

It goes without saying that these meetings are very strictly confidential. No notes can leave the room, and there is high security surrounding the meeting.

This also means that the test development process for at least two separate years of assessments takes place concurrently.

15. In this meeting, all of the items that have been selected for possible inclusion in the year are discussed over a two day period. These are analysed in depth by the members of the group, and honest and open feedback given.

At least 150 SATs reasoning paper items are presented at these initial meetings – more than three times the number needed.

16. The expert review groups can suggest many things, such as whether or not questions are suitable, or whether amendments to wording, contexts, illustrations etc, need to be made. They even pour over which words should be in bold!

There is often discussion and debate amongst the different group members. A discussion on any particular question can last between five to 30 minutes. So you can imagine how long it takes!

17. The inclusion group focus on the inclusivity of each question, considering a whole range of factors. They also discuss any adaptations needed for the modified versions of the papers.

18. Then all groups consider the context of any questions, ensuring that contexts are as realistic and recognisable to pupils as possible.

19. Finally, the feedback from each different expert review group is collated and used by the STA staff to make any amendments to the questions, or to refer questions back to the item writing agency.

Read Part 2 in our next edition where we look at sample papers.