Curriculum 2.0

ORTON WISTOW PRIMARY SCHOOL

MAY 2020

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Introduction

The purpose of this document is twofold; to draw together the research and training we have had on curriculum development and to set out the changes that we will make to our curriculum for September 2020.

In my first few years of Headship, there were times when I launched a new initiative, sometimes ones that were radically different from what we had done before. On reflection, although there were occasions when we needed to stop and change what we were doing, I think that there were also times when we may have lost the development we had already achieved.

In recent years, we have aimed for a more evolutionary rather than revolutionary approach.

Although the proposals in this document are new and will require some changes, I believe that they are the next logical step in our approach to curriculum development, teaching and learning. I have attempted to draw on the work we have already done, particularly the training from Mary Myatt and my work with Ofsted, as well as my research, in order to create a clear vision for where we go next. There is still work to be done but I hope that teaching staff will feel that they are part of this process and that they have the time and support to play their part. As in all things Wistow, we will review these plans in the coming year and make any necessary changes.

Mary Myatt's excellent book, 'The Curriculum: Gallimaufry to Coherence' draws together the work of many eminent educationalists. Where I have included sections from the book, these are highlighted.

Background

Over the last few years, we have developed the role of subject leaders and they have defined the skills progression within their subject, across all year groups. A year ago, we created a new Curriculum 1.0 document having redesigned the topics that we were going to teach. This document has been the 'bible' for planning what we do with children. We then aligned our assessment system with the Skills Progression document (Curriculum 1.0).

We have also looked at the work of cognitive scientists and thought about how to structure learning in a way that it 'sticks'. There has been an ongoing conversation about curriculum overload and a concern that it can feel like a struggle to get everything done. We have also considered how to inform parents about what we do in school and this has led to the creation of a termly Curriculum Update and a Termly Unit Newsletter for parents.

Research and Reasoning

'The purpose of instruction is to increase the store of knowledge in long-term memory. If nothing has changed in long-term memory, nothing has been learned.'

Sweller,J., P., & Kalyuga, S. (2011) Cognitive Load Theory

Perhaps, nothing is more disheartening for a teacher than knowing that you have taught your class something but they cannot recall it when you ask them at a later stage. When I was a class teacher, there were times when I taught a year group for a second time and knew that I had taught them how to do something e.g. use capital letters and full stops, but they couldn't do it. I may even have been guilty at times of saying something along the lines of 'What did the Infant School teach them?! Why don't they know how to x, y, and z?'

Our research highlighted the following:

- Progress means knowing more and remembering more.
- Prior knowledge allows learning of new content.
- We must consider how effectively we have selected a curriculum with:
    - 'powerful' knowledge
    - 'transferable' knowledge
    - Carefully 'sequenced' knowledge

Besides it being frustrating when a child, or even a class, can't remember something that you have taught them, it also indicates that they are not making the progress they are capable of and that they are less well prepared to learn something new.

The core aim of the Curriculum 2.0 document is to define the 'powerful' knowledge we want each child to learn, to set it in the broader context of a sequence of learning and to create opportunities for children to transfer this knowledge in order to learn new things and to deepen their understanding.

Four key principles about memory

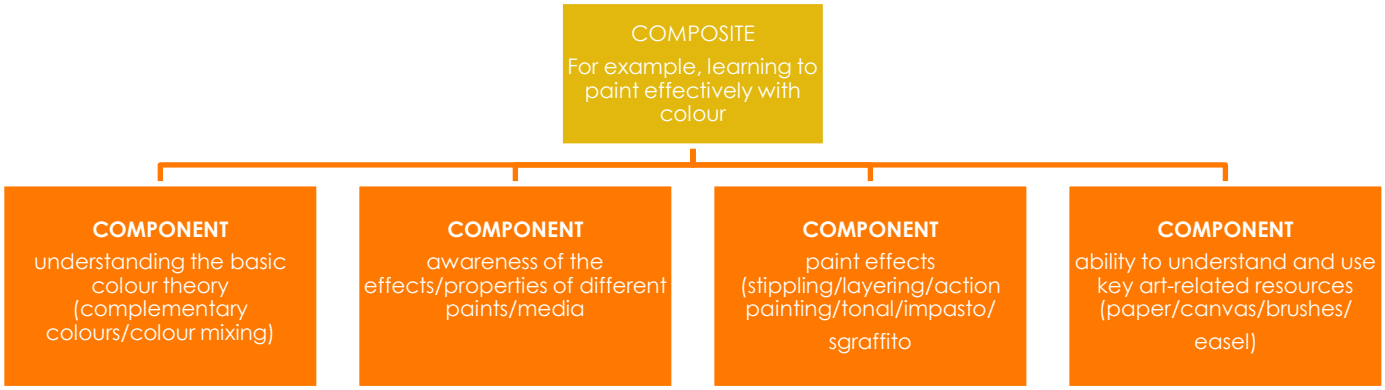
1. Deciding ***what*** content needs to be deeply embedded in long-term memory.
2. Considering ***what*** pupils pay attention to.
3. Avoiding overloading working memory.
4. Providing spaced repetition for 'overlearning

What content needs to be deeply embedded in long-term memory?

In thinking about what the content of our curriculum should include, we have already considered the relationship between high/low storage strength and high/low retrieval strength and the implication of this for teaching and learning.

	Low Storage Strength	High storage strength
High Retrieval Strength	▪ The words to the song learned in music this week. ▪ The plot of the novel chosen by a pupil to read in their library session. ▪ Who is in your drama group. ▪ The name of your supply teacher.	▪ Times tables. ▪ Where to place commas. ▪ How mountains are formed. ▪ The key beliefs of the world's major religions.
Low Retrieval Strength	▪ Students are blank when the teacher references what was learned at the previous lesson.	▪ The details of the Islam topic learned the previous year. ▪ The location of all of the counties of England. ▪ The details of the plot of Beowulf. ▪ All the rules of basketball.

In addition, we learnt about how component learning provides the foundations for composite learning:



What do pupils pay attention to?

Semantic memory is where we store information, facts, and concepts. These are stored 'context-free', that is, without the emotional and spatial/temporal context in which they were first acquired.

These type of memories take effort, we have to work to make them happen. In fact, we don't tend to use the word 'memories' for this kind of stuff, we tend to use the word 'memorise'. After all, we don't say 'I have memories of the 7 x table' we say 'I have memorised the 7 x table.'

Episodic memory is where we store the 'episodes' of our life, the narrative of our days.

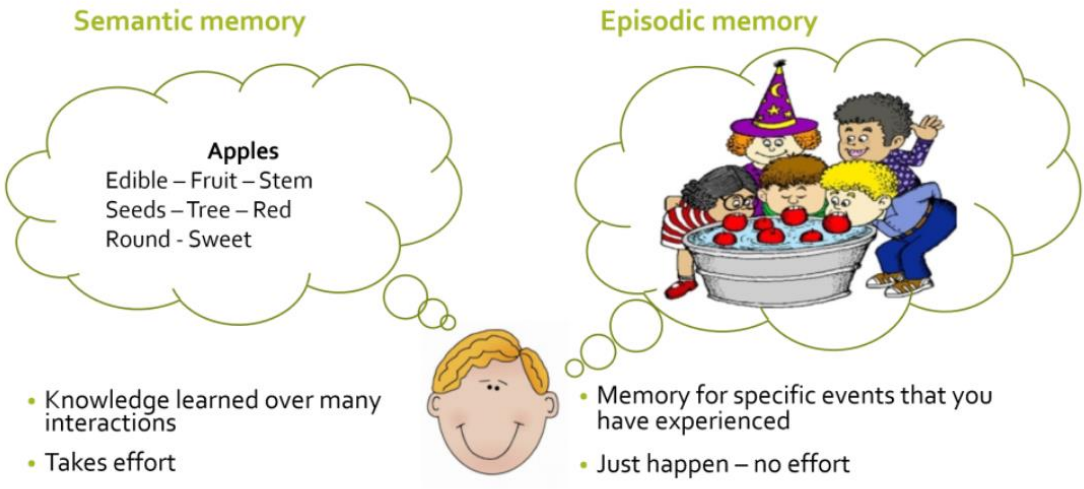
This is the autobiographical part of our memory that remembers the times, places and emotions that occur during events and experiences. We don't have to work hard or particularly concentrate to acquire episodic memories, they just happen whether we like it or not.

When we talk about having fond memories or an event being memorable, we are talking about episodic memory. We are talking about something that happened, something where details of time, place and how we felt at the time are central.

The key purpose of education is to build **strong semantic memory**, to pass on the knowledge built up over centuries to the next generation; how to read and write, how stories work, how to use mathematical reasoning to solve problems, science with its amazing power it gives us to predict the future and the myriad of other concepts, ideas and practices.

Episodic memories come tagged with context. In the episodic memory, the sensory data – what a child saw, heard and possibly smelt during a lesson – alongside their emotions, become part of the learning. These emotional and sensory cues are triggered when we try and retrieve an episodic memory. The problem being that sometimes they remember the contextual tags but not the actual learning.

This illustration from?? Helps to explain this:



That is not to say that building semantic memory is the only purpose of education. We want to help form children who are emotionally literate and morally responsible too, and that will involve thinking about the kind of episodic memories we try and build for our children.

If we treat our children with kindness and respect, they will have episodic memories of what it was like to be treated kindly and respectfully, which makes it more likely they too will treat others with kindness and respect themselves.

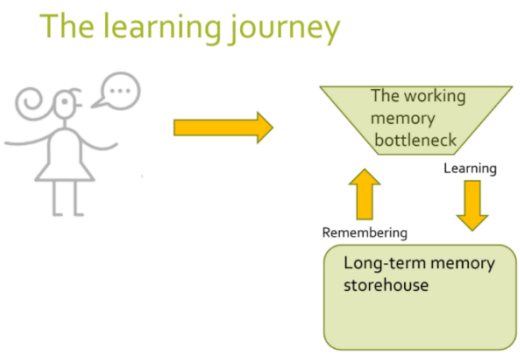
Episodic memory is so tied up with context it is no good for remembering things once that context is no longer present. Luckily our brains also have semantic memory.

Semantic memories have been liberated from the emotional and spatial/temporal context in which they were first acquired. And once a concept has been stored in the semantic memory, then it is more flexible and transferable between different contexts. Because they are context free, semantic memories are much more flexible and transferable than episodic memories and are much more useful.

Semantic memory is what we use when we are problem solving or being creative because both of these involve applying something learnt in one context to another, novel context. Episodic memories by contrast aren't flexible and don't easily transfer because they are anchored in specifics.

Developing **memory**, not rich memories, is key in developing problem solving and creativity.

Avoiding overloading working memory



When we teach something, the information goes first into the working memory and then, in the right conditions, it passes into the long-term memory. Once there, memories can be retrieved back into the short-term memory when we want to think about that particular thing.

The working memory has very limited capacity and is easily overwhelmed. By contrast, the capacity of the long-term memory is vast. If we want children to remember stuff for the long term, we need to make the most of this huge capacity. The aim of all learning should be to improve long term memory.

If we over work the working memory with episodic memory stimuli, it can hamper the formation of long-term memories. This can be a danger with exciting 'memorable' lessons. The exciting but extraneous features are what gets remembered, rather than the more prosaic, but more important information that we want them to learn. Of course, the converse is also true. If a lesson is so tedious that all anyone can think about is how boring it is, then that will be what is remembered, at the expense of content.

There is a danger that policies, CPD and lesson observations focus too narrowly on testing and assessing pupil's short-term memory recall and not long-term memory. Since lesson observations only focus on the here and now of a lesson at the point of delivery, it is of limited use in helping see if learning is actually happening. Learning is a long-term process, yet we try and 'see' the unseeable.

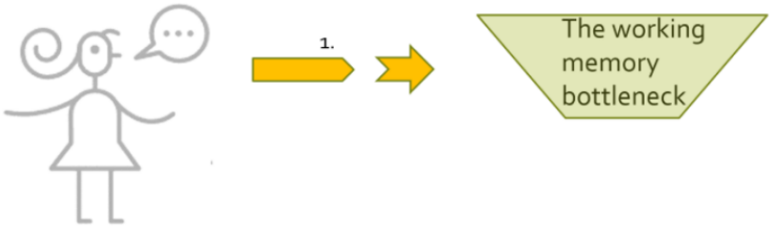
Effective instruction (teaching) is the answer:

- It **minimizes** the overload of pupils' working memories
- Whilst **maximizing** the retention in their long-term memories

There are three possible traps to this taking place!

Trap 1 – Learning never makes it too the Working Memory

We remember what we think about, so lessons need to be planned so children think about the right things. If they are thinking hard about what colour pen to use in their poster or how they might win a game, rather than what the poster is about or the maths behind the game, then that's what they will remember.



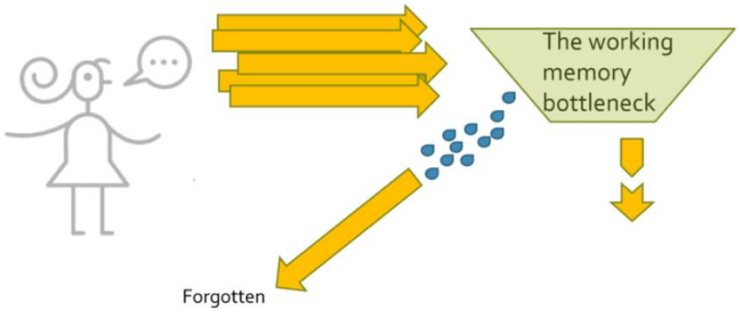
For this reason, it is essential that we are always clear about what the aim of the lesson is and that we minimize the amount of obstacles and distractions.

Trap 2 – Beware of Cognitive Load

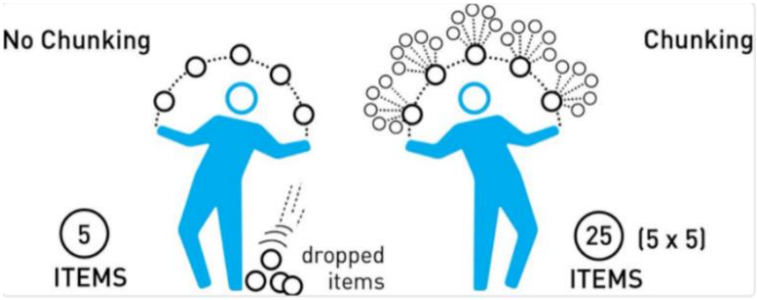
The second hurdle to be cleared is making sure that the information in the working memory makes it to the long-term memory, without leaking out.

As Peps McCrea writes in 'Memorable Teaching'

'Our Working Memory is a high maintenance mechanism. Give it too little to play with and it begins to look for more interesting fodder. Give it too much to juggle and it'll drop all the balls.'



Cognitive overload occurs when we overwhelm the limited Working Memory with too much new information at once. Since most of us can only handle about 4 new items of information at once, stuff will start to leak if we try and put too much in at once.



Fortunately, we can 'hack' the limits of our working memory. Our brains like to connect together related ideas into chunks. The great news about this is that our working memory then regards the big 'chunk' as one item, occupying one slot.

This is where Composite Learning is crucial and why we need to plan the 'chunks' that children will learn as they progress through the school.

So, for example, when children begin to learn to read, each individual letter had to be decoded, so reading is slow and hard work. If the text is too demanding, the child cannot attend to the meaning of the text at the same time. Later, the child can decode more fluently because through practice, phoneme-grapheme correspondences have formed a great big chunk called 'reading' and getting words off the page takes up very little working memory. The child's working memory is now fully available to think about what they are reading, rather than thinking about what the words say.

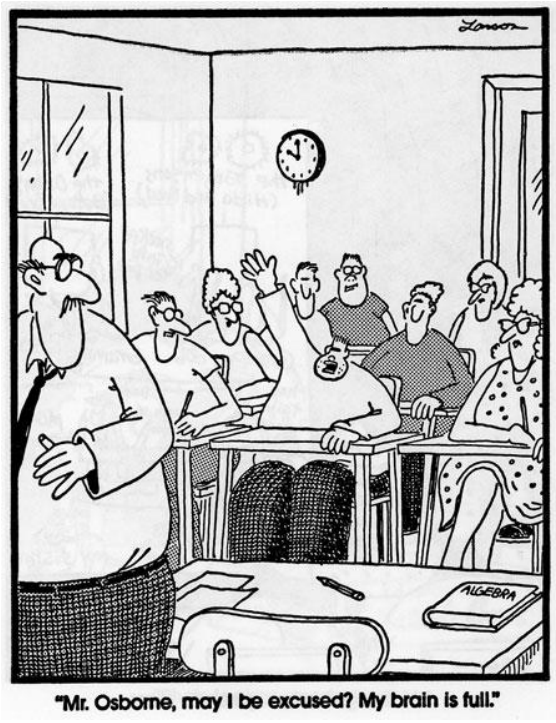
Having secure recall of number bonds and times tables helps students in a similar way have the brain space to think about the new maths they are learning. How many times have children failed to understand vertical

addition, for example, because so much brain power is going into adding two 1-digit numbers together that all that stuff about columns and place value you are trying to impart falls by the wayside.

This is why having lots of rich knowledge is so important. The limitations of the working memory can be bypassed by using the resources of the long-term memory. Those with limited knowledge are unable to do this, so are much more likely to experience cognitive overload.

This has big implications for our curriculum design. If we want successful learners, instead of over focusing on the quality of teaching, we need to pay attention to the quality of what gets taught. Is it suitably knowledge-rich? If instead, we focus too much on giving children fun-filled 'memorable' experiences, we are depriving them of the vital 'nutrients' they will need later. It's equivalent to feeding children on happy meals rather than balanced, nutritious meals.

That's not to say children should never have 'fun lessons' at school, any more than children should never eat junk food or birthday cakes or sweets.



"Mr. Osborne, may I be excused? My brain is full."

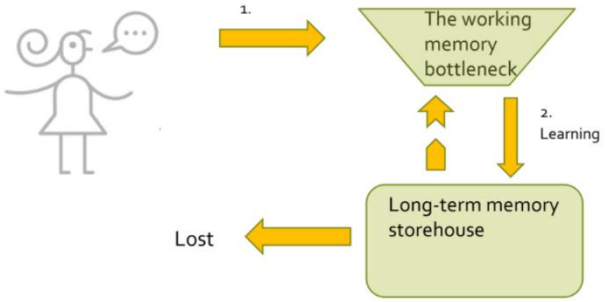
Gary Larson , Far Side

Mary Myatt sums this up: The implication of this for curriculum design is that our pupils need to know a lot of background 'stuff' in order for them to understand the topic in question. This stuff needs to be planned for and thought about carefully. This is because background knowledge helps to create chunking, or an internal picture of what is going on, and, importantly, this is located in the long-term memory, creating more space in the working memory, which is less likely to be overloaded.

Providing spaced repetition for 'overlearning

Trap 3 – Can't retrieve memory

The third and final hurdle is all about retrieval. Knowledge might have got into to our long-term memory, but how easily can we find it?



You know that exasperating feeling when you know you know something but you just can't remember it right now? Or you remember (episodically) that you did know something, but can't bring that thing to mind when you need it. That's a bit like when you've saved something on the staff drive but didn't name it properly, let alone put it in a folder where you might stand the faintest chance of relocating it again.

We can strengthen our ability to recall long-term memories by retrieving them. The more you search for a memory, the easier it becomes to find it. This simple concept – 'the retrieval effect' – should become the bedrock of our teaching for long term learning.

Unfortunately, this effect is also known as the 'testing effect' which puts some teachers off and confuses others – myself included until recently – so that we see this as an assessment tool. **It is not an assessment tool, it is a learning tool.**

When we struggle to remember something, this primes our brain to remember it more easily the next time we look. The brain gets the message that this memory must be important because we are looking for it. The more times we try and retrieve something, the stronger the memory gets. **But it is the struggle that is important**. If we reteach content instead of getting children to try and retrieve stuff they've probably forgotten, the memory does not get strengthened in the same way. Some children will fail in their attempt at retrieval. That's fine. Once they've struggled, then you reteach.

This is one limitation of some AfL techniques. If we assess whether children can remember something at the **end** of a lesson **before** they have had a chance to forget it, we are not strengthening their long-term memory.

Having retrieval tasks at the **start** of lessons, be they 'do now' tasks, entry tickets, start of lesson plenaries or any other retrieval tasks are more likely to strengthen the learning from the previous lesson than an end of lesson retrieval task.

What is more, to make memories really strong, come back to them at gradually increasing intervals. This is known as **'spaced learning'**.

Spaced Learning – aka distributed practice
It is important to 'test' children's recall over a period of time, e.g.:

- 1 day later
- 1 week later
- 1 month later
- 3 months later
- 9 months later

This clearly has implications for our practice. This kind of 'testing' does not need to be high-stakes or intimidating. One way we could do this is by giving children multiple choice quizzes weekly during a 3 week block (in humanities or science) and then by giving them another quiz about 6 weeks later when they are deep in the middle of a completely different block and then at the end of the year (after a period of revision time when they can self-quiz using their knowledge organisers), giving them a final quiz that covers all the areas of learning in that subject that year. This final end of year quiz does have an assessment purpose too, but it will also provide further retrieval practice and help the knowledge learned that year endure in the long term.

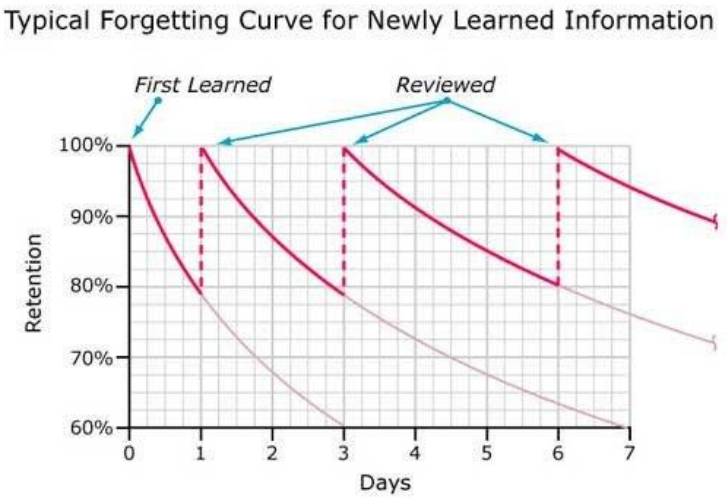
Example of a multiple-choice quiz:

	Question	Answer A	Answer B	Answer C
1	When did World War 2 start	1918	1939	1945
2	Which of these was President of the USA for most of the war	FDR Roosevelt	Benito Mussolini	Joseph Stalin
3	Which of these countries was one of the Allies	Soviet Union	Republic of Ireland	Japan
4	Which of these countries was one of the Axis forces	Poland	Switzerland	Italy
5	Which of these is **NOT** a reason why the war started?	Because Germany had been defeated in World War 1 and felt humiliated	Because the Great Depression led to terrible money problems, particularly in Germany	Because Hitler wanted to invade Britain as revenge for the defeat in World War 1
6	Which of these did **NOT** happen in England during World War 2	Bombing of Pearl Harbor	Rationing of food, clothes and fuel	Evacuation of children from cities

Another way of maximising the benefit of retrieval practice is by mixing up the content of what you are asking children to retrieve. For example, giving children a fractions question from a unit you did a month ago in the middle of a unit on perimeter.

Interleaving the identification of bird types or the works of oil painters improves your ability both to learn the unifying attributes within a type and to differentiate between types, improving your skill at categorising new specimens you encounter later.

Make It Stick – The Science of Successful Learning' by P.Brown, H Roediger III and M. McDaniel



The Ebbinghaus forgetting curve describes the decrease in ability of the brain to retain memory over time.

The theory is that humans start losing the memory of learned knowledge over time, in a matter of days or weeks, unless the learned knowledge is consciously reviewed time and again.

'When you space out practice at a task and get a little rusty between sessions, or you interleave the practice of two or more subjects, retrieval is harder and feels less productive, but the effort produces long-lasting learning and enables more versatile application of it in later settings.'

To be effective, retrieval must be repeated again and again, in spaced out sessions so that the recall, rather than becoming a mindless recitation, requires some cognitive effort.

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Lessons from 'Make It Stick – The Science of Successful Learning' by P.Brown, H Roediger III and M. McDaniel

The neuro pathways that make up a body of learning get stronger when the memory is retrieved and the learning is practiced. Periodic practice arrests forgetting, strengthens retrieval routes, and is essential for hanging onto the knowledge you want to gain.

However, the authors also point out the periodic practice on its own is not enough, you also need to practice *elaboration*. Elaboration is the process of giving new material meaning by expressing it in your own words and connecting it with what you already know. If we are to give children the opportunity to elaborate, as teachers we need to know what they have already learnt which is why our Curriculum 2.0 document is so important. We also need to give children the time, space and challenge to express their knowledge in their own words.

Developing a Curriculum Plan

Our curriculum needs to be appropriately demanding and engaging.

I think that there are two strands: the first is that we need to have a clear picture of the overall provision map for each subject across each year. And to ask ourselves, does this provide coherence and is it possible to tell it as a story or narrative? The second element, which follows from this, is that, as pupils begin each unit, they need to know how it fits into the wider whole, so that they can see, appreciate and learn the particular by locating it in the general.

At our training day in January 2020, Mary Myatt emphasized that work needs to be challenging for **all** pupils and I know that this was a takeaway moment for many of you. (I have included our reflections document in Appendix 1).

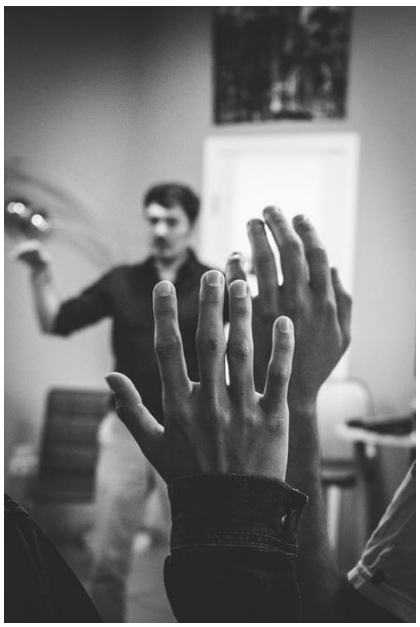
Mary also commented on the importance of children having a background knowledge about a topic in order for them to access new learning. This dovetails with the earlier comments on Component Learning leading to Composite Learning, and also on the idea of Chunking.

This has a bearing on the texts that we ask children to read and analyse. For example, D Willingham discovered that students who had a prior knowledge of baseball, understood baseball stories better than people who don't. Whether they were strong or weak readers did not matter as much as what they already knew about baseball. We should consider this when we ask children to answer questions about a text. Do the children understand the context and subject matter? Do they understand the context/subject specific vocabulary? (The English working party are working on advice for this area as part of our revamp of teaching reading.)

Curriculum Products and Beautiful Work

In 2014, Colin led a series of staff meetings on the revised National Curriculum and this included the thoughts of Tim Oates. In his presentation, Tim talks about curriculum 'products'. When he says products, he means the things which pupils write, say or draw, the low stakes tests they complete or the things they make.

I think that one of the 'victims' of an overcrowded, over complex curriculum has been that we seldom provide pupils with the opportunity to work on something over time, to learn from their mistakes and to produce a personal best. The Austin's Butterfly film serves as a reminder of what can be achieved when we give children time to improve their work. I am not proposing a return to the era of the best books, slaved over for three terms with many hours lost whilst children produced best copies. However, I think that there is something to be said for producing an end piece (product) for an audience.



Mary Myatt also draws our attention to the shallow learning that can take place through worksheets and tasks that are too closed. So, we need to move away from the temptation for children to complete work which might not be original to them, such as completing closed questions on a worksheet, for example, and to conclude that they have understood, just because they have completed it.

Many teachers also identified the importance of speaking and listening after the January professional day. Mary Myatt pointed out that all too often, we take the first correct answer from one or two children (often the ones with their hands up) and take this as a sign that all of the children have got it. Or, we complete the answer for a child who is struggling or we praise their incomplete answer and move on.

She believes that this is not good enough for three reasons:

1. The teacher's information is incomplete. We haven't asked enough questions or heard enough answers to know what the children have understood and what they haven't. Therefore, we don't know how our lesson needs adapting
2. We often need time to rehearse and say our thoughts out loud before committing them to paper.
3. Pupils have the right to have their ideas heard by others. By moving on too swiftly, we are cutting their ability to refine their language and to deepen their understanding.

Myatt also emphasizes the benefits of children knowing the audience for their work. In the past, we have dabbled with this through many of our iDiscover projects which often culminated in a museum which parents visited. Myatt suggests:

- Preparing an exhibition with detailed notes for visitors
- Preparing samples of work for visitors e.g. governors
- Taking part in local and national competitions
- Linking with local community arts and environmental projects
- Younger children sharing work with older children, and vice versa
- Families invited in to school to view work

I recognise that we already do some of this but wonder whether we could do more, more often.

Myatt refers to the work of Ron Berger who created the notion of 'beautiful work'.

'Once a pupil creates work of value for an authentic audience beyond the classroom– work that is sophisticated, accurate, important and beautiful – that student is never the same. When you have done quality work, deeper work, you know that you are always capable of doing more'.

Ron Berger

Myatt also suggests that we ask ourselves the following questions:

- Do we provide enough opportunities for our pupils to produce beautiful work?
- Do they have the chance to polish and refine something?
- Are they clear about what good work looks like?
- Have they been inspired by the finished work of others?
- How often do pupils get the chance to produce work for a real audience?
- Are there opportunities for multiple drafts, punctuated with honest and specific feedback?

We need to be clear here that the idea is NOT for children to produce a piece of beautiful work in every lesson or even each day, but that they are given the opportunity over a period of time to work towards a clearly identified end product and given the resources, time and constructive feedback to do this.

Curriculum Pace

'Curriculum materials in high-performing nations focus on fewer topics, but also communicate the expectation that those topics will be taught in deeper, more profound ways...'

Schmidt & Prawat

Earlier this year we talked about 'initiative overload', which led to us feeling that we were rushing to keep up and doing things superficially. At the time, we put on the breaks and paused to take stock. I would like to suggest that one of the features of our Curriculum 2.0 is that we take our time with things; do less but do it better.

This echoes Tim Oates comment that the route to deep learning and expertise is to do fewer things in greater depth. We will need to come back to this at a later date so that we can discuss what we expect pupil's books to look like if we do less, but do it better. I should point out here that there is a broader discussion about pace in lessons.

If we are to challenge pupils more, then we need to give them the time in lessons to get onto the part where they get to work independently and we need to shy away from activities that are so closed that they lead to similar/identical outcomes for pupils. To achieve this, there does need to be a pace to lessons. But as pointed out earlier, we need to make the time to ask the right questions and to listen to the answers.

Many teachers believe that if they can make learning easier and faster, the learning will be better. Much research turns this belief on its head: when learning is harder, it's stronger and last longer.

Make It Stick – The Science of Successful Learning' by P.Brown, H Roediger III and M. McDaniel

'If we are to honour the curriculum and children's learning, we need to think of pace differently - pace needs to be appropriate to the learning. There will be times when it is appropriate to move on quickly, but only when it is clear that the children have got it and now need something additional. Mostly, however, things need to slow down. All that happens is that the destination is reached, but without any of the necessary equipment or indicators to be able to say whether it had been a successful journey or not.' Myatt

It is only through going more slowly, allowing children time to engage with high quality source material and to make mistakes, that we will give them time to develop deep learning, expertise and mastery. By going more slowly, we spend longer with one resource which will save us time when planning units of work.

Myatt defines expertise as being underpinned by 'a pupil's ability to describe the key elements of what they have learnt, in their own words, and to know how this can be applied in different contexts'. Clearly, this will look different depending on the age of the pupils but there are links here with our work to develop pupil voice. We have begun to do this through subject leader learning walks but perhaps there is scope to develop this further.

I remember being struck by Myatt's comment at our training event about whether pupils can tell you what they are doing and how often they could only do this by swivelling their head so that they could read the Learning Objective off the board. When pupils can't describe what they are doing and why, in their own words, they are not developing expertise. The same is true when they are all completing near identical worksheets or only asked closed questions.

We have talked many times about our pupil's lack of resilience and perseverance, which is why these attributes ended up being part of the Learning Toolkit. Parents tell us that they have concerns about the same thing. This will prove a challenge for us if we want to make work more challenging and we will need to ensure that it is underpinned by our work on having a Growth Mindset and pupil wellbeing. I have a concern that, at times, we over scaffold learning for pupils and this takes away the opportunity for individual expression. This quote from Myatt's book struck a chord for me.

'When starting something new, scaffolding needs to be there so that unnecessary time isn't wasted, but if that scaffolding remains too long, it prevents deep learning and expertise from taking place. This is because it is easy to become reliant on the structures rather than dealing with the discomfort which comes from having a go and not getting it.'

Assessment

'Assessment is, indeed, the bridge between teaching and learning.'

Dylan Wiliam

Some years ago, a few of us went to a training event led by Dylan Wiliams. He was inspirational and some of the things we still do in school came from that event, for example the lollipop sticks to avoid hands up. I recommend you check out his website when you get the opportunity:

https://www.dylanwiliam.org/Dylan_Wiliams_website/Welcome.html

Mary Myatt referred to his work when she led our Trust training day. Later on, I will come to the issue of subject specific vocabulary and make links to Myatt's thinking around etymology. I hadn't realized that the origin of the word 'assessment' comes from the Latin 'to sit alongside'. We all know that it isn't possible to sit alongside each child in each lesson, but we have already agreed that teacher and TA should work with all children over the course of the week.

Wiliam states that there are two sides to assessment for learning:

1. Responsive teaching - I have taught something and I need to know whether my pupils have 'got it' and to what depth. The information from this light touch assessment will determine where the learning and work go next. It is through the 'to and fro' of questioning conversations in the classroom that I know not only whether pupils have completed something, but whether they have understood and are able to apply it in different contexts.
2. What will pupils do differently as a result of the feedback: how will they change their work and how will I know?

Several years ago, we moved away from providing in depth, detailed comments in pupil's books as we had decided that it had become time consuming, that pupils didn't always read it, that we didn't have time for them to make the changes/corrections we had identified and finally, that it had led to a penpal like exchange between teacher and child.

After we took part in training led by Dawn Copping, we introduced 'Distance Marking'. As with all things Wistow, it has morphed over time (e.g. we said goodbye to the stick men), but I would like us to revisit Colin's work on this area before the end of the summer term, particularly the work on DM sheet notes. I think this area is most closely linked to the direction of Curriculum 2.0.

There has been criticism that children in the UK are among the most tested in the world. We have had ongoing conversations about why, when and how we test pupils as part of our assessment system and there is still work to do on this area as part of the Trust.

It's tempting to think that Assessment for Learning is against all forms of testing. I was interested to hear Mary Myatt's comments on this area and the link she made to Dylan Wiliam's work. Their comments link closely to the work on helping children commit 'stuff' to their long-term memory and the role that testing plays in this.

I hope that our Curriculum 2.0 approach will involve more formal, low-stakes assessments. For example, pupils sit vocabulary tests, times tables tests and key terms recall, and all provide opportunities for checking whether something has been learnt. Dylan Wiliam identified that the most powerful way to use these sorts of tests is for them to be private to the pupil as this helps to reassure them that there is no shame in getting things wrong, because, with practice, that is how we learn. These can be done through multiple choice and short answer quizzes.

*'But if we stop thinking of testing as a dipstick to measure learning – if we think of it as practicing retrieval of learning from memory rather than 'testing,' we open ourselves to another possibility: **the use of testing as a tool for learning.**'*

Make It Stick – The Science of Successful Learning' by P.Brown, H Roediger III and M. McDaniel

A couple of years ago, we worked with schools in our Collaborative on the Comparative Judgements approach to assessment. We later stopped this when we became a PIXL school as we didn't want to over burden ourselves. The Comparative Judgement work was led by Daisy Christodoulou. In her book, Mary Myatt includes an interesting observation by Christodoulou regarding how important it is to ask the right kind of questions in an assessment 'test'. Here is the example:

Compare what you would learn about a pupil by asking them these questions.

Which of the following can be used as a verb?

a) run
b) tree
c) car
d) person
e) apple

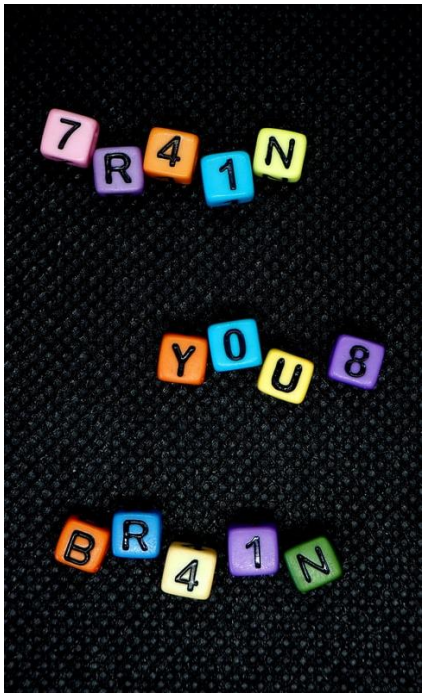
In which sentence is 'cook' a verb?

a) I cook a meal.
b) He is a good cook.
c) The cook prepared a nice meal.
d) Every morning, they cook breakfast.
e) That restaurant has a great cook.

It is likely that most pupils will get question 1 correct. However, a more nuanced response to pupil's understanding is likely to emerge from question 2. Here, it is the **discussion** about the correct answers which both supports the identification of misconceptions and secure deeper learning.

Make It Stick – The Science of Successful Learning' by P.Brown, H Roediger III and M. McDaniel

In 2005, the authors approached a local school in order to study the effects of testing on pupil performance. This is an extract from the book:



A six-grade social studies teacher was eager to give it a try. For the researchers, the chance to work in the classroom was compelling, and the scores terms were accepted: the study would be minimally intrusive by fitting within existing curricular, lesson plans, test format, and teaching methods. The same textbooks would be used. The only difference in the class would be the introduction of occasional short quizzes.

For the six social studies classes a research assistant designed a series of quizzes that would test students on roughly 1/3 of the material covered by the teacher. These quizzes were for "no stakes, "meaning that the scores were not counted towards a grade. The teacher excused herself from the classroom for each quiz so as to remain unaware of which material was being tested. One quiz was given at the start of the class, on material from assigned reading that hadn't yet been discussed. The second was given at the end of the class after the teacher had covered the material for the day's lesson. And a review quiz was given 24 hours before each unit exam.

There was concern that if the students tested better in the final exam on material that had been quizzed than on material not quizzed, it could be argued that the simple act of re-exposing them to the material in the quizzes was responsible for the superior learning, not the retrieval practice. To counter this possibility, some of the non-quizzed material was interspersed with the quiz material, provided as simple review statements like "The Nile River has two major tributaries: the White Nile and the Blue Nile." No retrieval required. The facts were quizzed for some classes but just restudied for others.

The quizzes took only a few minutes of classroom time. After the teacher stepped out of the room, the researcher projected a series of slides onto the board at the front of the room and **read** them to the students. Each slide presented either a multiple-choice question or a statement of fact. When the slide contained a question, students used clickers (handheld mobile phone like remotes) to indicate their answer choice: A, B, C or D. When all had responded, the correct answer was revealed, so as to provide feedback and correct errors. (Although teachers were not present for these quizzes, under normal circumstances, with teachers administering quizzes, they would see immediately how well students are tracking the study material and use the results to guide further discussion or study.)

Unit exams were the normal pencil and paper tests given by the teacher. Exams were also given at the end of the semester and at the end of the year. Students had been exposed to all of the material tested in these exams through the teacher's normal classroom lessons, homework, worksheets, and so on, but they had also been quizzed three times on one third of the material, and they had seen another third presented for additional study the times. The balance of the material was neither quizzed nor additionally reviewed in class beyond the initial lesson and whatever reading a student may have done.

The results were compelling: the kids scored a full grade level higher on the material that had been quizzed than on the material that had not been quizzed. Moreover, test results for the material that had been reviewed as statements of fact but not quizzed were no better than those for the non-reviewed material. Again, mere re-reading does not much help.

A history teacher who is not part of the research, has knitted retrieval practice into his classroom in many different forms, including quizzing, and he provides additional online tours at his website, like fast cars and games. After reading passages on the history of slavery, for example, his students are asked to write down 10 facts about slavery they hadn't known before reading the passages. You don't need electronic gadgetry to practice retrieval.

How does giving feedback on long answers to test questions of fact learning? Studies show that giving feedback strengthens retention more than testing alone does, and, interestingly, some evidence shows that delaying the feedback briefly produces better long-term learning than immediate feedback. This finding is counterintuitive but is consistent with research is discoveries about how we learn motor tasks.

In the classroom, delayed feedback also yields better long-term learning than immediate feedback does. In the case of the students studying prose passages and science topics, somewhat shown in the passage again even while they were asked to answer questions about it, in fact providing them with continuous feedback during the test, analogous to an open book exam. The other group took the test without the study material at hand and only afterwards were given the passage and instructed to look over their responses. Course, the open book group performed best on the immediate task, but those who got corrective feedback after completing the test retain the learning better on a later test. Delayed feedback on written tests may help because it gives the student practice that spaced out over time; spacing practice improves retention.

Differentiation, Challenge and Mastery

This is another area that we have debated. We have talked before about how often children get onto the challenge activity, which seems to imply that there hasn't been any challenge until then. We've also discussed how often children receive a 'Did Great' and what it tells us if a child has a page full of ticks.

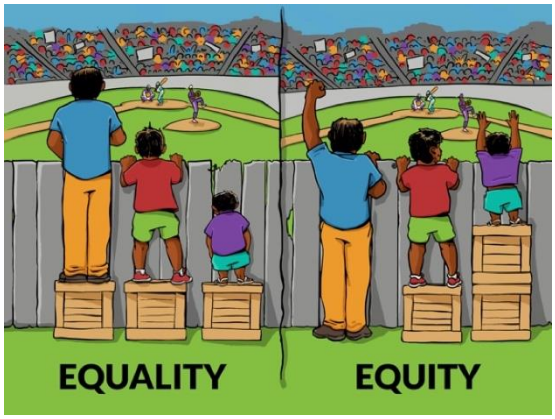
Mary Myatt has some strong views on differentiation which are worth considering. She feels that differentiation doesn't work for a number of reasons:

1. Differentiation anticipates what children are capable of – by giving them prepared worksheets according to their ability, we are limiting what they might be capable of, because the work usually puts a cap on what they can do.
2. The materials prepared for differentiation are usually closed exercises. So, all that children have to do is complete these. Completion of prepared materials does not allow them to interrogate the material, struggle with it and make sense of it on their own terms. This applies to all those with materials differentiated in advance.
3. It cuts down on the possibility of addressing misconceptions. Because the materials have been prepared in advance so that the children can complete them, they have less cognitive challenge in them. Cognitive challenge is at the heart of learning – if a child does not have the chance to struggle with demanding materials they are not really gaining new knowledge and skills. (More on these later.)
4. The completion of the worksheet is often regarded as work. Children finish something and are praised for it, without checking for sure that they have properly understood. It is too easy to complete work that has been prepared in advance by guessing, prompting or copying from someone else. This places very little demand on them, but as the superficial attraction of making them appear busy. Busy is not the point – learning is.
5. They create a lot of extra work for teachers. Extra work is fine if it results in better outcomes, but it is a waste of time if it doesn't

I'd add one more of my own…

6. Differentiated worksheets create the cost of paper and printing and the work of sticking them in books.

Above all, differentiation goes against the heart of the principles of the revised National Curriculum, which is that all children should be following the same course of work, are entitled to do difficult things and are supported on the way.



Removing differentiation does not mean removing support.

Support consists of the live conversations and additional unpacking of the material during the lesson. Differentiating materials in advance predetermines what children are able to do. (Myatt).

Myatt goes on to suggest that teachers will save time by not producing various levels of task/worksheet. Teachers need to carefully select the text, big idea or problem that they are going to present as the starting point to their class in the lesson.

All children are entitled to the richness and difficulty of authentic material. Teachers talk about it and then ask children to engage with the material, whether it is inferring some important aspects, which might not be immediately apparent, and ask them to show what they know and can do with the material. (Myatt)

We've talked before about how some children don't want to put themselves in a position where they are being challenged and we think this is because they can't cope with failure. I can think of children in school who have low self-esteem and will beat themselves up, even when they have actually done well. This will be a focus for our ongoing work on mindset and mental wellbeing. With this in mind, we need to think carefully about how we will increase the challenge of our curriculum in a way that doesn't alienate learners. We know that regular, low-stakes testing secures knowledge in long-term memory. Perhaps we have been partly to blame because we, by NOT testing children in this way, have hampered their ability to secure their knowledge in their long-term memory, which means that it isn't there to be drawn on when they need it.

Myatt goes on to quote Alison Peacock's view on challenge, from her book 'Assessment for Learning Without Limits':

'The 'more able' loved it; they enjoyed being the 'bright' ones and having 'special' challenges set by the teacher.

The middle group were annoyed that they didn't get the same work and challenges as the other group; they wanted to try harder work but they have worked out they would never be moved up as there were only six seats at the top table.

The 'less able' were affected the most. They felt 'dumb', useless, they thought they would never be allowed challenges as they usually work with the teaching assistant – by Year 5 were completely dependent on the teaching assistant to help them. This less able group like the sound of some of the challenges the top group had, but knew they would never get the chance.'

To a certain degree, we might argue the challenges are open to all of the children in our classes as we have a challenge table of tasks for children to be able to access independently. However, in reality, how many children in each class get to access these challenges, and of those that do, which ability groups do they tend to come from?

Myatt makes an interesting point about outcomes for children of different abilities. She argues that children in the 'lower' groups are offered closed responses, for example, matching parts of sentences, filling in gaps, completing easy work sheets, none of which really stretch them or expect them to do much. Children in the 'higher' groups by contrast are given more to do and more is expected of them. While they might have a few closed exercises in order to practice or consolidate their knowledge, they are also expected to do new things with this. These children are given more opportunities, both to struggle and to gain new knowledge. This extends the gap in their knowledge and attainment. The paradox is that by attempting to give them easier work, such exercise can often close down their capacity and opportunity to do more. (Myatt)

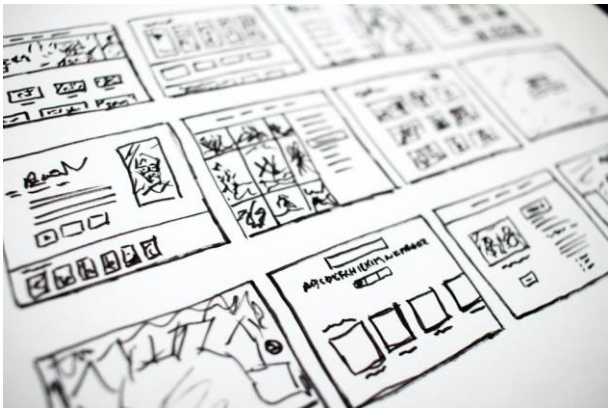
Like all schools, we have spent time thinking about mastery. Myatt makes the point that by over scaffolding work for pupils we are denying them the opportunity to develop long-term memory and mastery. In order to develop these skills, children need to be provided with opportunities for repetition, revision and deeper understanding. The simplest way to think about mastery is to ask; can my pupils do something, think deeply and articulate their reasoning as a result of what they have been taught? Mastery has implications for working memory and long-term memory. The more the basics are practised, the more secure the links with the underlying principles. There are no easy shortcuts for this. It places an expectation on educators to think and plan for the underlying big ideas that need to be revisited over time. (Myatt)

'Mastery in any field, from cooking to chess to brain surgery, is a gradual accretion of knowledge, conceptual understanding, judgment and skill.'

Make It Stick – The Science of Successful Learning' by P.Brown, H Roediger III and M. McDaniel

With this in mind, when we are revising our curriculum plans and creating Curriculum 2.0, we need to take the time to decide on what are the 'big ideas' in each subject, how we will plan for them to be revisited over time, how we will ensure that teachers are clear about what has been taught before and what pupils will be expected to do in the future.

Curriculum Design and Vocabulary



We've already discussed that the purpose of revisiting our curriculum plans is to be clear about these big ideas and that we want to do less so we do it better, in greater depth. If we pay attention to developing a conceptual structure, the new information from different contacts will become 'stuck' to the concept and children are able to make better sense of it.

We need to move away from thinking that we have done a good job if we have covered lots of things, done lots of 'stuff'. Moving on rapidly to new learning is part of the reason the pupils cannot remember what you told them previously or even earlier that day.

Myatt argues that the first basic is to ask ourselves, what is the overarching idea here? What do I want my children to be able to do with this new knowledge and how will I know if they've got it? This creates two priorities; getting the planning right in the first place and teaching responsibly to check whether children have grasped the key concepts.

The next point she makes seems particularly pertinent to us given that we have revised our history topics in the last year. This paragraph is taken directly from her book:

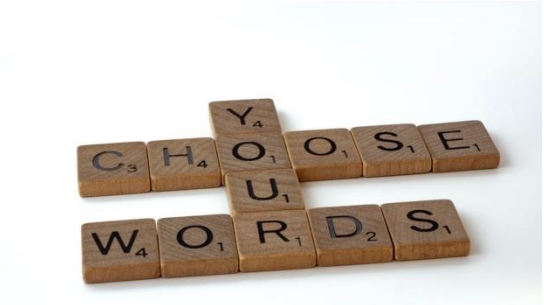
Let's take the concept of civilisation which appears in the history curriculum for primary children. Across the primary years, they are expected to learn about a range of civilisations, and it is one of the expectations that pupils 'gain and deploy a historically grounded understanding of abstract terms such as civilisation'.

They will not gain an understanding of this concept if it is not taught explicitly. They will not make sense of it if the term is not used regularly as they learn about the Roman or Mayan empires, for example. All that will happen is that children will have a fragmented range of facts which do not meet together under the concept of civilisation. Their learning and potential for new learning is limited.

So, it is important to spend some time on unpacking what is meant by 'civilisation' and for the purposes of the National Curriculum in history, this is about knowing and defining characteristics of large empires. The term 'civilisation' comes from the Latin for 'town'. The Oxford English dictionary definition is the process by which a society or place reaches an advanced stage of social development and organisation.

This is part of the reason that I want to redesign the template we use for curriculum plans so that it is broader than merely skills. I suggest that the new document includes Knowledge, Understanding and Skills as well as an additional column for vocabulary.

For a long time we have had a focus on developing a love of reading. When we have spoken to parents about this and took part in staff training, we have made people aware of the role that reading plays in developing a child's vocabulary. In recent years, there has been growing concern about the "vocabulary gap" widening between children from different socioeconomic groups. By age 3, it is believed that children growing up in poor neighbourhoods or from lower-income families may hear up to 30 million fewer words than their more privileged counterparts.



More recently, we have talked about teaching explicit vocabulary, invested in new materials and tried different approaches such as 'Shine a Light'. I'd like to take a little time to think about the importance of vocabulary in general and within individual subjects in order to clarify why it would be added to the curriculum document.

Firstly, given the reason above, teaching explicit vocabulary work gives us the opportunity to close the gap for pupils who come from language rich backgrounds and those who do not. The second reason is that by teaching this vocabulary we deepen and extend knowledge.

Myatt explains this as; if the purpose of the curriculum design is to ensure that pupils have access to and master deep subject knowledge, then one of the most efficient ways of doing this is to expose them to the technical vocabulary and subject specific terminology of the subject area. Doing this creates a key which unlocks the territory of the domain.

Learning about the origin of words, their etymology, can add an extra dimension to vocabulary work. Myatt states that the reason why etymological work is important is that the key words within a subject area are often conceptual. This means that they are often the 'holding baskets' for a lot of small details of knowledge. If pupils have access to, understand and are able to use the conceptual, technical language expertly and confidently, we are leading them into the territory of long-term memory. In addition, when we are planning learning, it is important and efficient to identify the key concepts we want pupils to learn. So, identifying these and doing work around their original meanings will take pupils deeper into the richness of the subject.

So, for instance, when thinking about planning a unit of work about Christianity in Key Stage One, one group of teachers working together decided that one of the key concepts it was important for pupils to know and learn was 'incarnation'. They identified this, because it is a fundamental belief within the Christian community that the divine became human in the form of Jesus. They realised that without this knowledge, pupils learning could be fragmented. As a result, they explored the etymology of 'incarnation' – they talked about how it comes from the Latin, the language spoken across the Roman Empire. They talked about the legacy of Latin which means that many words in English and other languages have traces of Latin in them.

So 'in' for example, means 'in' both in Latin and English. The 'carnation' part of the word comes from the Latin 'carnis', which means flesh. It is the same route in the words carnation, chilli con carne and carnival, as well as many others.

Furthermore, many root words are found in different contexts. For example, the word 'isosceles' comes from the ancient Greek for equal (isos) and legs (sceles). If pupils have done work on the etymology of isosceles, not only will they have a picture in their minds which is more concrete than the abstract term, they will also have the ability to recognise when they come across it elsewhere – for example in isobar, isometric. It is giving them the tools both for deeper learning in the immediate context, tools which can be transferred elsewhere, and which provide great pleasure in the process.

Vocabulary can be usefully divided into 3 tiers:

- Tier 1 – high frequency in spoken language (table, slowly, write, horrible)
- Tier 2 – high frequency in written texts (gregarious, beneficial, required, maintain)
- Tier 3 – subject specific, academic language (osmosis, trigonometry, onomatopoeia)

This website article helps to explain this in more detail:

https://learningspy.co.uk/literacy/closing-language-gap-building-vocabulary/

Knowledge, Skills and Understanding

We need to be clear what Knowledge, Skills and Understanding are, how they are different, how they are taught and assessed differently and how we should make children aware of this.

Knowledge	Skills	Understanding
What children will know	**What children will be able to do**	**What children will understand**
Possession of information	**Ability to perform a mental or physical operation**	**Development of a concept: putting knowledge in a framework of meaning**

Here is an example of what this might look like in practice. Look at the following two questions and one instruction. Are they asking for knowledge, skills or understanding?

- What is the capital of France?
- Find out what is the capital of Mongolia.
- Why is New York not the capital of the USA?

Here are the answers:
What is the capital of France?

To answer this question, you need **knowledge**. You need to be able to recall a piece of information.

Find out what is the capital of Mongolia.

This requires you to **do** something. You need to be able to perform an operation. In this case to look something up in an atlas, or Google it, or ask someone. This requires a **skill** of some kind.

Why is New York not the capital of the USA?

This requires you to **understand** something in order to explain it. You need to have acquired the **concept** of a capital. You need to put your knowledge in a framework of **meaning**.

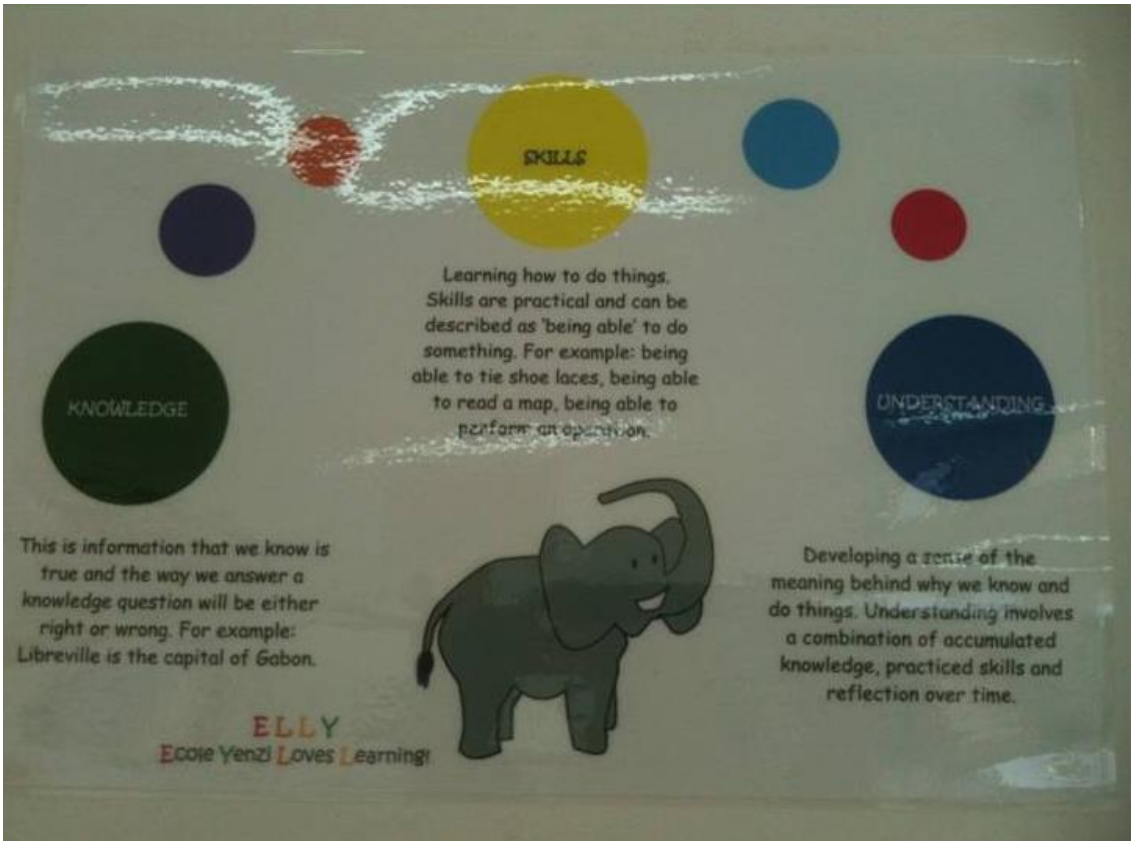
Knowledge, skills and understanding are also taught and assessed in different ways:

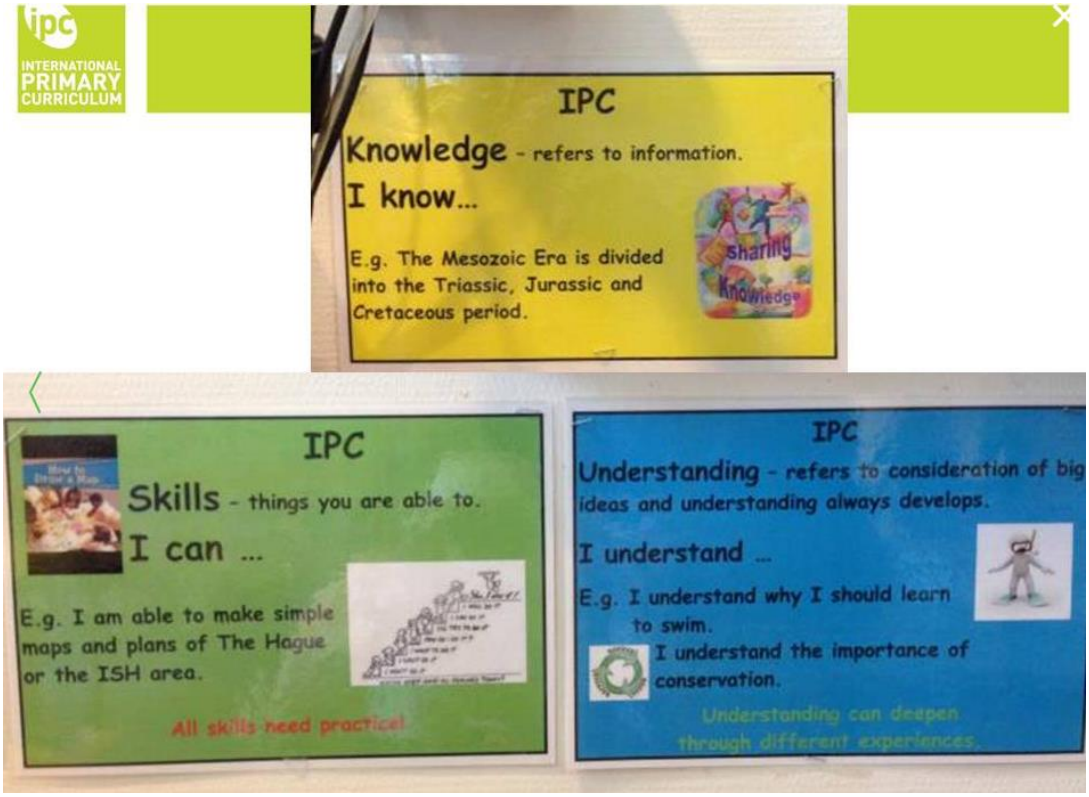
	Learning	Teaching	Assessment
Knowledge	remembering	telling	testing
Skills	practising	coaching	observing
Understanding	reflecting	facilitating	evaluating

As we have found in the past, symbols can be a useful way of reinforcing concepts with children and our new plans will use the following:

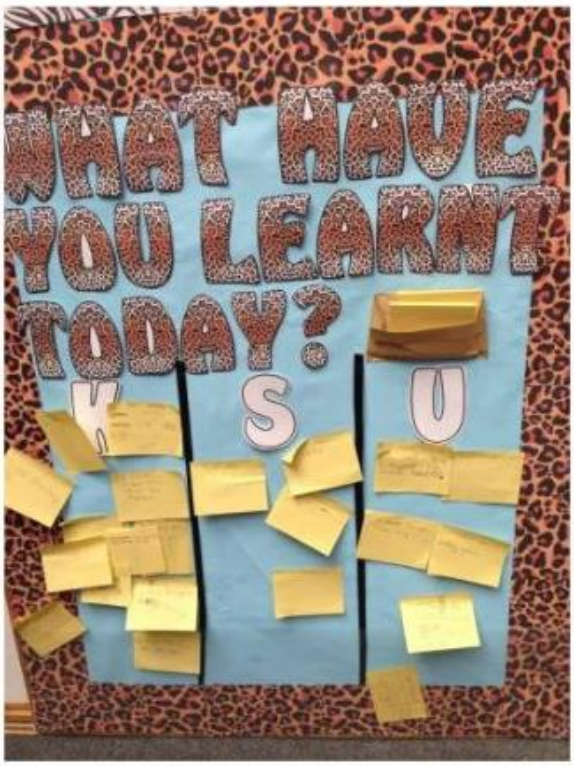
Knowledge	Skills	Understanding	Vocabulary
			

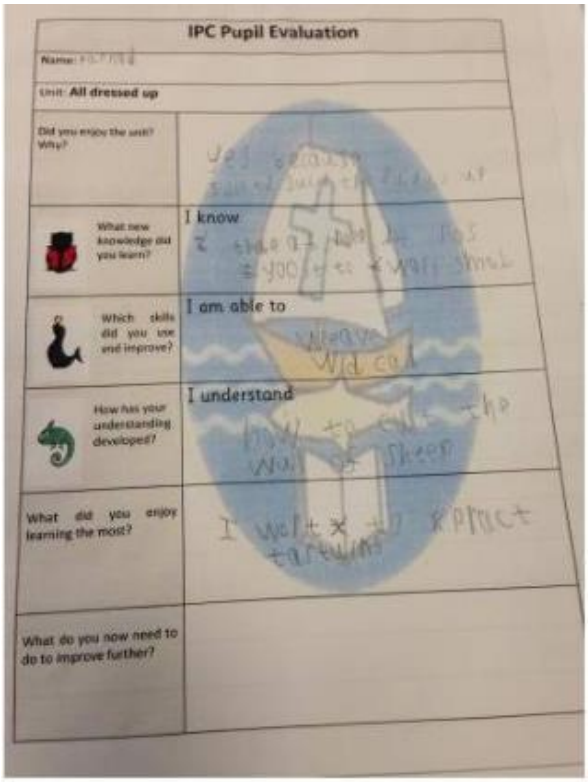
Some schools have introduced displays in their classrooms to help teach their pupils what Knowledge, Skills and Understanding are. Here are some examples:





www.greatlearning.com/ipc From Fieldwork Education, a part of the Nord Anglia Education family



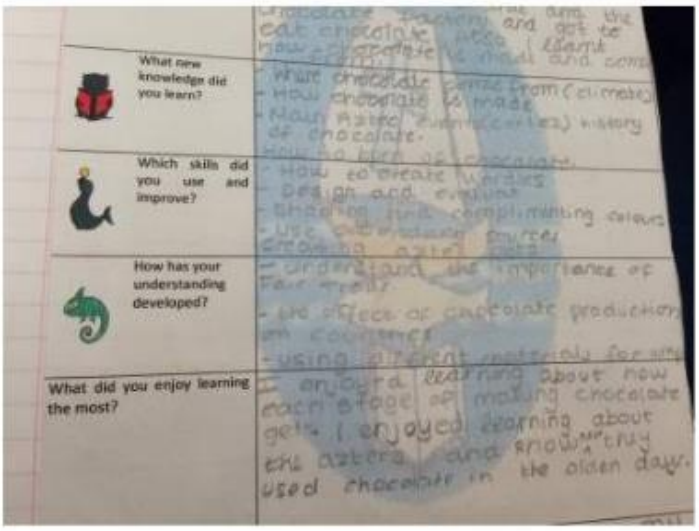


IPC Pupil Evaluation

Name:

Unit: All dressed up

Did you enjoy the unit? Why?	
What new knowledge did you learn?	I know
Which skills did you use and improve?	I am able to
How has your understanding developed?	I understand
What did you enjoy learning the most?	
What do you now need to do to improve further?	



What new knowledge did you learn?	
Which skills did you use and improve?	
How has your understanding developed?	
What did you enjoy learning the most?	

Orton Wistow Primary School – Curriculum Plan

Subject :	Year :	Term :

			
Knowledge	**Skills**	**Understanding**	**Vocabulary**

Appendices 1

Reflections on Mary Myatt Training

Please make notes next to your name to answer these questions:

1. What are the top three take away thoughts you had?
2. What do you think are the main implications for our curriculum?
3. What do you think would be the best approach for 'getting the job done' i.e. redesigning our curriculum? Do we need staff meetings? Should subject leads take the lead on their subjects? Should we release year group pairs/teams/groups of teachers to plan together? How do we do this in a way that makes the best use of time and resources?

	1	2	3
Colin	Challenge for all. Ensuring every child finds work challenging in all areas of the curriculum. Looking carefully at what tasks we are choosing for children, is it worth it or is it just a holding activity. Assessment and data - is there a way to lessen the current expectations? What is making a difference? Medium term plans - is there a more effective way of creating these using 'Big enquiry questions' and stories as a way to start? Look at the example proformas Mary shared on the training day.	Interleaved learning - opportunities to revisit learning to aid long term memory. Mini testing / quizzing Written evidence - what are the expectations if we are going to have a greater focus on oracy? Stories - how can we make greater use of stories across the curriculum to engage our pupils and help expand their knowledge. Knowledge is key. Children need to know stuff. Comprehension skills can be taught, up to a point but a child who has some existing knowledge of what they are reading, is more likely to be engaged and perform at a higher level. Do children know when they are being historians, scientists etc (I think they do more than they used to) but also, do they know why they are being historians, scientists etc? All learning needs purpose if we want children to be fully engaged.	Do subject leaders need to take more of a lead in the planning of their subject across the school? Is there a way to release them to work alongside teams to support? What are other schools doing? Not just in our MAT. Are there schools who are further ahead or have 'nailed' using stories we can learn from? Are we making the best use of what we have available to us in Peterborough? Subject leads to investigate ways of making OUR curriculum the best it can be for OUR children. How can we make better use of the cathedral, museum, ferry meadows, Alwalton church, business park, local area...
Laura P	More demanding work - providing opportunities for high challenge/low threat. Broad and balanced curriculum - FS has 17 areas of learning. In recent years more attention has been given to R W M. How can we deliver the curriculum in its entirety? "Tell me what you have learned" teach children how to do this by modelling language as they explain what they have been doing.	If we are spending more time with a text, listening/discussing, this will have implications on a written outcome. How can we provide evidence if no written outcome. Need time to develop this, could use a system like Tapestry for recording in other year groups.	Do we need to redesign the curriculum? Maybe a few changes to be talked through with year group partner. If we are already a good/outstanding school and it's working well how much do we need to change? If necessary, subject leads to have time (across MAT?) to develop changes.

Jess	The impact of reading The use of text and stories to create those 'wow moments' at the start of topics to generate excitement and begin the children's new learning on a subject. Link these text to new vocab. The impact of talk Do we give children the opportunity to talk? We all know talk for writing is important, but are we giving children enough time to use and develop these oracy skills or are we focussing too much on the written outcome? Is there a place for 'oral' presenting? The impact of listening Linking with talk and reading do we give children enough time to listen? Do we give children opportunities to build on what has been heard and add contribution or contradictions? Do we give children enough time to listen to each other and learn this skill? Do stories at the end of the day give us time for response?	If we need to focus more on reading, listening and talking how do we evidence this? In FS do we have a 2 week cycle of talking before we write? Should we have a greater focus on Pie Corbett strategies and ideas? More talk, less written evidence- Will this have a greater impact in the quality of writing? Have we been to quick to let Kagan strategies slip? Engelmann 'Any child can be taught anything… with effective support.' Are we giving children (KM children) the right support and giving them the opportunity to challenge themselves? Are we being demanding enough? Are we giving children a taste of 'high challenge/ low threat'? Is there a place for testing? Can we test for learning? We all enjoy a test/ quiz- are we missing an opportunity to keep knowledge in the long term?	We need time with subject leads to discuss the planning, expectations and outcomes. Three year groups have come to me for support on art expectations, planning and help with the creation of the piece. Not all year groups have asked for help with this. Is this because of time limitations? If we were given time to do this would this be helpful? As a MAT are we supporting each other with curriculum development? Looking at the changes in the curriculum- Do we have time to analyse why we are teaching these concepts? Is the new curriculum effective? Do we have time to go over feedback on the initial Autumn term teaching? Do we have the opportunity to fine tune or change areas if necessary?
Holly	Providing children with high challenge/ low threat work. Ensuring all children are challenged in all areas of the curriculum. Ensuring there are more opportunities for speaking and listening. We need to spend more time allowing children to talk and rehearse their ideas before writing. Use of stories and providing quality resources (which are relevant) across all areas of the curriculum, particularly the foundation areas.	How can we make a greater use of stories across the curriculum? Do we need to slim down our curriculum further to provide more opportunities to have an interleaving curriculum? If we spend more time speaking and listening, this will impact the amount of written evidence in our books.	Work alongside the different subject leads in the MAT to support the curriculum development across the 3 schools.
Jill	Writing floats on a sea of talk - we need to spend more time allowing children to talk through their ideas before committing them to paper. If we don't encourage talking, how can we expect quality writing? Stretching the answers - don't just accept the first answer, encourage children to develop their thinking - A -ask a question, get an answer B - build on it/because C - contribution/contradiction Curse of content coverage - ie shallow & rapid coverage of many things rather than a deeper understanding/mastery of a narrower curriculum.	Work should be challenging for all - do we need to rethink differentiation, and offer more high challenge but low threat work to all children How can we make sure our less able readers get a view of the bigger picture? Do we need to restructure our guided reading sessions so that the less able are accessing more challenging texts/vocabulary, that would otherwise be considered above their reading level? What are we calling subjects in school - do children know when they are learning science/geography? Do they actually know what RE or PE stands for?	I think it would be helpful to work with subject leads from across the MST so see how much crossover there is between the schools in terms of what is appropriate to 'our' children. Could we form a knowledge organiser as a joint team (ie across the MAT). I felt a lot of what she was talking about was already happening at OWPS, and we just needed to remain mindful about why this, why now. This would be a good opportunity to go back to those initiatives that have worked in the past (Pie Corbett etc) and see how we can use them now.

Sarah	In no particular order… Research showing that pupils wanted more demanding work. Ambition for all. (Her point that any child can be taught anything, with effective support, has made me question have we got the interventions right for KM children to allow them to access the curriculum and close the gap?) Idea of the question at the start of the lesson to make more explicit what children are learning. Importance of talk- have we lost this and become too focused on written outcomes and evidence in books? (And how to balance with Y2/Y6) Use of stories and quality resources, especially in foundation subjects. Are children being asked to think, or to complete a task? (But also the need for time to be given over to developing subject knowledge and sourcing/ making these resources).	Liked the idea of the Knowledge Organisers, side of A4 making clear what children need to know by the end of the unit. How to build in interleaving- do we need to slim down even further what we are doing to allow time for this? What she said about the curriculum intent- what do <u>our</u> children need? Are we using the local area and what it can offer to good effect in our curriculum? An interesting point that regular testing (but in a less formal way, eg self marking) deepens learning. Do we need to revisit the use of eg weekly times tables tests and spelling tests, but to re brand it? Could this learning for these less formal tests become part of homework once again? Use of story telling across the curriculum and learning questions. 'Any child can be taught anything… with effective support.' How can we re evaluate and make effective our use of time and interventions so that all are achieving this?	I think that a lot of what she said isn't necessarily new ideas to Wistow, but that perhaps we have dabbled with things in the past without a clear enough vision of how it will fit into the new curriculum at Wistow and what the benefits will be for <u>our</u> children. I also think some really good things we have done before (eg Claire Gadsby and some elements of Book Talk) have been lost but actually there are really valuable things in there which would fit with the points made. I think that the work done last summer/ term to create the curriculum map has created the skeleton of Wistow's curriculum already and that we are more focused now on what the children need to learn in each year. What now needs to be considered is how refine this, to turn this into a curriculum that is for <u>our</u> children. So, for example, a really clear vision of the knowledge to be taught (Knowledge organisers for each topic - created by subject leads, with designated release time), then for year group teams to have time to source quality resources and to develop subject knowledge). And how are we using Wistow/ the wider Ortons/ Peterborough? Re best use of time- staff meeting time is fine, but often limited and not long enough to get stuck in. Maybe a staff meeting or 2 at the outset, then a period of time for things to be worked on, then a follow up/ check in staff meeting. So for example, if we went down the road of knowledge organisers, a staff meeting to establish what these would look like, then time to do them, then a meeting for them to be shared and any feedback/ suggestions to be put forward. Time is a precious commodity, however much time is given over to this, we need to begin with a clear vision, expectations and a timescale otherwise it's not going to be used effectively.
Lauren	Beginning a lesson with a key question to engage all learners. Have a clear idea of the big ideas you want/need to cover during the topic (not shoehorning extras in) to lead to a deeper understanding. Using a wider variety of resources/websites/local amenities to enhance learning eg. The British Museum. Stretching answers: ABC, not taking short answers or a child's first answer.	Regular testing, how will this work? If the stakes are low for the children, how can we ensure the scores support future learning without creating more data. How can we improve a child's speaking and listening? Teaching the children to speak in complete sentences across all subjects but still making sure we can highlight those children who are passive/competent speakers. Slimming down the curriculum to focus on mastery so	Revise the curriculum again, focussing on highlighting the skills, knowledge and vocabulary. Ensuring we still teach a broad and balanced curriculum. Internal data? We use PiXL, reading speeds, spelling trackers, arithmetic tests etc.. Are we doing too much as she described them as unreliable? Planning in opportunities to 'test' in order to commit all learning to long term memory. How will this look? How

		what is being taught is transferable and at their 'fingertips'. What are the Big Ideas for each subject? The skills and knowledge required?	easy is it to do for all subjects?
Tom	Power of having dedicated, frequent, quality time reading out loud to our children - particularly reading books that are 'above their pay grade.' Concept of interleaving between topics in our curriculum - showing children where the links are, rather than making big jumps from one topic to another. Importance of talk - particularly expecting answers from everyone to every question (no hands up?), and stretching children's answers. The importance of being really clear on the big concepts that children need to be really clear on in order to build the rest of their understanding on - "the holding baskets for big ideas."	If we are going to spend more time revisiting/recapping previous learning do we narrow down our curriculum and cut some things out to enable more time to be spent mastering the key concepts? I.e. less objectives but more retention? How does more time spent focusing on talk and 'privileging thinking over task completion' effect the expectations of what we see recorded in books. Do we need to start doing regular short quick tests in different areas of curriculum (testing to aide learning- not for accountability).	Creating knowledge organisers seems to be a powerful tool that we should make the most of - but will be time consuming initially - especially across different areas of the curriculum - do we focus initially on trialling on a couple of curriculum areas? The key concepts for each unit need to be identified and made clearer on our big curriculum spreadsheet. "Internal data is neither reliable or ....." (can't remember the second word she used) - is there value in what we record on insight? Especially in foundation subjects and particularly in terms of giving children a 'level' i.e. 'On track,' 'Above' particularly.
Hayley	<u>Ambition for all pupil</u>s- making work demanding. Devoting time to developing knowledge and concepts so that pupils can apply skills across a range of units/subjects/years/contexts. <u>Vocabulary-</u> ensuring pupils are meeting common key vocab in a subject in every primary phase. Use of knowledge organisers to give structure and purpose to units of study. <u>Oracy-</u> How much of our timetable allows for children to strengthen their speaking and listening skills. What is a fair expectation of written outcomes at OWPS? <u>Subject knowledge-</u> readdressing the balance of teacher time. As Mary said 'If it's not aiding the learning why are you doing it?' How much of our PPA/CPD time is given to developing our understanding of the foundation subjects we teach. Is there more we can do to slimline marking/assessment/data to free up greater opportunities to look beyond Twinkl?!	Dedicate time to structuring every subject into required knowledge, vocab, skills progression Return to the National Curriculum and question how the planning fits into the wider picture. Find opportunities to slimline units/lessons in order to make time to return to concepts. Evaluate our practice of sharing WALTS. Return to Claire Gadsby, and Kagan strategies which have become diluted. Develop WALTs to include 'We are learning about….It is important to know this because….it will help us to….' Return to/plan in training opportunities for Pie Corbett and talk for writing. Decide on written outcome expectations and adapt our book scrutiny procedure as a result. Won't the evidence of a stronger onus on S&L be evident from the quality of the writing that follows?	Although subject leaders need to be involved, I think giving more time for teams or year group partners to understand and question the curriculum for the pupils they teach will benefit our subject delivery. I.e. SLs- lead on vocabulary and knowledge across the school. Teachers- to develop knowledge organisers, resources and big questions connecting to each subject. This needs a dedicated period of time to get it right and effectively analyse why we chose to deliver what we do. The initial curriculum design last year was completed under pressure of a short deadline- what is the time frame for these changes? Staff meetings/twilights/professional days/releasing time needs to be committed to this. More training for staff for the content they cover in the foundation subjects. I know for one Computer Science remains an area we all need time to tinker with! Can we look into accessing more free CPD opportunities? Could we have a focus subject a term/half term we all work on?

Ben	The power of talk - Allowing children the chance to discuss their ideas more freely without the constraints of time. Especially if it a new subject or topic, they may need longer to actually talk through their ideas on this subject. This leads onto prompting children to talk in full sentences to develop both their grammar skills and vocabulary. Understanding - Should be a greater understanding of definitions rather than just what it says. This should be embedded for the children so they are truly secure. An approach which isn't heavily dependent on a written outcome. Making it clear it is acceptable to have lessons and outcomes which are verbal and prompt discussion.	Clear understanding of what is being taught. Are they aware that what they are doing is Art or history. Children should be able to understand the skills they are doing are related to a certain subject and why. Look at the approach of more regular testing, through 'thinner' paper styles with fewer questions. Helping the children embed what they have learnt and make sure that they are visiting on a consistent basis. This could be used effectively for GPS or a certain area of maths like number bonds. Making sure 'big questions' are used throughout topics. Allowing for a richer understanding of a topic and exploring it in greater detail. The questions mustn't answer itself. Meaning of material - Focusing on not what you have done, but what have you learnt. Difference between skills and understanding of a subject.	Focus on big questions for each topic, giving teachers a better understanding of what is being asked for each. Given time to be able to go over what was previously taught and delve deeper into the gaps of what perhaps needs to be taught. Giving staff a greater opportunity to analyse the curriculum could allow for a greater understanding of what is best for the children at wistow, rather than a generic approach which perhaps we can sometimes fall into. Staff meetings are a good way to put across a new approach to a subject or curriculum because as a staff we are all there and are all 'singing the same tune'. What can happen is once this has happened, the aim or focus can drop off (Due to lots of reasons) so perhaps a recap to make sure that these 'changes' to our teaching or curriculum are actually working. This could be more beneficial than cramming lots of new ideas, which sometimes results in not all of them being as successful as others. A more refined focus.
Faye	Planning in a learning question or 'big question' / a problem to solve in a lesson - no more WALTs? Allowing time for discussion based lessons across the curriculum & improved high quality talk for learning in writing sessions - etymology as part of weekly GPS slots? Use of high quality resources, particularly in foundation subjects and the use of stories to set the scene at the start of a unit.	Discussing/Agreeing on what we want to focus on teaching in each subject area and year group in order to make room in the timetable for the type of deep mastery/challenge based learning we want to teach - if that's the root we choose to follow. If we wish to create our own curriculum, visits to other schools that have already done it well would be useful Some of the changes are tweeks not complete changes e.g. we approach things in writing using a lot of the elements suggested already, we use big questions in RE & science.but perhaps need to make it more cohesive across each subject	Teams for each subject led by the subject lead, more like secondary schools? Timetable faculty meeting time for teams to meet and time for each faculty to feedback to whole staff and for the whole staff to review, reflect on, and trial the ideas shared before they are agreed and implemented Plan in the changes over time - perhaps start with one foundation subject? Or develop a subject that already uses some element currently. Quality resources teams to research high quality resources that can be used in each subject? Create a bank of websites / resources for staff to use? Regular updating would be required too though…(I found a great website for science questions - mystery science) ALSO https://www.stem.org.uk/teaching-science-through-stories I have begun to collate some links that were discussed during the training session please find via the link below and feel free to add your own! https://drive.google.com/open?id=1-U8DXqrzZGPkD_8WtLLJfYqtlj670BXk

Katy	1) The importance of stories in the curriculum - quality texts in all subjects - not just english lessons. Dedicated time for reading aloud. 2)Importance of learning through talk and time given to ensuring children verbally rehearse before writing. Developing oracy in the classroom. Developing vocabulary particularly subject specific vocab. 3)Developing challenge in lessons but with low threat. Ensuring their is ambition for all children. Ensuring everyone has the same access to the curriculum.	Making sure we give the time to revisit topics that have been covered, ensuring that interleaving and make connections between different areas. Building in opportunities for quizzes where children mark their own work and take ownership of what they need to practise/learn. What do we want the children to know? What are the 'big questions' for each subject? What do they need at their fingertips in order to acquire new skills? Are we still planning too much rather than developing deep learning of what really needs to be taught. What are our expectations for written outcomes if we are to develop oracy and learning through talk?	Time needs to be given to refine what we have already done with the curriculum mapping - is there a way we can slim down the curriculum further in order for us to teach deeper rather than wider? Subject Leaders need to be given time for this to happen whilst teachers also need to have ownership of their planning. Maybe develop teams to review subject areas We need to think carefully about the time frame for any changes so that it is done effectively.
Rachel	1)Providing children with the opportunity to explain what they have learned rather than providing a WALT etc. 2)Enhance opportunity got challenge to all learners, without it being done in a segregated or threatening manner. 3) The importance of discussion and not having the fear of 'we MUST have a written outcome' (How should this be managed in year groups where grades and levels are compulsory? (Yr6. And Yr2)	Opportunities for discussion to enhance vocabulary/writing outputs. We have done some training and bought in resources to support this, but maybe now it is time for the children to take more of a lead too. Are we providing a high challenge/low threat curriculum across ALL year groups? Are the skills we teach providing a balanced diet across cross-curricular subjects or are we just 'entacking' and using loose links to say it 'fits'? Do we need to explicitly look at etymology more? We have the resources to be able to start this.	Should we have a specific time (when unknown!) where children are provided with the opportunity to free-flow write about a subject of their own interest? This would push their ambition and provide an opportunity to every child to thrive. The importance of story sharing and discussion seems to be key. We are beginning to do this with Reading Stations, though should the texts we read now be of a more challenging nature than previously planned? Introducing some children to more Classics etc. This would enhance vocabulary, enrich experiences and improve knowledge of all. 'Remember that we are Human First and Professionals Second' How do we manage this? The demands vary for each year group at different times of the year and sometimes you can get stuck in your Year Group/Team Bubble without seeing others or have a chance to offload - especially with separate break times etc. Are ALL Staff Meetings necessary? Could one per month be used more as low key discussion time/seeking advice or support from colleagues?
Jo	1. Changing to a learning challenge curriculum - question led rather than WALT led? For example, 'Why were the Romans important?' instead of 'Understand why the Romans were important.' 2. The importance of oracy and not rushing through the curriculum. Quality rather than quantity. There are implications to this with evidence for moderation, etc.	1. How well are subjects taught, do staff members have the subject knowledge to deliver good lessons across the curriculum? 2. Planning in key pieces of writing and where opportunities lie within other subjects to produce work of a high standard. 3. Using SALW (Shine a Light words) to improve key vocabulary. But this must be thought about beforehand and implemented across	Year group partners must plan together. Subject leaders could join up in teams for their subject areas (creative arts/STEM/humanities) to ensure that progression and any cross overs are easily identified. Staff meetings could be in the form of workshops which people can decide on which suits their own CPD needs. Decisions made about the curriculum in SLT are opened up to rest of staff so approaches and new

	3. Ensuring that key vocabulary is embedded and all children are expected to use ambitious language.	the curriculum with key words being identified at the beginning of a topic and used in all writing across the term.	ideas are across the whole staff rather than just SLT deciding. Not all subject leaders are on SLT and need to be involved in decisions about their subjects. Look through new curriculum and change the statement to a question to encourage enquiry. Could staff meeting time be given over to resourcing for different subjects? Internal data for foundation subjects could be of more use if each subject leader collected work and pupil voice from tracker children (eight from each year group) with a selection of abilities and groupings from across the school. This could be kept in our subject leader folders and use to moderate the subject rather than only having evidence from as a data trawl and gives a more realistic view of our subjects across the school from a triangulation of work scrutiny, learning walk and pupil voice.