Documents on a Page

Curriculum Pedagogy (research behind the thinking)

We have drawn on ideas and principles from Cognitive Science to inform our preferred curriculum pedagogy.

- Cognitive Load Theory (Dr John Sweller)
- Rosenshine's Principles of Instruction (Dr Barak Rosenshine, University of Illinois)

The books 'Why Don't Children Like School?' by Daniel Willingham and 'Teaching Walkthrus' by Tom Sherrington & Oliver Caviglioli have also informed our practice.

Cognitive Load Theory

What is Cognitive Load Theory?

The human brain can only process a small amount of new information in its working memory but is able to process large amounts of stored information in the long-term memory.
The working memory can only hold about four 'chunks' of information at a time before it gets forgotten. Large amounts of information can be stored semi-permanently in the long-term memory in 'schema' which are systems for collecting and organising knowledge.

Why does it matter in school?

If our working memory is overwhelmed, it makes it harder to understand and it is likely to take longer to retain new learning.
With practice, we can automatically recall information from our long-term memory which will free up capacity in our working memory for new learning.

What can we do?

In lessons we can:

- Break new learning into small, manageable chunks making links with prior lessons.
- Explain learning clearly and concisely, focusing on essential information.
- Model and explain learning, providing scaffolds for tricky tasks.
- Check for understanding and allow time for consolidation.

When introducing something new, novice learners benefit from the knowledge and experience of experts (teachers). Experts provide explicit guidance, opportunities to practice and feedback allowing children to become 'experts' in their own rights.
As children become more proficient at solving a particular type of problem, they benefit from 'expertise reversal' – they become 'experts' and work independently to apply their knowledge and understanding.

Rosenshine's Principles of Instruction

What are the Principles of Instruction?

The Principles of Instruction are based on evidence from cognitive science and research into the practices of 'master teachers' amongst other things and were published in 2010. They are grounded in the daily practice of many teachers & there is a considerable overlap with the ideas outlined in Cognitive Load Theory.

Why do they matter?

The Principles of Instruction provide a guide that can be used to develop classroom practice. Their generic nature means that individual teachers can develop, adapt, and practise an element of instruction that they feel would benefit their class and/or their own professional development
(it is not expected that every principle would appear in every lesson).

What can we do?

Sequence, Model & Scaffold

Break learning into small steps.
Model & explain clearly using concise, appropriate vocabulary.
Provide scaffolds for tricky tasks.

Ask Questions

Ask lots of questions to check children's understanding. Look out for misconceptions.
Provide precise feedback

Practice

Plan guided & independent practice opportunities for children to consolidate learning to make it stick.

Review

Review essential learning from lesson to lesson & beyond to make sure knowledge, understanding & skills are remembered.

'Why Don't Children Like School?' Daniel Willingham

Memory is the residual of thought

Think about what children are most likely to think about in the lesson – this is what they are likely to remember. Design learning tasks that take this into account.

The power of story

Children know how stories work making them easy to remember. Think about ways that lesson inputs can be turned into 'stories' that will help children remember.

Understanding is remembering in disguise

We understand something that we can remember. We understand because we can retrieve the information from our memory & make links with the new learning

Shallow knowledge comes before deep

Learning facts & ideas is often needed so that connections can be made, allowing for deeper knowledge. It's important to remember that true 'deep' knowledge takes time.