Edale Rise Primary and Nursery School

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Primary & Nursery School

A Knowledge-rich Curriculum

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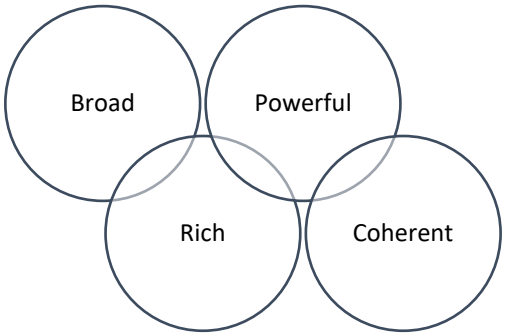
What is a knowledge-rich curriculum?

Our knowledge-rich curriculum is purposefully designed to ensure that children gradually develop and retain a broad and rich body of powerful knowledge that allows them to think deeply and creatively about the world in which they live. Our knowledge-rich curriculum can be understood as being broad, rich, powerful and coherent.

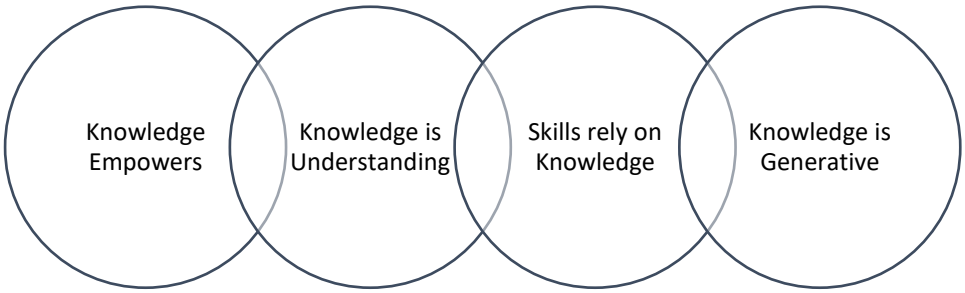


- Broad – the knowledge learnt is grounded in science, history, geography and the arts.
- Rich – the knowledge learnt is culturally rich, transferable and valuable to know.
- Powerful – the knowledge learnt allows children to think deeply and creatively about the subject matter.
- Coherent – the knowledge learnt is strategically sequenced and revisited to develop rich, detailed schemas.

(Adapted from Didau, *Making Kids Cleverer,* 2018)

Why focus on knowledge?

Children who have a broad and rich knowledge base by the time they leave primary school are significantly more likely to be academically successful at secondary school (Hirsch, 2018). Many children begin primary school with a deficit in knowledge and vocabulary (Hart and Risely, 1995) and unless this deficit is addressed at primary, it is highly unlikely these children will catch up at secondary (Fisher et all 2011). It is our duty as primary educators to empower our children with the knowledge and vocabulary to be powerful, informed citizens and academically successful.

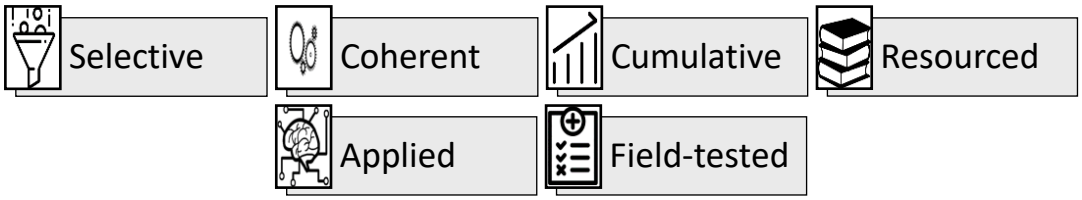


(Adapted from Ofsted Curriculum Workshop, 2018)

- Knowledge empowers: children from disadvantaged backgrounds have the most to gain from a knowledge-rich curriculum and the most to lose in its absence (Hirsch, 2018).
- Background knowledge is the strongest predictor of reading comprehension (Recht and Leslie, 1987). In teaching children knowledge of the world we develop rich and detailed schemas that allow them to understand a rich and wide range of texts (Willingham, 2015). Teaching knowledge is teaching reading.
- Knowledge is a prerequisite of any skill. In order for children to think deeply and creatively about an issue, they must first have a deep and secure understanding of that issue (Willingham, 2007). Experts in any field rely heavily on rich and developed schemas of knowledge (Hirsch, 2018).
- Knowledge is highly transferable between contexts and is generative i.e. the more you know the easier it is to learn new things (Willingham. 2007).

How is the knowledge-rich curriculum designed?

Our aim is to produce a world-class knowledge-rich curriculum that is selective, coherent, cumulative, fully resourced, applied using the principles of cognitive psychology and field-tested. At Edale we regularly revise and update our curriculum in response to our on-going evaluation of its impact.



(Adapted from E.D Hisrch *Why Knowledge Matters,* 2018)

Selective

Time in school is finite. Selectivity, therefore, is critical in setting topics that make the curriculum powerful and so teachers can capitalise on their time with their children. The topics chosen provide children with the most enabling knowledge possible. Some curricular topics are essential to the subject matter itself, such as photosynthesis or evaporation. Other topics, such as the British Empire, are essential to shared cultural identity. Still others, such as *A Christmas Carol* are essential to equality.

Coherent

Coherence within year groups is important for substantive learning and vocabulary acquisition. The reading and writing of non-fiction is taught primarily through our foundation curriculum and science, rather than stand-alone non-fiction English lessons. Links between these academic subjects are also established where appropriate to ensure rich schemas are developed. Sustained topics requiring the same "word fields" last for approximately six weeks to ensure children have had sufficient time for this knowledge to be embedded in long-term memory (Binton, 2000).

Cumulative

Designing a multi-year cumulative sequence of topics is important to ensure children develop their schemas of a subject progressively as they move through school and that prior learning is developed upon and revised. Learning within a year is routinely assessed through low-stakes quizzes to ensure that all children develop and retain the knowledge required to be successful in the following year. Our core goal is that children know more and remember more.

Resourced

Topics in history, science and geography are fully resourced with a high-quality non-fiction books. This provides teachers with the subject knowledge to teach the topic effectively, which is essential to a curriculum's success (Coe et al, 2014). These texts are also highly engaging and well written which sets out a high academic expectation for all children (Rosenthal & Jacobson, 2008).

Applied

The application of the knowledge-rich curriculum is paramount to its success. Teachers apply their understanding of cognitive psychology to create rich and meaningful learning experiences. This is further elaborated upon in the next section.

Field-tested

Finally, the curriculum is field tested. Only actual experience in the classroom can determine how successfully topics interact and reinforce one another and how much time they might require. Our knowledge-rich curriculum is therefore constantly evolving and improving.

How is the knowledge-rich curriculum applied in the classroom?

The application of the knowledge-rich curriculum is consistent across the school and is informed by research in cognitive psychology. Learning only takes place if there is an alteration in long-term memory (Sweller et al, 2011). The purpose of this model is to ensure that the knowledge of the unit is embedded into the long term memory of every child in the class. This model is referred to as 'Teaching for Knowledge'.

Teaching for Knowledge

Curriculum Documents and Knowledge Organisers

Our curriculum documents set out in explicit detail exactly what declarative and procedural knowledge we want our children to learn. The knowledge organisers which teachers then make act like a map with which the teacher and children can use to navigate their way through a unit. They can be used to aid planning, as a quizzing tool in lessons, as an assessment tool for teachers and to help communicate what learning has taken place in school with parents at home.

Teacher Instruction

Teachers at Edale explicitly and deliberately teach the knowledge through teacher-led instruction utilising Rosenshine's Principles of Instruction (Rosenshine, 2010), dual coded presentations and quality teacher-talk. Teachers check children's understanding through questioning and mini-quizzes and then respond to the children's feedback.

Reading for Learning

Reading is an essential component of the knowledge-rich curriculum. Teachers utilise their expertise in whole-class reading to reinforce or complement the learning of the instruction. In younger year groups, the bulk of the reading will be done by the teacher as children's listening comprehension is superior to their reading comprehension (Sticht and James 1984), in older year groups children will be expected to read along or read independently.

Activities for Learning

Utilising their understanding of the working memory model (Baddeley and Hitch, 1974), desirable difficulties (Bjork and Bjork, 2011) and Shimamura's MARGE model, teachers create meaningful learning activities that require effort for children to retrieve and apply what it is they have been taught thus strengthening the information's storage strength. Teachers use a range of activities, which vary according to the specific subject being taught.

Spaced Retrieval

Retrieval practice has been shown to have a significant impact on knowledge retention (Ebbinghaus, 1985). Teachers make use of retrieval practice to ensure knowledge is learnt and retained over time. Teachers use low-stake quizzing and various others methods of retrieval practice throughout a unit of work to ensure long term retention of material. Retrieval practice is also used to revise material from previous units within and between year groups.

Take Care Work

Children should apply the knowledge developed in a unit to produce a piece of work which encapsulates our 'Take Care' ethos. The piece should clearly exhibit the learning that has taken place and result in an ambitious and well-informed piece of work. It should be crafted and presented beautifully so that children can take pride in this outcome of their learning.

Reading and Writing across the Curriculum

All non-fiction writing and reading is taught through history, science, geography and RE. This accounts for approximately half of all writing and reading lessons. This gives a clear purpose for reading and writing: to learn and reinforce knowledge and for a child to present and evidence their learning.

The other half of the writing and reading curriculum is taught through fiction and poetry. In these fictions units, links are made to the topic where appropriate; however, the focus of these session is to study and enjoy high quality literature and write fiction and poetry that captures the interest and imagination of the reader.

Teachers are not restricted by their topics in their choices of literature to study. It may be entirely appropriate for the fiction work to inspire and lead a mini-topic to provide context for the piece. For example, if a teacher chooses to study an extract from *Treasure Island* then it would be highly beneficial to conduct a short topic on piracy in the 18th century to create synergy between the fiction and non-fiction work.

'Mode B' Teaching

The majority of teaching at Edale outside of the Early Years and year 1 could be categorised as traditional, rooted in the principles of cognitive psychology with the teacher instructing pupils and checking for understanding. However, there is still a place for another style of teaching where teachers facilitate learning using less instructional methods. This is referred to as 'Mode B' teaching (Sherrington, 2017). It includes collaborative learning and enquiry projects amongst other less traditional methods. However, in order to ensure that they result in effective learning there is still a rigorous method to how these approaches are implemented at Edale informed by the work of Sherrington in *The Learning Rainforest* and Sherrington and Caviglioli in *Teaching WALK THRUS.*

Collaborative learning	In addition to the social benefits of group work, research has shown that, when implemented well by the teacher, group work can yield significant learning gains for children.
Enquiry projects	An enquiry process can be a powerful experience for children, learning how to ask questions pursue a process that leads them to an answer or to ask even more questions. This process needs structure and guidance and the appropriate level of prior knowledge.
Oracy: debates	An excellent way to deepen children's understanding is to teach them how to engage in structured exchanges through debate. This develops key oracy, encourages them to consider others' perspectives and reinforces the knowledge debated.
Oracy: instructional inputs	After developing proficiency with a topic, children take the role of the teacher and teach the knowledge themselves. This approach can lead to significant gains for long-term recall.
Independent learning: pre-reading	Certainly for older children, it can be hugely beneficial to allow children to read without a teacher input. This means the teacher can use the time they would have used to impart knowledge to check for understanding and misconceptions.
Trips and Visitors	Trips and visits are a key part of our curriculum. They provide children with exciting, real life experiences that inspire and embed knowledge acquisition. Children in every year group take part in a school trip at least once a term and regular use of the local area is encouraged throughout the year.

Curriculum Implementation: Appendix 1

Knowledge Organisers

Key Points:

- **Planning tool**
  - sets out all of the core facts that must be learnt to understand and ***master*** a particular topic
- **Assessment tool**
  - allows you to quickly check that pupils are learning exactly what you hoped they would
- **Quizzing tool**
  - helps pupils to recall with lightning speed the key information needed to make sense of the topic
- **A Communication tool**
  - They can be sent home and used by parents to scaffold conversation with children about their learning

Guidelines*:*

1. It should be the schema of your topic: it should encapsulate all the knowledge and vocabulary required to truly master a topic
2. Facts are chunked into different sections: key vocabulary, important people, timeline etc.:
3. Facts are kept short and snappy: 'Winston Churchill: British Prime Minister during WWII from 1940-1945'
4. Only images/diagrams/maps that are absolutely necessary are included
5. They are kept t to a single side of A4

Teacher Instruction

Effective use of Dual Coding (Paivio, 1973; Weinstien et al. 2019)

1. Avoid overloading PP's with text
   - Reading and listening comes through the same channel
2. Ensure the visual used is relevant to the content being studied
   - They can easily become a distraction
3. Ensure images are well placed, spaced and logically ordered
   - Haphazard spacing, ordering can be extremely distracting for some
4. If using text, ensure to use 'animation' to chunk it
   - This is avoids cognitive overload

Spaced Retrieval

Key Point: provide opportunities within and between lessons for children to regularly retrieve the knowledge they've learnt

Types of activities include (but are not limited to):

- **MCQ's**
  - Use three plausible response options
    - Two plausible but incorrect
    - Consider using misconceptions/common errors
    - Ensure content is related
  - Create items that require the engagement of specific cognitive processes
    - Which best defines X?
    - Which distinguishes X from Y?
    - Which is the best explanation as to why X happened?
    - How is X similar to Y?
  - Avoid using "None-of-the-Above" and "All-of-the-Above" as response options
  - Create desirable difficulties
  - Give feedback
- **Book Swaps**
  - Child A and B review A's workbook
  - B picks a page and asks A to explain what they remember about the topic
  - A & B then read it together
  - A adds any detail missed
- **Mind Maps**
  - Children create mind-maps that summarise the key points of learning from a specific topic
- **Silent Self-Quiz / Paired Quiz**
  - Either on their own or in pairs, children are quizzed in key facts and vocabulary from knowledge organisers
- **Explain the Picture**
  - Children are given a picture or series of pictures and are asked to explain their relevance to a specific topic
- **Demonstration / Performance**
  - Children present a demonstration, performance or presentation to a group or whole class which exhibits their understanding of a specific aspect of a topic
- **Elaborative Interrogation**
  - The teacher gives children a 'How' or 'Why' questions which requires an elaborate explanation
  - Why does this happen? How does it work? Why does it work? Why did she say that? Why do you use that structure? Why is that the most important reason? How do you know?
- **Tell the Story**
  - Lots of knowledge forms a narrative structure – a series of events, a process, cause and effect. The practice is telling the story to someone who can verify its accuracy