Hunningley Primary Academy
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Design and Technology

Intent:

The Design & Technology curriculum at Hunningley Primary Academy provides children with coherent, knowledge of DT and the wider world, through the framework of three vertical concepts. Beginning first with the National Curriculum, we have designed our curriculum as a progressive model around these vertical concepts which provide a concrete lens through which to study and contextualise design and technology, as well as small steps to help pupils to gain a deep understanding of complex, abstract ideas:

Investigate, disassemble and evaluate

How have materials and components been used? How has the product been made? Why has it been made this way? What are the different parts of a product called and what does each do? How does the way a product works relate to its intended purpose?

Focused practical task

How can materials, structures and techniques be tested? How can materials and structures be joined? Where might materials and structures fail?

Design and make, evaluate

How will ideas be explored, developed, communicated and modelled in a variety of ways? How will a product be made? what materials, equipment and processes will be used? What alternatives are there, if initial attempts fail? How well did the product work? What were the strengths and areas for development? How well did the final product relate to its intended purpose?

Our curriculum is designed in a way that embeds core disciplinary knowledge, and the ability to approach challenging, design questions.

- Marking out and cutting skills
- Fixing and joining skills
- Mechanical and control skills
- Finishing skills, including food hygiene
- Related language skills

Our curriculum is designed in a way that provides pupils with the opportunity to develop design concepts, and to evaluate products against their intended purpose.

Implementation:

Early Years is the first opportunity to develop our children's curiosity for DT. We implement our DT curriculum by following the interests of the children through the Early Years Foundation Stage Statutory Framework which aims to guide children to make sense of their artistic and cultural

awareness and supports their imagination and creativity. Pupils have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what pupils see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts.

In Key Stage 1, through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. This ensures a firm foundation and understanding of DT, ready for Key Stage 2.

In Key Stage 2, the DT curriculum is delivered through a progressive model which follows the vertical concepts required to be applied for new learning.

When teachers plan a unit, they begin with the end in mind, having clarity about exactly what they want the children to learn. Outcomes are clear and detailed, and each lesson has a concise learning intention. We are determined that children develop the progressive skills of an engineer throughout their time at Hunningley. Substantive knowledge rich lessons where children build on prior learning and situate knowledge within carefully constructed concepts are delivered following Rosenshine's Principles of Instruction. Teachers create knowledge organiser which outline the key substantive knowledge and vocabulary which all children must master with each unit being carefully planned for progression and depth.

The curriculum is well designed and developed to be ambitious for all leaners and to ensure children know more and can remember more. Based upon up-to-date research on cognitive load and on how children learn most effectively, determined our approach to implementing our DT curriculum. We take an approach of spacing out new knowledge combined with interleaving and retrieval practice to ensure learning sticks. Each unit has built in practice, retrieval and reinforcement of the key vertical concepts to ensure knowledge sticks in the long-term memory. For learning to stick in the long-term memory we teach DT knowledge in meaningful contexts and in a connected way.

For each unit of learning, teachers plan for and children experience:

- The disciplinary knowledge needed to be successful engineers including the use of primary and secondary sources.
- Co-operative learning using Kagan strategies to ensure high levels of accountability and engagement for all children.
- A careers pathway that highlights the range of jobs and careers that learning in history can lead to.
- Educational visits, visiting experts and artifacts to enhance the learning experience.
- Classroom working walls which detail; current, prior and future learning, the substantive and disciplinary knowledge children will learn, dual coded key vocabulary, the vertical concept the area of learning falls within and links where applicable, to our sustainability curriculum.
- To bring learning to life, lessons or parts of lessons take place in our immersive classroom to enable children to see first-hand the curriculum they are learning at that time in their own school environment.
- Questioning is used to allow pupils to consolidate knowledge and understanding where necessary or to apply learning in an open manner.
- Opportunities for all pupils to see themselves reflected in the curriculum by exploring significant landmarks and engineering projects in their local area, allowing them to achieve a sense of relevance and the impact upon the community.

• To enable children of all abilities to access the curriculum, additional models and scaffolds are provided. Teachers reference the 'DT Four Broad Areas of Need document' to ensure their planning meets the needs of all children; changes to pedagogy are also considered and changes to content are made in consultation with the DT Lead and the SENCO.

Impact:

Our Design and Technology Curriculum is high quality, well sequenced and is planned to demonstrate progression year on year, giving pupils the skills and knowledge and vocabulary that they need to move forward in their learning, alongside opportunities to apply their knowledge to different situations. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:

▪ Pupil discussions about their learning; which includes discussion of their thoughts, ideas, processing and evaluations of work.
▪ A reflection on standards achieved against the planned outcomes;

Our curriculum is designed in a way to be suitably challenging; we believe that if children are keeping up with the demands of each lesson, that they are making good or better progress.

In addition to this, we measure the impact of our curriculum through the following methods:

• A pre learning quiz to ascertain whether children have mastered the prior learning needed to enable them to access the planned unit. This takes place two weeks prior to the start of new learning to provide time for any prior learning gaps to be addressed. This seen in pupil books within a yellow border.

• A reflection on standards achieved against the planned outcomes.

• Low stakes quizzes.

• Pupil's books and pupil discussions about their learning.

• Scholarly writing opportunities are planned to provide children with the opportunity to write at length to demonstrate their knowledge gained at the end of the learning sequence.

• Teachers constantly interact with children assessing their thinking, knowledge, and understanding. Feedback is actionable, precise and acted on by the children in every lesson.

• Teachers review learning during learning, spaced after the unit has been taught, and after protracted periods of time. Recall and retrieval practice demonstrates whether learning has been remembered.

• Evaluating the final product against the expectations and prior learning through the use of the disciplinary knowledge.

Our Design and Technology curriculum is also planned in a way which promotes the cultural capital of all our children. We enhance our curriculum especially for the most disadvantaged by organising guest speakers and promoting careers in design and technology. We contribute towards the cultural capital for the children in terms of the knowledge and skills they need to be successful learners and in wider life. Cultural capital in DT has been identified in terms of the knowledge useful to our lives and we are aware that powerful knowledge will put children at an advantage.