Askwith Primary School

Design and Technology rationale

The fundamental role of design and technology at Askwith Primary School lies in allowing children the opportunities to apply their creativity and their imagination to create products to solve real and relevant problems. Design and technology allows children opportunities to create products for their own needs and wants along with the needs, wants and values of others.

Design and technology is an evaluative subject and children are given the chance to draw on the disciplines of other subjects, including mathematics, science.

"High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation."

National curriculum, 2014

Intent	Implementation	Impact: to be reviewed at the end of each year
• Mitigate any learning loss of knowledge gained pre COVID-19. • Mitigate any learning loss due to closure/non-attendance	• Recalls of the units taught up until March 2020 will be undertaken in autumn term. Any gaps in knowledge will be addressed. The units will then be recalled six weeks and twelve weeks later to ensure that there has been an alteration in LTM. • Essential knowledge that was missed due to COVID-19 closure will be either included in the current year's units where relevant or taught as separate units	
• The planning, teaching and assessment of the design and technology	• Planning and learning journeys consider the essential knowledge	

curriculum is informed by the nine principles of cognitive science (Daniel Willingham)	and how to guide the children's thinking. Working memory capacity and the alteration of long term memory is considered when planning and teaching The acquisition of new vocabulary is key • Prior knowledge is assessed, misconceptions addressed and new knowledge builds on pupils' connected knowledge • Pupils have opportunities to deliberately practise newly acquired knowledge • Pupils articulate how they know more, remember more and therefore do more • Instil a growth mindset ethos by talking about successes and failures in terms of effort not ability • Learning journeys are planned to build children's knowledge through all of the steps in the design process • We have a growth mindset ethos which talks about successes and failures in terms of effort rather than ability	

• Design and technology is taught throughout the school through deliberate practice in a supportive environment. This enables children to improve their fluency leading to mastery of design and technology and an alteration to LTM • To provide children with the knowledge to develop ideas from a plan, to making a product and then to evaluate what they have made • Ensure the design and technology curriculum builds children's knowledge of a range of materials and how they can be manipulated to create useful products for a specific purpose • To provide children with an understanding of the technologically developing world we live in, including how key individuals in history have changed the way we live	• Rolling programmes are carefully planned to show progression in knowledge throughout the curriculum for each class, and to build knowledge from one class to another • The rolling programme will ensure that at least one design and technology block has an in-depth key individual study.	

Substantive and disciplinary knowledge in design and technology

Substantive knowledge

In design and technology, this is based on the knowledge of four key elements of the process of design (design, make, evaluate and technical knowledge). All of these elements will be taught in all year groups. These are:

Design	Know how to design a product that is purposeful, functional and appealing to a specific group.
Make	Know how to cut, join and finish a range of increasingly complex materials, ranging from paper to wood.
Evaluate	Know how to investigate, evaluate and analyse a range of existing products and their own designs based on a specific design criteria. In addition to this, children will know key individuals have helped to shape the world in which we live in.
Technical knowledge	Know how to apply their knowledge of specific materials to meet the criteria listed above in the design, make and evaluate stages.

Disciplinary knowledge

In design and technology, disciplinary knowledge is the process of enabling children to use their substantive knowledge of products and materials around them to make links between and across different areas of the curriculum. Knowledge in design and technology will equip the children with the opportunity to explain how and why products have changed over time and how they might be further improved in the future. They can use their knowledge and understanding to suggest how existing products may be improved with the advances in modern technology. Children will demonstrate that they have the cultural capital to become global citizens in an ever changing and technologically advancing world.

Creativity in design and technology

"Creativity is the act of turning new and imaginative ideas into reality, the tendency to generate or recognise ideas, alternatives or possibilities that may be useful in solving problems, communicating or in finding gratification or entertainment."

P. Woodward, TES 2016

"Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values."

National Curriculum, 2014

There are many opportunities for children to demonstrate their creativity in design and technology. This can be through the design phase, the making phase – where they make additions or alterations to their plan, or during the evaluation phase where they can think how the product may be further improved. It is a subject which has wide ranging opportunities for natural cross-curricular learning, whether that be through planning using exploded or cross-sectional diagrams, scientific investigation into the properties of different materials in a range of situations, the historical changes in technology and the advancements made by specific individuals or detailed mathematical measurements of lengths and angles.

British Values

Design and technology at Askwith Primary School developed children's understanding of Fundamental British Values and how to express themselves in a respectful way. From substantive knowledge of how to follow rules when using tools to stay safe to providing children the opportunities to explore their own individual liberty through expressing themselves through the design process, children will see how British Values are interweaved through the whole design and technology curriculum.

Assessment in design and technology

Children will be assessed prior to a unit of design and technology beginning and the lessons will be planned to teach from any misconceptions they may have. This prior knowledge assessment allows children the opportunity to demonstrate any connected knowledge held in the long term memory. They will also be assessed at set intervals after the end of a unit (2 weeks, 6 weeks and 12 weeks), to recall this knowledge and to ensure that the knowledge has been fully embedded in their long term memory. In addition to this, there will be planned opportunities for recaps throughout the unit to ensure knowledge is retained.

In the academic year 2020-2021, all of the previous year's learning will be recalled in the first weeks of term in order to mitigate any lost learning due to COVID-19. Any misconceptions or gaps will be identified and addressed. Two

further recalls will be undertaken six and twelve weeks later in order to ensure that there has been an alteration in LTM.

Reviewed January 2021