Design and Technology at Ashton Gate Primary School

Design and Technology (DT) is learning how to design and make things, understand how products work, and solve problems by creating practical and creative solutions.

Intent

In Design and Technology, we inspire pupils to be creative problem-solvers who aren't afraid to try new ideas. They learn to take an idea from a first sketch all the way to a finished product, developing resilience and confidence along the way. Our projects help children see how design shapes the world around them and encourage them to become thoughtful, innovative creators. By combining what they know about past and present designs with hands-on skills, pupils learn to design, make, and improve their own products, always thinking about how their work can meet real human needs and make life better.

Our School Drivers

DT at Ashton Gate primary school develops our school drivers in a range of ways.

Cultural diversity
This is embedded and celebrated within projects, whether that be through the links with differing topics or through the discussions of a variety of prominent figures in the field.

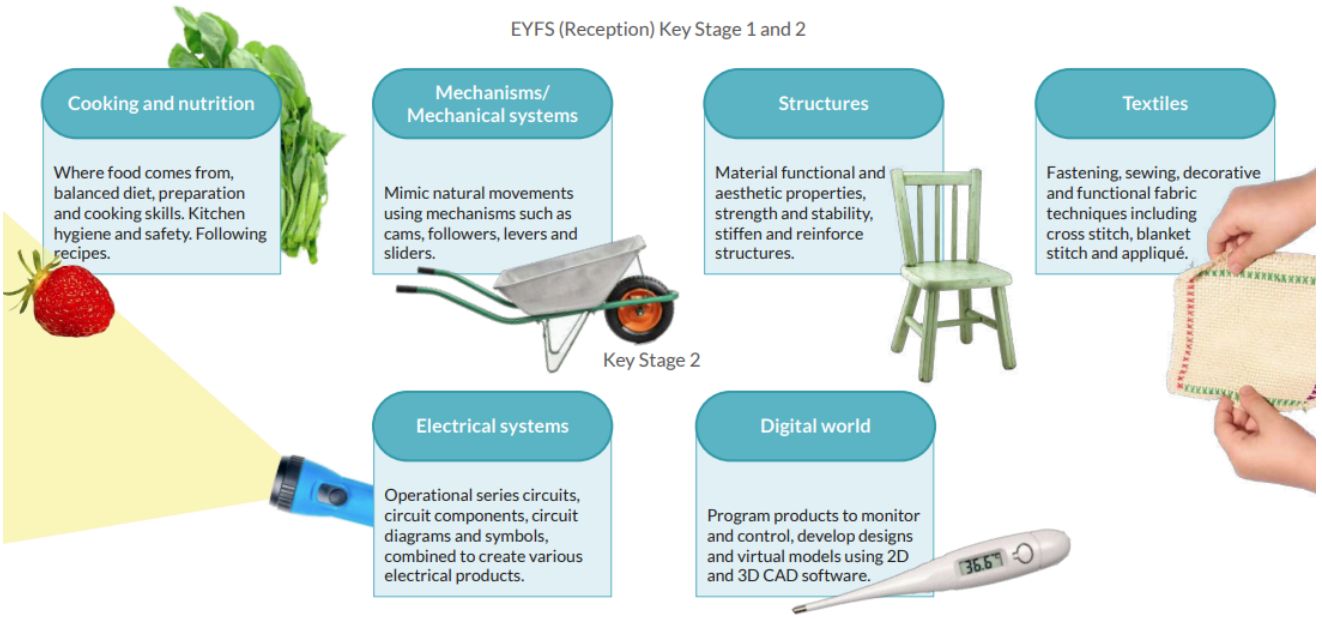
Independence
Children are able to work through projects independently, given the requisite resources and support to do so. This enables the development of problem solving, evaluation and resilience, and the confidence that comes from knowing they can independently tackle challenges alone.

Equity
The curriculum is planned to allow all children to achieve in Design andTechnology and to support their progress.

Growth mindset
DT supports a growth mindset by encouraging children to see mistakes as opportunities for learning. Through designing, testing, and improving their ideas, pupils develop resilience and confidence, understanding that effort and persistence lead to progress. DT promotes creativity, risk-taking, and problem-solving, helping learners value the process of improvement rather than focusing on getting it right the first time. Collaborative projects also teach children to give and receive feedback positively, reinforcing the belief that ability grows through practice, reflection, and perseverance.

The Kapow Curriculum

Our DT curriculum is taught using Kapow. This is an evidence-led curriculum, which covers the expectations of the National Curriculum, where knowledge is built cumulatively and is retrieved regularly to increase the chance that it will be stored in long term memory. Schemes of learning are regularly updated to reflect new research. Substantive and disciplinary knowledge is mapped out across the topics taught in each year group, ensuring children are building on their skills cumulatively. This spiral curriculum structure enables lessons to be accessible and memorable.



- ★ develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- ★ build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- ★ critique, evaluate and test their ideas and products and the work of others.
- ★ understand and apply the principles of nutrition and learn how to cook. (*This aim is linked to the four strands, but is primarily met by teaching units from our Cooking and nutrition key area)

Design

Make

Evaluate

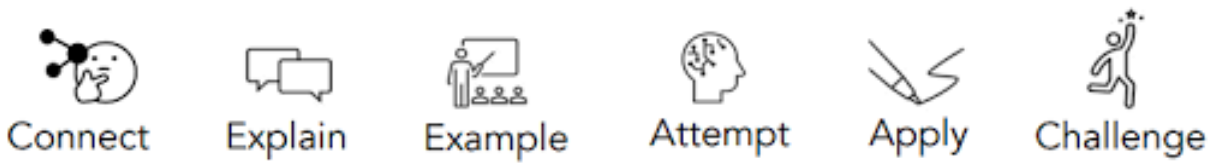
Technical knowledge

		Year 5
		New Gears and pulleys
Skills	Design	• Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. • Using a series of prototypes to refine and improve their designs.
	Make	• Consistently apply safety instructions. • Select appropriate scissors to handle delicate cutting tasks and challenging materials. • Cutting patterns and drawings accurately. • In supervised groups, using hot glue guns safely. • Recognising that hot glue is useful for joining materials that need a strong bond that sets quickly. • Choosing PVA glue over hot glue for its safety when joining materials in less intensive projects.
	Evaluate	• Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design choices impact these aspects. • Assessing their designs against a more complex set of design criteria that includes functionality, aesthetics, user experience, sustainability and cost. • Considering alternative materials, tools or techniques that could enhance the product. • Providing feedback that is helpful, specific, and encouraging. • Incorporating feedback from peers or users improve their product further, explaining the changes they made and the impact they had.
Knowledge	Technical	• That mechanical systems that use gears in everyday objects (eg bicycle, clock). • That gears and pulleys allow us to transfer movement and force from one part of a mechanical system to another. • That gears allow us to increase the output of a mechanism.
	Additional	• That original and innovative ideas are different from what has been made before. • That annotations are detailed labels and comments on diagrams. • That risks are things that might happen. • That hot glue creates a strong bond quickly. • That is often better to choose safer equipment. • That sustainability means thinking about the materials that were used to make a product and how the product was made. • That their final product can still be improved by different materials or techniques. • That evaluating their designs in detail will help them understand its successful and less successful parts. • That feedback should be positive, helpful and specific. • That explaining how they used feedback to improve their design can help them create better products in the future.

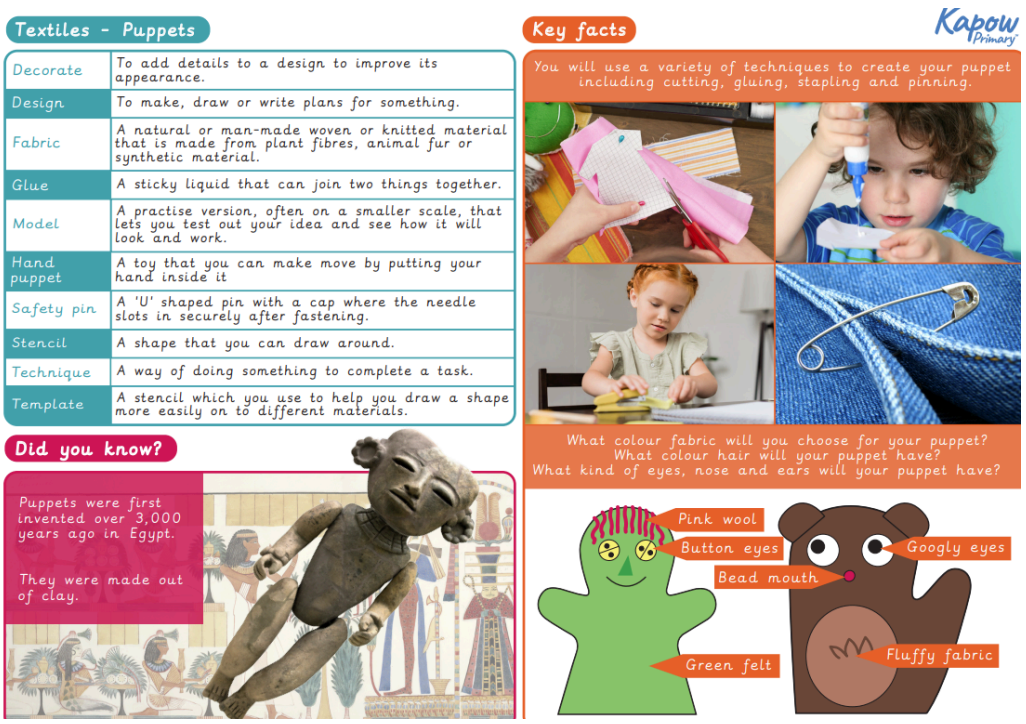
Implementation

The Kapow DT curriculum has carefully-mapped vocabulary combined with a clear progression of both knowledge and skills. This cumulative curriculum design allows opportunities for children to think hard and apply their learning in different contexts.

Teachers will deliver the curriculum using the CEEAAC model of learning. This allows opportunities to retrieve prior knowledge at regular intervals and ensures pupils have the background knowledge that they need for each lesson. Vocabulary is explicitly taught and concepts are explained clearly using examples. Teachers are able to check for understanding when pupils attempt learning, building in learning loops to ensure that pupils are ready to then apply their knowledge independently. All children have the opportunity to be challenged in their DT lessons.



To support vocabulary teaching, dual coding of images and words are used. As well as this, knowledge organisers are used in lessons to aid understanding and support retrieval of prior learning. Teachers are able to use Kapow resources to support their subject knowledge and lesson design, tailoring their lessons to be inclusive for their individual classes.



Subject leaders monitor teaching and learning in DT and collaborate with colleagues across Cathedral Schools Trust to share best practice. Pupils are assessed through retrieval practice, learning loops, and formative strategies such as quizzing, with feedback used to guide teaching. Practical activities, creative projects, and cross-curricular links make learning engaging, relevant, and connected to real-world contexts.

Impact

As a result of our well-structured and carefully planned curriculum, pupils develop a clear understanding of Design and Technology as a process of planning, making, and evaluating. They are able to talk confidently about their ideas, explain the choices they have made, and reflect on how to improve their work. Pupils recognise the relevance of Design and Technology in their everyday lives and are inspired to see themselves as creative problem-solvers who can make a positive impact on the world around them.