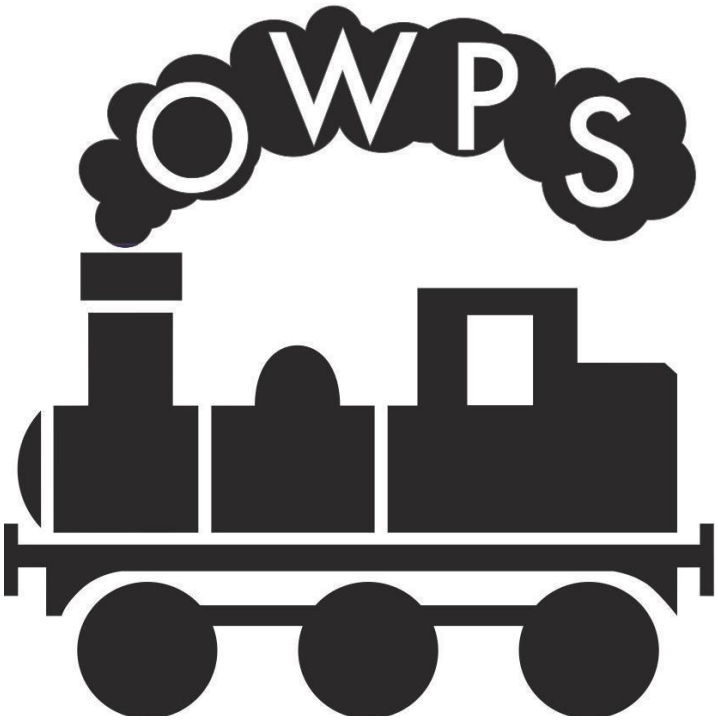
Orton Wistow Primary School



What does DT look like?

At Orton Wistow Primary School, we value the skills and knowledge that we can acquire through the subject of Design Technology (DT). Each year, the children have the opportunity to develop their understanding of electronics, mechanisms, structures, food and textiles and consolidate these areas year on year, with regular occasions for showcasing various skills in STEM events.

During these different topics of DT, all children learn how to cut and join different materials, explore objects and designs to identify likes and dislikes, suggest improvements to existing designs/products and discuss how products have been created, evaluating their own creations at the end of the topic.

This document will outline how Design Technology is taught across our school.

Tom Newton
May 2023

Contents

What does the DT curriculum look like in the Foundation Stage?

DT comes under EAD (Expressive Arts and Design) 'Creating with Materials.'

In the Foundation Stage, design and technology forms part of the learning children acquire under the 'Expressive Arts and Design – Creating Materials' branch of the Foundation Stage curriculum. Children will learn through first-hand experiences. They will be encouraged to explore, observe, solve problems, think critically, make decisions and to talk about why they have made their decisions.

Here are some of the typical learning experiences children will have:

Autumn:

- Explore classroom resources during free flow play and adult guided sessions.
- Learn how to use equipment carefully, eg; scissors, staplers, sticky tape, glue, hole punch, treasury tags.
- Understand what a plan is and that it can be drawn to help with a design.
- Talk about their design.

Spring:

- Learn how to use hammer and saw, practise and tinker.
- Make an object to embed new skills, following children's interests or Easter cross using woodworking tools.
- Make an Easter craft using using media and materials.
- Make pancakes for loved ones

Summer:

- Create for a purpose, make a sign for garden plants
- Design a plan for a scarecrow and follow to make for garden
- Use recyclable materials, design then build a home for a mini beast
- Plan and create a recipe for a teddy bears picnic

What does the DT curriculum look like in Key Stage One?

In KS1, children investigate structures and mechanisms, focusing on exploring objects, engineers and designs to identify their likes and dislikes, suggest improvements to existing designs, explore how products have been created, investigate levers, linkages, wheels and axil use, design (on Purple Mash) and create products using levers, linkages, wheels and axils. Once designed, children must cut materials safely using tools provide, measure and mark out to the nearest centimetre, demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling), demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen) and begin to evaluate their ideas and products against design criteria.

In the spring term, and at every opportunity, children look at cookery books of different chefs and countries, exploring different recipes and foods to identify their likes and dislikes. Once this has happened, children suggest improvements to existing recipes and explore how they have been created. All children are then expected to learn how to cut, peel or grate ingredients safely and hygienically, measure or weigh using measuring cups or electronic scales, assemble or cook healthy ingredients, understand where food comes from and finally, begin to evaluate their ideas and products against design criteria.

During the summer term, the children in KS1 focus on textiles, using a variety of inspirations and research methods, look at designers and discuss their likes and dislikes. When this has occurred, children must model designs using software (such as 2simple), shape textiles using templates, cut materials safely using tools provided, measure and mark out to the nearest centimeter and demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). All children are expected to join textiles using a simple running stitch, colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing) and then begin to evaluate product against a design criterion.

What does the DT curriculum look like in Lower Key Stage Two?

In LKS2, children learn about the transference of forces to choose appropriate mechanisms for a product. Children will then design a moving object with a lever. Children are expected to cut materials accurately and safely by selecting appropriate tools, measure and mark out to the nearest millimetre, apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Modification time will also be given to allow children to choose suitable techniques to construct products, strengthen or to repair items, with an evaluation of the product finishing the project, identifying what they did well and what they would change next time. In Year 4 children apply their knowledge of circuits from their learning in science to create tools that use simple circuits. .

For the textile unit of DT, children research and investigate different designers from around the world, remembering ones from previous units. They are then given tinker time with different materials and must then design their own product, cut materials accurately and safely by selecting appropriate tools, measure and mark out to the nearest millimetre. Once completed, children must select appropriate joining techniques/ resources, understanding the need for a seam allowance, try different stitching techniques and join textiles with the most appropriate stitching. Children must then select the most appropriate techniques to decorate their textile creation and evaluate their product using the design brief.

In the final LKS2 unit of food, children must research a recipe, looking for famous chefs linked to that particular food type and choose what they would like to make, explaining reasons for their choice. They must prepare ingredients hygienically using appropriate utensils, measure ingredients to the nearest gram accurately, follow a recipe systematically, assemble and cook healthy ingredients, taste and evaluate the food, thinking of ways to improve the recipe for next time. Once completed, children must design packaging for their food product on Purple Mash, thinking about their target audience and design brief

What does the DT curriculum look like in Upper Key Stage Two?

In Year Five, the structures and mechanism unit consists of learning about the uses of gears and pulleys and then design a toy for a child that uses these. They experience cutting materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). To do this, children must be able to show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper), create innovative designs that improve upon existing products and finally, evaluate the design of products so as to suggest improvements to the user experience.

Year Six create circuits using Crumble kits that employ a number of components (such as LEDs, switches, buzzers and motors). Year Six will then write code to control and monitor models or products, use innovative combinations of electronics (or computing) and mechanics in product designs, design with the user in mind (motivated by the service a product will offer rather than simply for profit). Products will be constructed through stages of prototypes, making continual refinements, ensuring products have a high-quality finish, using art skills where appropriate and evaluate the design of products so as to suggest improvements to the user experience.

During the textile unit, UKS2 research inspirational designers and collect ideas for own design, create objects (such as a cushion) that employ a seam allowance, join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration), use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion) and evaluate their product, looking at how much they would cost their item for and how it fits the design brief.

Finally, children in UKS2 complete their food unit children will design their own menu for a healthy, home cooked meal from different countries. During this, there is an understanding of the importance of correct storage and handling of ingredients (using knowledge of microorganisms), measuring accurately and calculate ratios of ingredients to scale up or down from a recipe. They will demonstrate a range of baking and cooking techniques, create and refine recipes, including healthy seasonal ingredients, methods, cooking times and temperatures, understand how a variety of ingredients are grown, reared, caught and processed and know how to apply principles of a healthy and varied diet. Children will systematically follow a recipe, assemble or cook healthy ingredients, taste and evaluate the food, thinking of ways to improve the recipe for next time.

What does STEM look like in our school?

Along with this, we also complete a termly STEM event, which you can view at #owpsSTEM by visiting the QR code on the DT implantation display. These events focus on real-life problems that children at Orton Wistow are encouraged to solve using innovate and creative inventions. Our STEM ambassadors lead these sessions and collect learning at the end of the session. Previous whole-school STEM events include an 'Action Against Stunting' invention for delivering healthy food to remote countries suffering from child stunting and the 'If I were an engineer' competition led by Primary Engineer. We also

have visitors to encourage #girlsinSTEM and recently had an UKS2 afternoon of engineering and problem-solving linked to local business Perkins.