

Design and Technology – Reviewed 2022

Curriculum Intent and Vision Statement:

Design and technology is an inspirational and practical subject. Using creativity and imagination, pupils at Shottermill Junior School design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world.

- Where possible, Design and Technology has a cross-curricular focus. In Year 3, puppet making is linked to A Midsummer Night's Dream (English) and card making is linked to Christmas (RE). In Year 4, night lights are linked to the electrical circuits topic (Science). In Year 6, embroidery is linked to the WW2 topic (History) and their educational visit to Chessington World of Adventures (design a ride).
- As an International School, an opportunity to explore food from other countries is provided, which will help our children to develop understanding of other societies and cultures. Children make pizza in Year 3 and stir fry / smoothies in Year 4, which also links to our Healthy Eating week.
- Children will be taught to understand and consider seasonality when choosing ingredients across all year groups.
- The topics taught will link directly to the National Curriculum Design and Technology Key Stage 2 programme of study but will also build on the knowledge, skills and learning experiences children have gained whilst at Shottermill Infant School.

Implementation of Design and Technology at our school:

Depending on the topic being taught, children either receive 1 hour of DT a week for half of a term. However, for some practical topics, the lessons may be condensed and taught in a block over the course of a day and a half (or approximately 6 hours). This helps with use of shared resources or equipment, and ensures that time is not wasted in clearing up / packing away resources; we often invite parent volunteers in to assist with supporting children when working practically also.

The following educational trips and special activities will enhance the teaching and learning in this subject:

In Year 3, the children visit a pizza-making restaurant, to experience a 'hands on' pizzas making experience.

Children in Year 5 visit the supermarket to research soup.

In Year 6, the children visit Chessington World of Adventures theme park. This is the term during which they research, design and construct their own ride.

Scheme of work to be taught:

Over the course of Key Stage 2, children are taught to:

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products
- generate, develop, model and communicate their ideas through discussion and plans

Make

- select from and use a wider range of tools and equipment to perform practical tasks
- select from and use a wider range of materials and components

<p>Evaluate</p> <ul style="list-style-type: none"> • investigate and analyse a range of existing products • evaluate their ideas and products against their own design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products • understand and use electrical systems in their products <p>understand and use coding in their products</p>	
<p>Year 3</p> <p>Cards (Autumn Term)</p> <ul style="list-style-type: none"> • Use research and develop design criteria to inform the design of a functional and appealing product that is fit for purpose. • Children evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. • Children will develop their fine motor skills using scissors and split pins. • Children understand the function of a split pin to create a moving card. <p>Finger Puppets (Spring Term)</p> <ul style="list-style-type: none"> • Pupils select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They also consider their functional properties and aesthetic. • Pupils then use these finger puppets to act out a Midsummer Night’s Dream in English lessons. • Children will develop the skills of sewing using overstitch and blanket stitch with an option to use running stitch as an extension activity. <p>Pizza (Summer Term)</p> <ul style="list-style-type: none"> • Pupils investigate and analyse a range of existing products and select appropriate ingredients according to a ‘wish list’ from their Year Two buddy, in order to create a pizza for their buddy and ease the buddy’s transition to SJS. • Children develop the skills of slicing, dicing, grating, weighing ingredients, kneading, flattening and shaping. 	<p>Year 4</p> <p>Desk Tidies (Autumn Term)</p> <ul style="list-style-type: none"> • Pupils will select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic. • They then learn how to stiffen the construction using cardboard layers <p>Night Lights (Spring Term)</p> <ul style="list-style-type: none"> • Pupils develop the skills of measuring in mm, using G Clamps, saws and bench hooks. • Children will be measuring with and ruler and marking with a set square to prepare them for secondary school. This will link to maths and mm/ cm conversion. • Pupil learn to understand and use electrical systems in their products <p>Stir Fry/ Smoothies (Summer Term)</p> <ul style="list-style-type: none"> • Pupils learn to select from and use a wider range of tools and equipment to create a healthy meal or smoothie, which links to Healthy Eating week. Children peel, chop and select healthy food. They also learn about seasonality and the importance of limiting food miles.
<p>Year 5</p> <p>Shelters (Autumn Term)</p> <ul style="list-style-type: none"> • Pupils will investigate existing shelters to design their own shelter. • Pupils will select material to use and evaluate their own and others’ work. • The children learn about triangulation to reinforce a structure. This triangulation is related to bivvy bags used for survival in the wild. • The children consider and choose from materials to ensure a structure is water and wind proof and is reinforced well enough to hold 1kg in weight. <p>Soup (Spring Term)</p>	<p>Year 6</p> <p>Bread Making (Autumn Term)</p> <ul style="list-style-type: none"> • Pupils research, design and make aesthetically appealing and healthy bread. • The children learn about the importance of kneading, rising and the importance of yeast to ensure this happens. • The project is linked to the seasonality of wheat and the importance of food miles is reinforced. Children are expected to draw on previous learning across KS2. <p>WW2 Mend and Make Do (Spring Term)</p>

- Pupils investigate current soup products and design their own with focus on knife skills and an appealing end product.
- Children compare the health and cost benefits of types of soup which include canned and fresh products.
- Children have understanding of seasonality and food miles reinforced.

Moving Toy (Summer Term)

- Pupils understand and use mechanical systems in their products to create a functioning toy.
- Children will build on the skills of using saws, set squares, G Clamps and bench hooks.
- Children will be introduced to using glue guns.
- They will learn about the concept of cams and select the most appropriate one for their design.

- To link with their WW2 topic in History, pupils make a teddy bear using scraps of old clothing and buttons. Pupils will master sewing on buttons as well as sewing a pattern inside out for a neater and more appealing finish.
- Children build on the running stitch and back stitches skills introduced in year three. They then develop the skill of blanket stitch and are challenged to also learn chain stitch.

Design a Ride (Summer Term)

- Children use electrical systems (such as motors) to design a ride, linking to their trip to Chessington World of Adventures.
- Children build upon their knowledge of Crumble kits that they worked with in year five and expand this knowledge to create a fully functioning and pre-coded ride.
- Children learn how to code their rides to change direction, have start and stop traffic lights and make considered sounds. They choose which of these are relevant to their ride.