

Design and Technology

Edmund Waller
Curriculum

Intent

Implementation

Impact



Know, Explore, Communicate

Intent

At Edmund Waller, we recognise the importance that Design and Technology plays in the curriculum and are committed to providing all children with opportunities to engage fully in DT. We want our children to design and make products that solve real and relevant problems, for a specific purpose, taking into consideration the users wants and needs. Our DT curriculum builds on children's prior knowledge and allows them to re-visit prior learning. Our DT programme is in line with our school values:

Humanity

We help children to build self-esteem, confidence and resilience by encouraging them to work collaboratively and independently in an environment where they feel safe to make mistakes and learn from them.

Creativity

Our curriculum encourages children's creativity, allowing them to take risks and express themselves through their designs. Children are encouraged to create designs that communicate their ideas to others. Children work collaboratively to problem solve.

Ambition

All children are encouraged to be ambitious in their designs and use the process of evaluation throughout the design cycle to support them to make changes. We ensure there is equitable access to teaching and opportunities for all learners. All lessons build upon previously learned skills to ensure that children are always seeking to improve and develop their art skills and knowledge.

Implementation

Planning

In DT, we want children to know the facts and information needed to form a full understanding both how a product is created and its purpose in society.

Declarative

Children will learn to design products based on a specific criteria, for a specific user, make and evaluate the products they have made.

Procedural

Procedural knowledge is the skills needed in order to create a final product, for example learning to sew a running stitch to join two materials together. Children learn specific skills that build upon prior learning. They are given the opportunity to practise these skills in class.

Experiential

Children have a dedicated DT lesson time to develop their DT skills. They will make a prototype for each of their designs (either individually or in groups) and at least once every year will go on to make a final product taking into account any changes they needed to make after evaluating their prototype.

Throughout their time at Edmund Waller, children are exposed to a range of practical experiences that promote creativity through a range of fun and engaging lessons. Each planned unit of work follows clearly the design process: research, design, make and evaluate. Within these units, children will be taught a range of skills and be made aware of health and safety issues where applicable. Children will problem solve and develop their learning independently and as part of a group which will allow them to lead their own learning in DT.

Vocabulary is explicitly taught and developed throughout the school to allow scaffold and challenge at all levels.

Subject Overview

	Autumn	Spring	Summer
Year 1	Slider Mechanisms- make a greeting card	Frame Structures- Make a chair for your soft. Toy	Food and nutrition- fruit salad
Year 2	Textiles- Make a puppet to give as a gift	Wheels and axels- make a wind powered car	Food and Nutrition- Make a wrap for a class picnic
Year 3	Mechanisms- Make an information pop up book	Free Standing structure- make a small house for hamster	Food and Nutrition- Make bread for the school lunches
Year 4	Food and Nutrition- Create a fusion Indian and British dish	Textiles- Make a cushion for the class book corner	Frame Structures- Build a bridge to cross a river
Year 5	Electrical Systems and Circuits- Make a torch for an explorer	Pulleys and Gears- Make a cable car to transport you from the mountains	Cooking and Nutrition- Make a tapas inspired dish for your parents
Year 6	Textiles- make an apron	Electrical Systems and Circuits- Make a steady hand game for children	Food and Nutrition- Make a gluten free pizza

Impact

At Edmund Waller Primary School, we ensure that our DT curriculum is progressive and allows children to develop fundamental skills and apply them to a variety of real-life problems:

- Children can talk confidently about their learning in DT, using appropriate and specific vocabulary
- Children enjoy taking part in lessons and are confident to demonstrate their knowledge and skills
- Children discover new interests
- As designers, children will develop skills and attributes they can use beyond school and into adulthood
- Teachers will use formative assessment to see where the children are at the end of a unit of work and to see which skills or knowledge will need to be revisited and inform future planning

Outcomes

At the end of KS1 children can

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. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. At the end of Key Stage 1 most pupils will be able to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

At the end of KS2 children can

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. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

By the end of key stage 2, most children will be able to:

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Outcomes

At the end of KS1 children can	At the end of KS2
<p>Make</p> <ul style="list-style-type: none">• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none">• explore and evaluate a range of existing products• evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none">• build structures, exploring how they can be made stronger, stiffer and more stable• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	<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 and consider the views of others to improve their work• understand how key events and individuals in design and technology have helped shape the world <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 [for example, gears, pulleys, cams, levers and linkages]• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]• apply their understanding of computing to program, monitor and control their products.

Assessment in DT





How can we assess progress?

We can ask these questions when assessing **practical skills and knowledge**

Are the children:

- Showing understanding by explaining how things work?
- Naming tools and materials correctly?
- Discuss properties of material
- Use tools accurately and safely?
- Follow their plans?
- Identifying and trying to solve problems?



We can ask these questions when assessing **design skills**:

- Has the design been drawn using appropriate techniques such as cross sectional or exploded diagrams?
- Is there a realistic order/ sequence to the assembly?
- Have the correct materials and tools been selected?
- Has the appropriate technical vocabulary been used?
- Is there evidence of research?
- Where a prototype or mock-up has been made, has it informed the design process?
- Does the finished product match the final design?



We can ask these questions when assessing **evaluation skills**:

- Does the product do what it should? If not, have chn been able to explain why and mentioned modifications in their design/evaluation?
- Have the needs of the user been identified and met?
- Have changes which were made during the making stage been noted down and explained?
- Is there a comment about the look of the final product if made?
- Have they been able to point out where their design was too ambitious or complex?
- Have they thought about how to improve their product?



The **finished product** can be assessed by asking (both teacher or self assessment):

- Quality of manufacture- well made or poorly made?
- Function- does it work?
- Appearance- how attractive is it?
- Meeting design criteria- does it do what it should do and have the needs of the user been met?
- Does it have a clear purpose?
- Innovation- is this a new idea?