DESIGN AND TECHNOLOGY

PORTSWOOD PRIMARY SCHOOL

KEY INFORMATION

DESIGN AND TECHNOLOGY
INTENT

In Design and Technology at Portswood Primary School we encourage children to be confident to take on new challenges, develop new skills and create imaginative pieces of work.

Design and Technology is a creative and aspirational subject that encourages problem solving and innovative thinking.

We aim to teach them the necessary skills for pupils to grow their enthusiasm for D&T which will provide them with the inspiration to solve problems from the world in which they live. The essential skills they learn today lay the potential foundations for their future as designers, engineers, builders and the creators of the future.

Each unit of work that the children complete will begin with research, will move through the generation of ideas, communication through design before practical sessions where children make a product, learning to use appropriate tools safely. The children are given the opportunity to reflect upon and evaluate the success of their designs.

We believe that children skills of designing, making and evaluating should build as they move through the key stages, and use skills obtained in other curriculum areas. Each stage of the scheme of learning will encourage confidence, competence and creativity in their Design and Technology work.

DESIGN AND TECHNOLOGY
IMPLEMENTATION

Design and Technology is taught each term at Portswood Primary School.
One unit of learning is planned for each term. This may be taught as discrete lessons each week or delivered in blocked units of time, to allow for concentrated periods of design or construction. This allows for pupils to become immersed in learning.

Teaching is whole-class based, supported by appropriate differentiation. Pupils will experience working independently, in pairs or in small groups at different stages of the programme of study. Working with others allows for the skills of communication and co-operation to be promoted, as well as allowing pupils with expertise in specific areas to demonstrate these strengths.

In the Early Years stage, Design and Technology should be a part of child initiated learning. This may be through Discovery Time, Star Jobs or as part of outdoor learning, rather than through subject specific teaching.

DESIGN AND TECHNOLOGY
IMPLEMENTATION

Long term curriculum planning, for Design and Technology is created so that each Programme of Study (POS) component is visited and revisited throughout the course of the academic year. The LTP covers the POS as set out in the Primary National Curriculum.

In each unit of planning pupils will be taught how to:

Design

Make

Evaluate

Secure technical knowledge

These skills are supported by strands within the curriculum which allows pupils to retain and build upon previously learned skills.

These strands are:

Textiles

Cooking and Nutrition

Building structures

Mechanical systems

Vehicles

Electrical systems

DESIGN AND TECHNOLOGY
Early Years Foundation Stage

How DT fits within the Early Years Curriculum:

Design and Technology is embedded in many areas of the Early Years curriculum both in the topic-based learning as well as the continuous provision. For example, during the Nursery topic focusing on the 3 Little pigs, the children were able to use junk modelling to build a house for the pigs or use large bricks to build houses. As part of their continuous provision they were able to manipulate the playdoh to make food or build a train track for the train to move along it.
All these activities are building on a skill set that the children will expand as they continue their journey through KS1 and 2.

How is DT is assessed within the Early Years Curriculum:

An aspect of the early learning goal for Expressive Arts and Design focuses on creating with materials. Children are expected to safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
Children are encouraged to share their creations, explaining the process they have used.
At Portswood Primary school, this can be seen as part of the outside and indoor provision.

DESIGN AND TECHNOLOGY
Early Years Foundation Stage

How DT prepares children to entry into Key Stage 1:

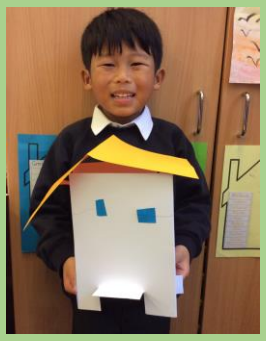
In the Early Years, children will experience a range of activities which they will later use as part of the primary design and Technology curriculum. This will, include preparing and making things to eat, problem solving, building models and exploring how to adapt the model to make it more successful as well as working collaboratively with peers.

Page 6 of this booklet shows the schools provision for DT and how each skill set is build upon from previous years learning.

The key skills of DT within the Early Years Curriculum (including links to KS1 programme of study):

The early years curriculum focuses on building a foundation for the skills children will need throughout their time in primary school.

As an example of this: in Nursery, children are supported by an adult to use junk modelling to build a house. In Yr R, children are encouraged to build on these skills during their continuous provision, using different materials and fixtures to secure their models. In Yr 1, children then build a specific building which they have planned and designed thinking about the most appropriate materials in order to be successful.



DESIGN AND TECHNOLOGY
IMPLEMENTATION

Whole School provision for Design and Technology

	Autumn term	Spring term	Summer term
Year 1	make Portswood buildings	fruit salad	moving pictures
Year 2	moving vehicles - ambulances	felt puppets	winding mechanisms
Year 3	sandwiches	moving monsters	picture frames
Year 4	torches	felt purses and wallets	pop up books
Year 5	cam toys	pizza	land yachts
Year 6	controllable vehicles controllable vehicles controllable vehicles	structures (bridges)	structures (playground)

There should be an emphasis on the teaching and modelling of appropriate technical language and vocabulary of design in order to develop the ability to accurately communicate key concepts with others.

Safety and DT:
When using tools and equipment pupils will only have access to age-appropriate tools.
When making, children will be taught how each piece of equipment, that poses a potential hazard, should be used safely. This includes how they should be used around others and how they should be moved around the learning environment.
Children will be monitored while using tools.

DESIGN AND TECHNOLOGY

Key Skills: Design

IMPLEMENTATION

Key stage 1:

Create a simple drawing that replicates the model.
Identify and label features of their drawing.
Name some other mechanisms and discuss how they work using the correct words.
Explain what each part does to make the object work.
Talk about their plan and what they need to do.

Lower Key stage 2:

Explore an existing products.
Discuss materials that have been used.
Draw, label and annotate an object appropriately.
Create a design with annotations.
Write a detailed explanation using technical vocabulary.
Begin to discuss the product user; information required and how products will appeal to them

Upper Key stage 2:

Explore, group and evaluate different products and how they are designed for specific purposes.
Generate initial design ideas.
Carefully draw appropriate designs for the product.
Draw designs from different angles
Clearly label/annotate the design including:

- parts
- dimensions
- Materials
- Equipment required

Select the most appropriate design.

DESIGN AND TECHNOLOGY

Key Skills: Making

IMPLEMENTATION

Key stage 1:

Follow the plan to make a model.
Identify appropriate materials they will need.
Choose appropriate equipment to construct the design.
Create the main part of the model.
Add features to the model.

Lower Key stage 2:

Produce a finished product.
Work collaboratively to set up a workstation with all the materials and tools required.
Select the materials/equipment needed.
Work safely with tools.
Join constructions appropriately for materials being used.
Use skills to add appropriate features.

Upper Key stage 2:

Produce a high-quality finished product.
Work collaboratively with others.
Select the materials/equipment needed.
Measure materials accurately
Work safely with tools: measure accurately, cut safely, saw a straight line, sand to give a straight edge, drill safely and create secure joins.
Use a variety of joining techniques.

DESIGN AND TECHNOLOGY

Key Skills: Evaluating

IMPLEMENTATION

Key stage 1:

Test resources to understand which would be the most appropriate for the task.
Give an opinion on a finished product including what was successful and what might be changed in the future.
Understand how the finished product has changed from the initial design.
Give detailed reasons using the correct vocabulary.

Lower Key stage 2:

Explain what has been designed.
Give reasons for the choices that were made.
Test the make to see if it works.
Give an opinion about the look and function of the make.
Compare the finished product with the design.
Give detailed reasons in an evaluation.
Identify how the product meets its purpose.
Consider features how consumers would respond to features included
Evaluate others' work based on their designs.

Upper Key stage 2:

Test and carry out the evaluation.
Demonstrate findings through diagram and simple description.
Explain the similarities and differences between plan and finished design.
Critically evaluate planning and designing.
Discuss how well the product performed.
Critically evaluate a finished product.
Apply knowledge of findings to improve designs.

DESIGN AND TECHNOLOGY

Key Skills: Technical Knowledge IMPLEMENTATION

Key stage 1:

Build a structure and explore how to make it stronger and more stable.
Use mechanisms for levers, pivots, wheels and axles.

Lower Key stage 2:

Understand how to reinforce a structure – strengthen and stiffen.
Use a mechanical system in the product (with levers and linkage)
Understand, use and recall the components of a circuit.
Use an electrical system in their product (circuits and switches).

Upper Key stage 2:

Reinforce a more complex structure – strengthen and stiffen with secure joins.
Identify successful and unsuccessful joins and identify weak spots within the structure.
Use a mechanical system in the product (with gears, pulleys, cams, levers and linkage).
Understand and use an electrical system in their product (circuits, buzzers switches or motors).
Test the product made and make adjustments to improve it (e.g for speed).

DESIGN AND TECHNOLOGY

Key Skills: Cooking and Nutrition IMPLEMENTATION

Key stage 1:

Identify healthy and unhealthy.
Talk about why fruit and vegetables are good for you.
Begin to look at where different foods come from.
Safely use equipment to cut food (fruit).

Lower Key stage 2:

Understand why we eat a range of food to keep healthy.
Talk about food that I eat at different times of the year, understanding the term 'seasonal.'
Understand that food comes from different parts of the world.
Understand the terms 'import' and 'export.'
Understand that different climates affect food that can be grown.
Suggest appropriate ingredients.
Work hygienically and safely.
Use an appropriate tool for cutting.

Upper Key stage 2:

Understand food groups and the effect of each one on healthy eating.
Discuss likes/dislikes about different food products.
Design and the annotate designs to show the ingredients used.
Follow instructions carefully.
Measure ingredients accurately
Handle food products hygienically.
Select an appropriate tool for cutting.

DESIGN AND TECHNOLOGY

IMPACT

At Portswood Primary school we pride ourselves on providing high quality resources so that children are inspired to produce a high quality outcome.

Children are enthusiastic about making their DT projects. When talking with upper key stage 2 pupils, they will often talk about a memorable make from previous years.
DT projects give children the opportunity to work on a different set of skills. They enjoy the opportunity to work in teams and overcome problems in order to achieve success in their make.

It allows children to work on skills that they might not have access to in other areas of life. Working with wood and sewing fabric are important skills to learn and often children discover a natural ability with these materials.

As different skills are revisited throughout key stage 1 and 2, there is a progression within the makes. For example, in Year 2 puppets are made with pre-cut holes to allow children to sew with more ease. In Year 4, children are shown a variety of different stitches to use to make a purse as well as adding embellishments to the finished article.

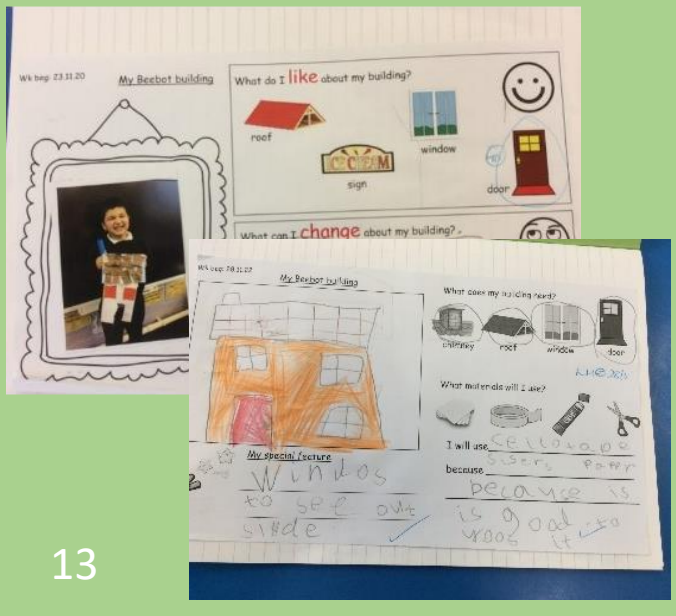
The quality of teaching is high. Teachers are able to use their own subject knowledge to bring projects to life. As a school, we strive to link the DT projects in with other curriculum areas. For example, in Year 1 the children focus on their local area in Geography then making a building in DT and use the beebots to move around the streets when all the buildings are set up as the finale to the project.

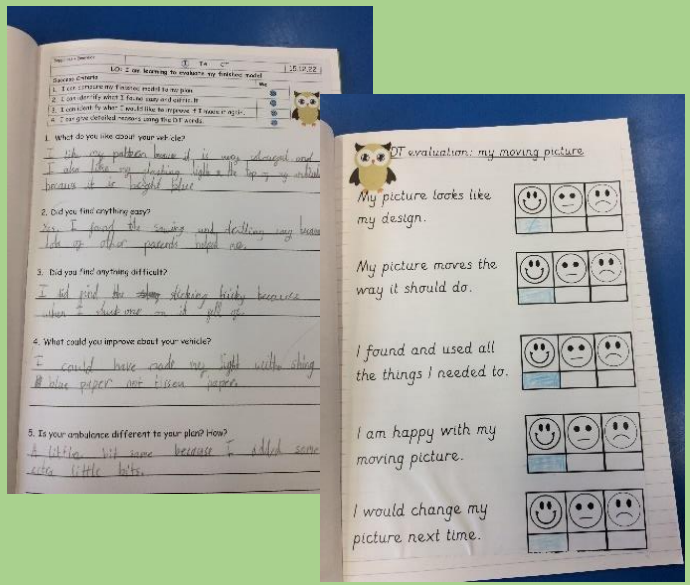
DESIGN AND TECHNOLOGY
IMPACT

DT is celebrated at Portswood Primary school with high quality displays showing the children's finished makes. Displays are often seen in opposite key stages which provides inspiration for future year groups.

Planning for each DT project is adapted from the MTP. The short term planning consists of 6 sessions which are either taught as a block or over a half term period.
As a school, the emphasis is on the DT skills rather than literacy skills when recording especially in the research and evaluation stages of the make.

Planning is differentiated to accommodate and support the needs of all pupils. This is clearly seen in children's books.



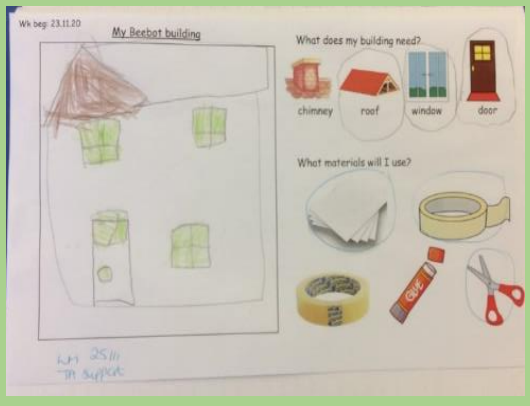


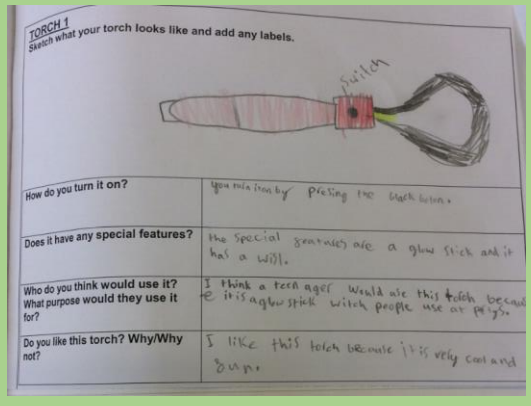
DESIGN AND TECHNOLOGY

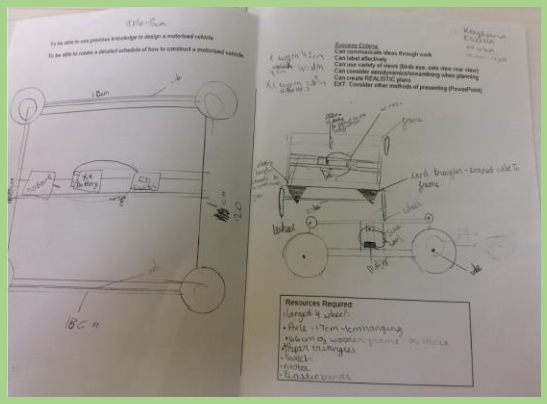
IMPACT

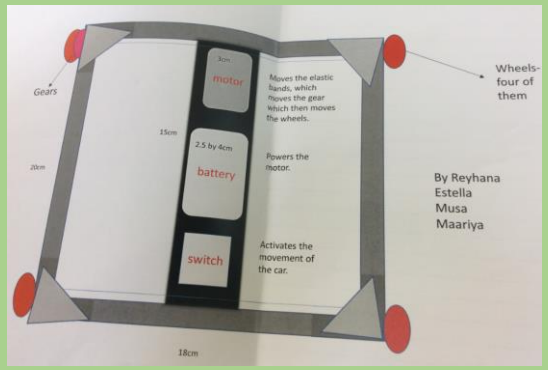
In DT, pupils show very good attitudes to learning They progress well, are proud of their outcomes and gain much from their learning. Well planned units mean pupils have clear models to follow, they plan well and make products that work. The DT curriculum is a strength within the wider whole school curriculum. It is enriching, exciting and enjoyed by pupils.

By the time pupils leave Portswood Primary school, they are able to produce clear designs which communicate ideas effectively to others.



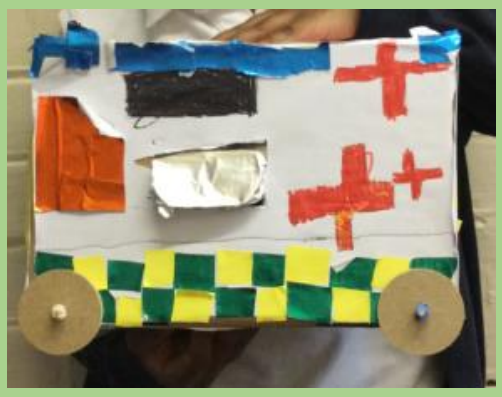






DESIGN AND TECHNOLOGY
IMPACT

By the time pupils leave Portswood Primary school, they can make products which are fit for the purpose intended.



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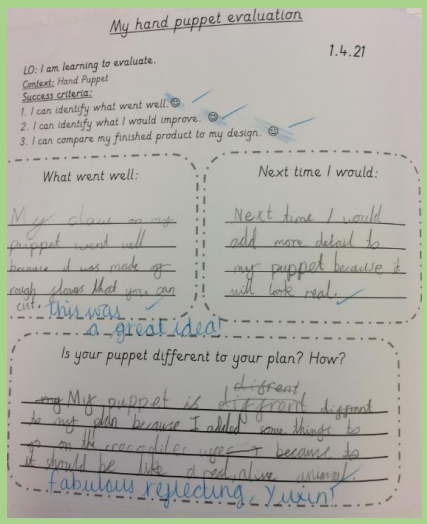
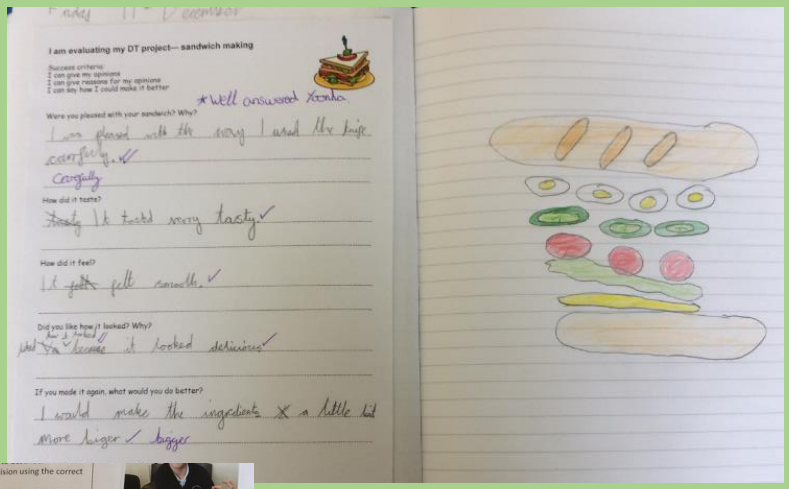
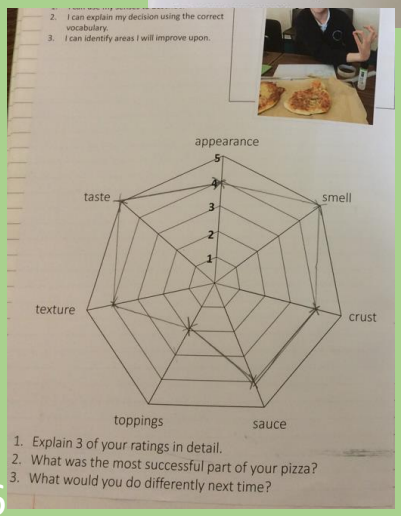
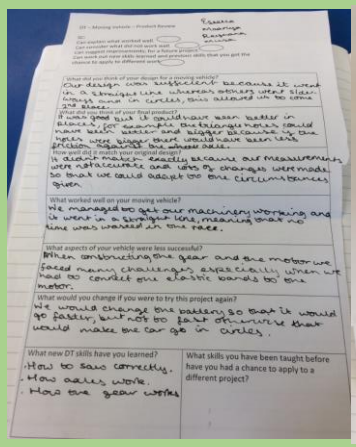
IMPACT

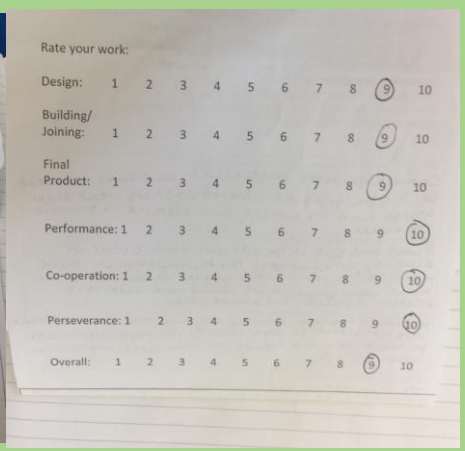
By the time pupils leave Portswood Primary school, they can evaluate the success of their designs and builds.











DESIGN AND TECHNOLOGY
IMPACT

By the time pupils leave Portswood Primary school, they can will experience the use of a variety of different materials for construction. e.g. textiles, electrics, food, wood and paper.

DESIGN AND TECHNOLOGY

IMPACT – Pupil Voice

What our pupils say about Design and Technology.

I enjoy DT because I want to be an engineer.

My favourite DT project was the ambulances. We raced them and I came first!

I enjoy DT because you can be really creative and make different things.

DT means you can design and make cool stuff!

My favourite DT project was purses because it took a long time, we failed but we came back and worked together.

DT means you can express how creative you are. Design things, learn about electrics and sawing.