
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.

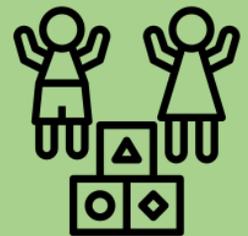
One unit of learning is planned for each term. This may be taught as discrete lessons each week or delivered in blocked units of time, to allow for concentrated periods of design or construction. This allows for pupils to become immersed in learning.



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.



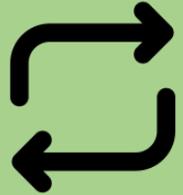
In the Early Years stage, Design and Technology should be a part of child initiated learning. This may be through Discovery Time, Star Jobs or as part of outdoor learning, rather than through subject specific teaching.



DESIGN AND TECHNOLOGY IMPLEMENTATION



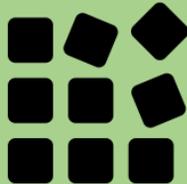
Long term curriculum planning, for Design and Technology is created so that each Programme of Study (POS) component is visited and revisited throughout the course of the academic year. The LTP covers the POS as set out in the Primary National Curriculum.



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



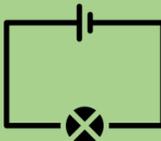
Building
structures



Mechanical
systems



Vehicles



Electrical
systems

DESIGN AND TECHNOLOGY IMPLEMENTATION



Whole School provision for Design and Technology

		Autumn term		Spring term		Summer term
Year 1	Building structures	make Portswood buildings	Cooking and nutrition	fruit salad	Mechanical systems	moving pictures
Year 2	Vehicles	moving vehicles – ambulances	Textiles	felt puppets	Mechanical systems	winding mechanisms
Year 3	Cooking and nutrition	sandwiches	Mechanical systems	moving monsters	Building structures	picture frames
Year 4	Electrical systems	torches	Textiles	felt purses and wallets	Mechanical systems	pop up books
Year 5	Mechanical systems	cam toys	Cooking and nutrition	pizza	Vehicles	land yachts
Year 6	Mechanical systems, Electrical systems, Vehicles.	controllable vehicles	Building structures	structures	Textiles	sewing
		controllable vehicles				
		controllable vehicles				

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.

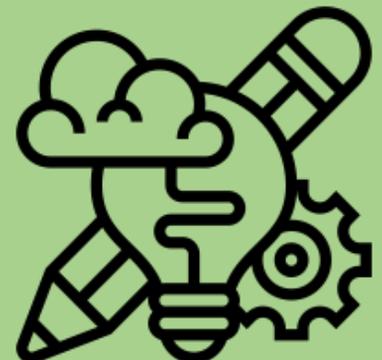
Carefully draw appropriate designs for the product.

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.

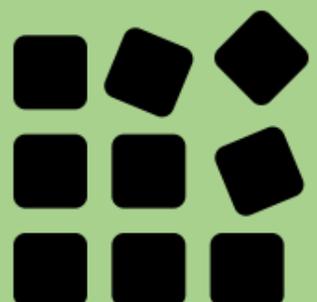
Work collaboratively with others.

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.

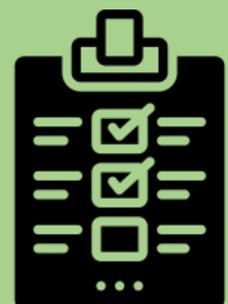
Explain the similarities and differences between plan and finished design.

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

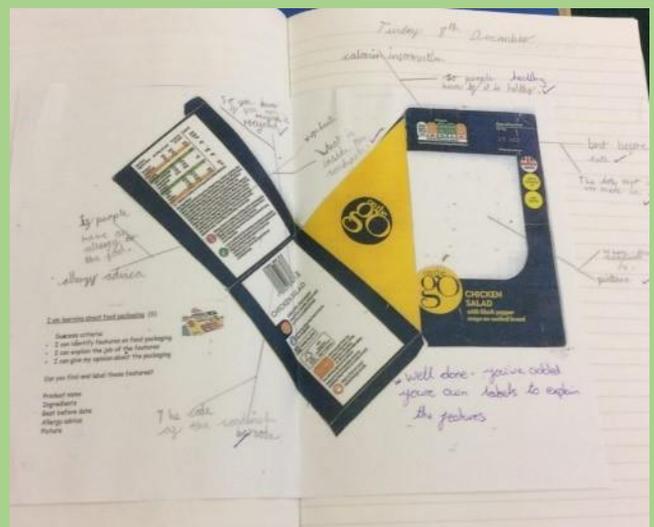
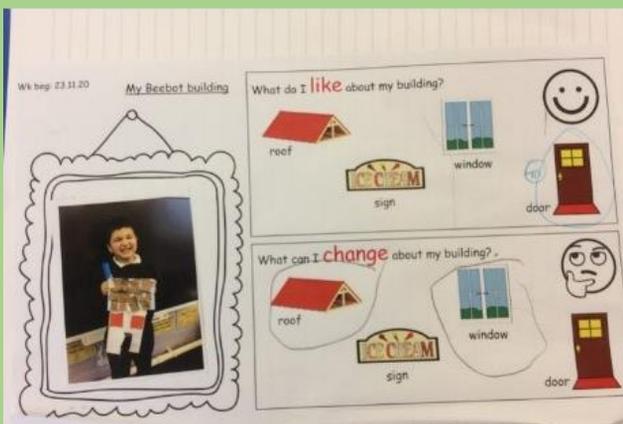


DT is celebrated at Portwood Primary school with high quality displays showing the children's finished makes. Displays are often seen in opposite key stages which provides inspiration for future year groups.



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.

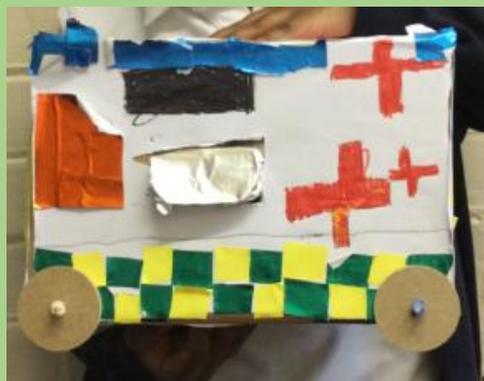
Planning is differentiated to accommodate and support the needs of all pupils. This is clearly seen in children's books.



DESIGN AND TECHNOLOGY IMPACT



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



DESIGN AND TECHNOLOGY IMPACT



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

Wk Beg: 23.11.20

My Beebot building

What do I like about my building?

roof, sign, window, door

What can I change about my building?

roof, sign, window, door

My hand puppet evaluation

1.4.21

LO: I am learning to evaluate.
Context: Hand Puppet
Success criteria:
1. I can identify what went well.
2. I can identify what I would improve.
3. I can compare my finished product to my design.

What went well:
My class on my puppet went well because it was made of rough clothes that you can cut. This was a great idea!

Next time I would:
Next time I would add more detail to my puppet because it will look real.

Is your puppet different to your plan? How?
My puppet is different to my plan because I added some things to it on the rear side of my puppet because it should be like a real alive animal. Fabulous reflecting. Well!

Friday 11/12/2020

I am evaluating my DT project— sandwich making

Success criteria:
1. I can give my opinion.
2. I can give reasons for my opinion.
3. I can say how I could make it better.

Were you pleased with your sandwich? Why?
I was pleased with the way I used the knife carefully. Carefully.

How did it taste?
Really it tasted very tasty!

How did it feel?
It felt smooth!

Did you like how it looked? Why?
Yes because it looked delicious!

If you made it again, what would you do better?
I would make the ingredients a little bit more larger/bigger.

Draw a picture of your sandwich.

6.12.19

Rate your work:

Design:	1	2	3	4	5	6	7	8	9	10
Building/Joining:	1	2	3	4	5	6	7	8	9	10
Final Product:	1	2	3	4	5	6	7	8	9	10
Performance:	1	2	3	4	5	6	7	8	9	10
Co-operation:	1	2	3	4	5	6	7	8	9	10
Perseverance:	1	2	3	4	5	6	7	8	9	10
Overall:	1	2	3	4	5	6	7	8	9	10



I am learning to evaluate my work
Context: sandwich

Success criteria:
1. I can give my opinion.
2. I can give reasons for my opinion.
3. I can say how my work could be improved.

Evaluate your work by answering the following questions.

1. What was good about your finished product?
The sandwich was on in a healthy.
2. What do you think of the appearance of your sandwich? How could it have been improved?
It was colorful and tasty.
3. How was your finished product the same as your design? How was it different?
Yes because in my plan I actually had a wrap.
4. What changes would you make if you made it again?
My sandwich tasted better.

6.12.19

Rate your work:

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6.12.19

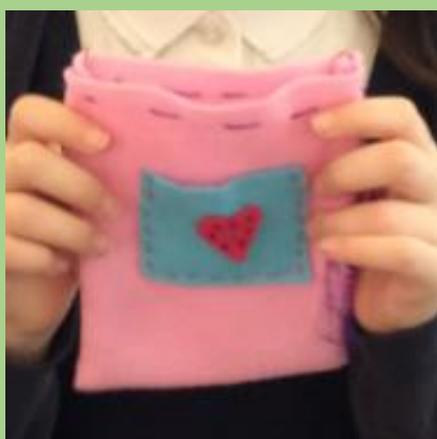
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Overall:	1	2	3	4	5	6	7	8	9	10

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.