

Design Technology Progression Map



ROKEBY PRIMARY SCHOOL

PART OF STOWE VALLEY MULTI ACADEMY TRUST

Level Expected at the End of EYFS (ELG)

Expressive arts and design – creating with materials

- Children to explore, use and refine a variety of artistic effects to express their ideas and feelings.
- Return to and build on their previous learning, refining ideas and developing their ability to represent them.
- Create collaboratively, sharing ideas, resources and skills.
- Create with materials - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.

Physical development

- Children to progress towards a more fluent style of moving, with developing control and grace.
- Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
- Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.
- Use a range of small tools, including scissors, paintbrushes and cutlery.

Key Stage 1 National Curriculum Expectations

Design

Pupils should be taught to:

- 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

Make

- 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

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- 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.

Cooking and nutrition

Pupils should be taught to:

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key Stage 2 National Curriculum Expectations

Design

Pupils should be taught to:

- 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

Evaluate

- 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

Technical knowledge

- 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

Cooking and nutrition

Pupils should be taught to:

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Intent

Our vision at Rokeby for design technology is to enable all children to use creativity and imagination to design and make products to solve real and relevant problems.

We want our children to know that everything they see and use has been designed or engineered for use. We want them to know that:

- A Rokeby design technologist looks at the purposes of a product
- A Rokeby design technologist discusses and thinks about the users of a product
- A Rokeby design technologist thinks about the functionality of their design
- A Rokeby design technologist makes different decisions on their designs and evaluates these
- A Rokeby design technologist innovates and investigates their design
- A Rokeby design technologist designs and makes products that are believable, real and meaningful to themselves and others

At Rokeby, we want to foster creativity, technical and practical expertise to promote the children's interest and understanding of design technology in daily life and the wider world. Our Design Technology curriculum is underpinned by both The National Curriculum 2014 and The Rainbow Continuum.

Implementation

Design technology is taught regularly throughout the year, where the children can combine the functionality, purpose and authenticity of their design alongside their class text. This ensures that the children are fully immersed in their learning and can transfer their design technology knowledge, decisions and innovations to a range of curriculum areas.

Cross curricular outcomes in design technology are specifically planned for, with strong links between the design technology users and products linked with the morning English lessons.

Our provision for design technology is clearly mapped out for each group so that progress and development of designing, making, evaluating and technical knowledge is key. We promote our children's language and vocabulary by frequent use of their Foundation Subject Dictionary.

All class teachers identify which children are WTS, EXS and GDS for each lesson and edit and adapt future lessons in reflection of this.

Impact

The design technology learning links to the current Power of Reading texts for each year group so children are fully immersed in their learning and able to make meaningful links between the story that they are reading and the design, make and evaluation of their product process.

Children's vocabulary knowledge is growing, this is promoted through the use of vocabulary folders that the children use to define new vocabulary for each year group. The new Design Technology resource cupboard has been expanded and restocked to meet the needs of our curriculum learning.

Learning WALT's have a clear progression through the year groups, with the firm foundations laid by the Early Years, and built on through key stage one and then key stage two.

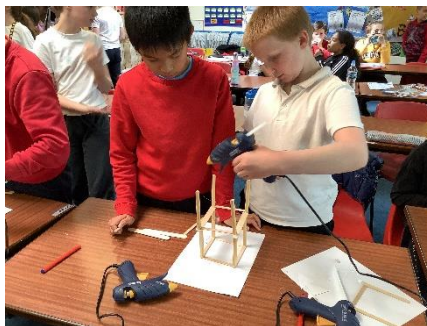
Through pupil voice the children spoke positively about design technology and a child in year 4 stated when asked about skills they had used 'Drawing, cutting, sticking – using the glue gun, glue stick didn't work, tying knots, threading and bending'.

A child in year 5 when asked 'Do you enjoy your DT learning?' stated 'I like DT because you design from a blank box, you can show what you want by crafting it out, competitions and challenges.' Children were set challenges via our Youtube channel during lockdown.

A child in year 5 stated when asked the question 'Do you know what design technology is?' he replied, 'design and make then you have to check if it works and improve it?'

A child in Year 1 when asked the question 'What have you made?' they stated, 'Beds, egg cosy and they had tried different ways to joins'. A Year 2 child stated to the same question, 'I've made a vehicle, cooking and we made it with different ingredients'.

Some images below demonstrate design, make, evaluate, technical knowledge, nutrition and food across the year groups.



Design

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
WALT: talk about ideas and say what will be done (Autumn 2 and summer 2) WALT: generate ideas from your own experience	WALT: generate ideas and plan what to do (Year 1 Autumn 1) (Year 2 Summer 1 and Summer 2)	WALT: use models, pictures and words in designs	WALT: collect and use information to generate ideas (Autumn 2 and summer 2)	WALT: clarify ideas through drawing and modelling (Autumn 1 and spring 2)	WALT: use our knowledge of science and art when designing (Autumn 1, 2 and Summer 2)
WALT: describe what I want to do using pictures and words (Autumn 1 and spring 2, summer 1)	WALT: draw pictures with labels and some text (Autumn 1, Spring 1)	WALT: make increasing use of ICT to plan ideas	WALT: produce step by step plans (Year 4 autumn 2, spring 2 and summer 1) WALT: make ongoing sketches and annotations	WALT: plan an order of work (Autumn 1 and spring 2) WALT: make sketches to show other ways of doing things.	WALT: create designs with pneumatic moving parts
WALT: make lists of materials I will need (Autumn 1 and spring 1)	WALT: use our knowledge or materials when designing. WALT: use plans to show how to put ideas into practise	WALT: use what we know about the properties of materials WALT: investigate a range of products to see how they work	WALT: plan our work to include a range of joins WALT: model our ideas before making	WALT: make more complex designs using a combination of mechanisms WALT: use sketches to show design ideas and make choices	
	WALT: use simple finishing techniques	WALT: think ahead about our designs	WALT: understand designs must meet a range of criteria and constraints (Spring 2 and Summer 1)	WALT: to meet an identified need	WALT: produce an instruction manual
	WALT: use digital technology to present finished work	WALT: consider how the product will be used	WALT: take users views into account		
	WALT: use photographs to present our finished design work	WALT: say why something is useful		WALT: use various sources of information for designs (Year 5 Autumn 1 and summer 1)	WALT: research products using the internet (Autumn 1, spring 1, summer 1)

Make

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
WALT: know the features of some familiar products			WALT: model our ideas before making	WALT: carry out tests to see if your design works	WALT: select materials and components according to their functional properties
WALT: join materials together	WALT: to select tools for folding, joining or rolling WALT: select appropriate tools and techniques (spring 2 summer 2)	WALT: choose tools and equipment which are appropriate for the job		WALT: meet an identified need by selecting materials	
WALT: use scissors or a cutting tools to cut out WALT: join materials together	WALT: use a simple template for cutting out	WALT: select our own ingredients when cooking and baking	WALT: join with a greater range of techniques (staples, sewing etc)		
	WALT: use simple scales or balances	WALT: measure and cut out using cm (Spring 2 and Summer 2)	WALT: measure and cut out using cm	WALT: measure and cut precisely to mm	WALT: measure and cut out in precise detail
WALT: make simple models	WALT: practise skills before using them (Autumn 2 and spring 1)	WALT: make the finished product neat and tidy	WALT: understand how some properties can be used.	WALT: select materials and components according to their function	WALT: make separate elements of a model before combing to make the finished article/product (autumn 1 summer 1)

Evaluate

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
WALT: recognise the characteristics of familiar products	WALT: describe how a commercial product works	WALT: explain your ideas clearly	WALT: discuss what we like and dislike giving reasons (Year 2 summer 2)	WALT: identify what is working well and what might be improved making alternative choices.	WALT: test and evaluate commercial products WALT: understand how an article/product might be mass produced
	WALT: to explain how the product will be useful to the user	WALT: use other examples to generate our ideas	WALT: consider how the product will be used WALT: evaluate food by taste, texture and flavour	WALT: to test and improve products	WALT: evaluate a range of different sources of information WALT: be aware of commercial aspects and use these in your designs
WALT: to discuss our own and others work	WALT: to evaluate our own and others work (year 1 Spring 1) WALT: use like and dislike when evaluating or describing	WALT: evaluate our work, recognising what has gone well and further improvements WALT: evaluate the product and give reasons (Year 2 spring 2)	WALT: develop designs through reflection and evaluations Year 4 Spring 1 and summer 1)	WALT: identify what is working well and what might be improved WALT: make improvements from a design suggestion	WALT: test and evaluate commercial products and use these ideas for our own designs WALT: evaluate a range of different information from adverts, handbooks and the internet
	WALT: recognise what worked well and what could be improved.	WALT: alter and adapt original plan following evaluation			
	WALT: predict how changes will improve the finished product	WALT: suggest elements that they could improve WALT: identify where evaluations have led to improvements		WALT: refine and make annotations to the final design	
		WALT: ensure that our plans are appropriate for the aim		WALT: refine the product with annotations on the design	

Technical knowledge

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
WALT: know how some moving objects work	WALT: discuss how moving objects work WALT: talk about how the moving object works	WALT: prepare our work by assembling components before joining			
WALT: identify materials and mechanisms in familiar products.	WALT: use mechanisms to create movement				
		WALT: use permanent fastenings to join (sewing)	WALT: use permanent and temporary fastenings to join (Year 4 Summer 2)		
WALT: make simple models	WALT: use wheels and levers in plans	WALT: combine a number of components together in different ways	WALT: understand how wheels, axels and turning mechanisms work together	WALT: make more complex designs to include belts, pulleys and other mechanisms	WALT: understand and use mechanical systems
WALT: explore how structures can be made stronger, stiffer and more stable			WALT: measure accurately in centimetres and combine materials for strength WALT: alter and adapt materials to make them stronger		WALT: apply and understand how to strengthen, stiffen and reinforce structures.
WALT: use simple construction kits		WALT: strengthen joins in a variety of ways	WALT: understand how hinges and levers work together	WALT: make stable and strong joins to stand the test of time	
		WALT: understand and use electrical switches and bulbs	WALT: add electricity to create motion	WALT: use and understand electrical buzzers	WALT: apply their understanding of computing to control products

Food and Nutrition

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
WALT: identify ingredients in familiar products	WALT: use the term ingredients (Year 2 Autumn 1 and summer 1)			WALT: meet an identified need and select ingredients	
	WALT: prepare healthy and varied dishes	WALT: make good presentation of food	WALT: prepare and cook a savoury dish		WALT: prepare and cook dishes WALT: prepare and cook savoury dishes Year 4 Summer 1
WALT: use a knife to cut	WALT: use simple scales or balances	WALT: measure and weigh out in grams	WALT: measure accurately in grams (year 3 Summer 2)	WALT: use proportions when cooking (doubling and halving recipes)	
WALT: know about basis hygiene and safety	WALT: understand the main rules for food hygiene	WALT: understand safe food storage		WALT: work safely and hygienically when cooking	
WALT: Know the benefits of fruit and vegetables			WALT: to understand how ingredients are caught		WALT: apply the principles of healthy and varied diet
					WALT: produce a menu