

Design Technology

Long Term Curriculum Map Whole School Scheme of Learning



Intent: This is what we want for your child

At Barley Fields Primary Design and Technology is an inspiring, rigorous and practical subject which prepares children to take part in the development of tomorrow's rapidly changing world. We encourage children to use their creativity and imagination, to explore, design and make products that solve real and relevant problems within a variety of contexts. Our Design and Technology curriculum has been devised to combine the development of skills, knowledge and concepts and provides children with opportunities to develop their abilities to analyse, problem solve, apply practical capability and evaluation skills.

We aim, wherever possible, to link Design and Technology work with disciplines such as mathematics, science, engineering, computing and art. Our children are encouraged to become innovators, risk-takers and creative problem solvers.

Implementation: This is what it will look like in the classroom

Our children follow a carefully structured Design and Technology curriculum which is designed to ensure children know more and remember more as they progress through our school. Our content is supported by advice and support from the Design Technology Association. The curriculum is taught through four skills led strands which underpin our teaching approach:

- Exploring products and developing ideas
- Development of skills
- Designing and Making tasks
- Product evaluation and review

Within our design and technology curriculum we cover five strands of study – textiles, mechanisms, structures, electrical systems and food and nutrition. All teaching and learning opportunities link to a progressive coverage of skills, knowledge and vocabulary acquisition in these areas.

Our Teaching Approach:

• DT is taught in blocks of lessons to ensure children have opportunities for a sustained period of study and have time to embed and enhance their learning.

- Detailed medium-term planning supports teaching, ensures continuity and carefully plans for progression and depth.
- Teaching and learning in DT is designed to be practical and hands on and, where possible, is linked to real life contexts and problems.
- Children have opportunities to use high quality resources and materials to support their learning.

Our children understand the core skills needed to work as a designer with the use of the school curriculum character – Daisy the Designer. These characters are regularly used to encourage children to reflect on the key skills needed when working within DT.



Impact: This is what it will mean for our children

By the end of each key stage, children are expected to know, apply and understand the skills and techniques specified in the DT curriculum plans.

Children are assessed using our SONAR tracking system which identifies clear and progressive end points. This ensures progress is maintained and end of key stage expectations are met by all children.

Children are assessed termly and a final summative assessment made at the end of the academic year. Children will be assessed as either Emerging, Developing, Secure or Exceeding, in accordance with Age Related Expectations.

In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes;
- A celebration of learning for each term which demonstrates progression across the school (Curriculum Floor book);

- Pupil discussions about their learning (Pupil Voice);
- The annual tracking of standards across the curriculum. In KS1 and KS2



ETHOS

Happy memories
A love of learning
Enjoyment and Fun
Practical Experience
Friendship, Family and Community
Tolerance and Understanding
Being Healthy and

Keeping Safe
Rights and Responsibilities

Curriculum Pillars of Intent







- Respect and Honesty
- Teamwork
- Analytical Thinking and Problem Solving
- •Understanding Relationships
- •Sustaining Positive Relationships
- •Global Awareness and Responsibility
- •Cultural Awareness and understanding
- •Effective Communication

School Overview of Design Technology Teaching

	Year 1									
	Autumn		Spring	Summer						
Mechanisms Moving Pictures			Structures Playgrounds	Food and Nutrition Eat more Fruit and Vegetables						
1.	What is a sliding mechanism?	1.	What structures can I see in the playground?	1.	What fruits and vegetables do we like to eat?					
2.	What is a lever and pivot?	2.	How can I join materials to create a piece of	2.	What do fruits and vegetables taste like?					
3.	What is a wheel mechanism?		playground equipment?	3.	How can we prepare fruits and vegetables to					
4.	Can I design a moving picture?	3.	Can I design a piece of playground equipment?		eat?					
5.	Can I make a moving picture?	4.	Can I build a model of playground equipment and	4.	Can I design a fruit salad or a vegetable soup?					
6.	Can I evaluate my moving picture?		follow my design?	5.	Can I make my salad design?					
		5.	What do I think about my model?	6.	What do I think of my design?					

	Year 2	
Autumn	Spring	Summer
Mechanisms Vehicles	Textiles Puppets	Food and Nutrition Seaside Snacks
 How do wheels make things move? How can we attach wheels to create a moving vehicle? How can I design a vehicle to transport my egg? How can I make my vehicle? What do I think about my vehicle now it is finished? 	 What is a puppet? How do I join materials – gluing and using a template? How do I join materials – sewing techniques? I design a Glove Puppet for a seaside show? Can I make a puppet? What was my puppet like? 	 What are common seaside snacks? Can I make a seaside savoury snack? Can I make a fruit sculpture? Can I make a frozen seaside snack? What will we eat in our seaside picnic?

Year 3									
Autumn	Spring	Summer							
Textiles Seasonal Stockings	Structures Packaging	Food and Nutrition Sandwich Snacks							
1. What is a Christmas Stocking?	1. What is packaging?	1. What do I know about sandwiches?							
2. How do I join materials – sewing techniques?	2. How can we use a 2D net to create a 3D	2. What do I like about sandwiches?							
3. How do I join materials – decoration	structure?	3. Can I design a sandwich for a purpose?							
techniques?	3. What are graphics?	4. Can I create a healthy sandwich?							
4. How can I design my Christmas stocking?	4. Can I design a package for an Easter Egg?	5. How did my sandwich turn out?							
5. How can I make my Christmas stocking?	5. Can I make a package for an Easter Egg?								
6. What do I think of my finished product?	6. What do I think about my design?								

Autumn	Spring	Summer					
Mechanisms Moving Messages	Electrical Systems Recycled Outdoor Lights	Food and Nutrition Perfect Pizza					
1. What are we learning in DT?	1. What are we learning in DT	1. What are we learning in DT?					
2. What are mechanical systems?	2. How do electrical circuits create light?	2. What do I know about Pizza?					
3. How can I create leavers and linkages?	3. Can I create a circuit?	3. What toppings can we add to a pizza?					
4. Can I design a moving Christmas Message?	4. Can I design an outdoor light?	4. Can I design a healthy pizza?					
5. Can I follow my design to create a moving	5. Can I make an outdoor light?	5. How do I make a pizza?					
Christmas message?	6. How did my light turn out?	6. How did my pizza turn out?					
6. How did my moving message turn out?							

	Year 5									
	Autumn		Spring	Summer						
	Mechanisms	Food and Nutrition			Flectrical Systems					
4	🔍 🧖 Moving Toys		Pood and Ndtittion		Electrical Systems					
TT			bleau							
				1						
4										
1.	What are we learning in DT?	1.	What are we learning in DT?	1.	What are we learning in DT?					
2.	What is a cam mechanism?	2.	Can you successfully investigate a range of bread	2.	What do we know about fairgrounds?					
3.	How can I create a cam mechanism?		products in order to establish your favourite?	3.	How do I use a motor to make something rotate?					
4.	How can I strengthen a structure?	3.	How is bread included as part of our balanced diet?	4.	Can I create a prototype structure?					
5.	Can I design a moving toy for a specific purpose and	4.	How is bread made? How can recipes be altered?	5.	Can I design a fairground ride ?					
	audience?	5.	Can you create a new bread recipe for a specific	6.	Can I make a fairground ride?					
6.	Can I make a sturdy moving toy with a functioning		purpose and market?	7.	How did my fairground ride turn out?					
	cam mechanism?	6.	Can you make your final bread product by following							
7.	Can I evaluate my finished product?		a recipe?							
		7.	Can you evaluate your finished product?							

			Year 6					
	Autumn		Spring		Summer			
	Textiles Christmas Advent Calendar			Structures Bridges		Food and Nutrition Great British Dishes		
1.	What are we learning in DT?	1.	What are we learning in DT?		1.	What are national dishes?		
2.	Investigating the market	2.	What do I know about Bridges?		2.	Are some English sweet national dishes healthy?		
3.	How can I join textiles?	3.	What is a Truss used for?		3.	What are Scotland's national dishes?		
4.	How and why do I use a template?	4.	What is an Arch bridge?		4.	What are national dishes in Wales?		
5.	Can I design a decoration for a Christmas Advent	5.	What is a suspension bridge?		5.	How have other countries and cultures influenced		
	Colander?	6.	Can I design a bridge?			the British diet?		
6.	Can I make a decoration for a Christmas Advent	7.	Can I make a bridge?					
	calendar?	8.	How did my bridge turn out?					
7.	How did my decoration turn out?							

National Curriculum Objectives

Level Expected at the End of EYFS

We have aimed to select the Early Learning Goals that link most closely to the Design and Technology National

Curriculum. For more detail about linked subject progression within the EYFS Framework, please refer to these

documents.

Expressive Arts and Design (Exploring and Using Media and Materials)

Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Physical Development (Moving and Handling)

Children handle equipment and tools effectively, including pencils for writing.

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

Pupils should be taught to:

- 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

Pupils should be taught to:

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

Technical Knowledge

Pupils should be taught to:

- · 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

Pupils should be taught to:

- 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

Pupils should be taught to:

- · 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.

National Curriculum Coverage Matrix

		Ye	ar 1			Ye	ar 2	
		Textiles	Structures	Food	Food	Textiles	Mechanis ms	Textiles
KS1 Curriculum Coverage Design Technology	Moving Pictures	Delightful Decoration	Playgrounds	Eat more Fruit and Vegetables	Seaside Snacks	Delightful Decoration	Vehicles	Puppets
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								
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								
explore and evaluate a range of existing products								
evaluate their ideas and products against design criteria								
build structures, exploring how they can be made stronger, stiffer and more stable								
explore and use mechanisms [e.g. levers, sliders, wheels and axles], in their products								
use the basic principles of a healthy and varied diet to prepare dishes								
understand where food comes from								

		Year 3		Year 4			
	Textiles	Structures	Food	Mechanical Systems	Electrical Systems	Food	
LKS2 Curriculum Coverage Design Technology	Seasonal Stockings	Packaging	Sandwiches	Moving Messages	Outdoor Lights	Perfect Pizza	
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							
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			
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			
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			
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			

		Year 5			Year 6	
	Mechanica I Systems	Food	Electrical Systems	Textiles	Structures	Food
UKS2 Curriculum Coverage Design Technology	Moving Toys	Bread	Fairgrounds	Advent Calendars	Bridges	Great British Dishes
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						
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						
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						
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			
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			