



Design Technology

Long Term Curriculum Map

Whole School Scheme of Learning



Intent: This is what we want for our children.

At Barley Fields Primary, we aim for our children to be the next generation of engineers, world-class chefs, designers and architects. Our Design Technology curriculum provides our children with the opportunity to take risks, experience failure and develop the personal attributes needed to thrive in an ever-changing, technological world. We believe that Design Technology is the future and that is why we offer our children such a practical, inspiring and exciting curriculum linked to real life contexts and problems when possible.

Through delivery of our progressive Design Technology projects, we aim for our children to understand and experience the processes of designing, making and evaluating, ensuring that they are given the opportunity to become independent and creative thinkers. Our curriculum is designed to provide the children with a strong sense of pride and achievement in their own creations and to apply skills of determination, resilience and critical thinking in a range of contexts.

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

Our children follow a carefully structured Design and Technology curriculum designed to progressively enhance their understanding and develop their skills. Our Design Technology curriculum promotes independence, resilience and problem solving from the very beginning of our children's learning journey. Lessons are vibrant and fun, filled with challenge, success and failure!

Our approach to Design technology begins in Early Years when children have opportunities to explore using a variety of tools and join a variety of materials in different ways. In Key Stages One and Two, the children build on their skills through progressive projects that are taught in blocks of learning. This allows sustained teaching time for the children to engage in a project from start to finish, to be critical, inventive and reflective in their work as well as develop and embed practical skills.

Our Design Technology curriculum follows a sequence that progressively builds on and revisits four strands and children will typically engage in activities including:

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


The strands are explored through the technical elements of the curriculum: textiles, mechanisms, structures, electrical systems and food and nutrition. The nature of our spiral curriculum allows the children to revisit these elements in each key stage; consolidating and building upon prior learning. This ensures the children know more and remember more as they progress through our school.

Design Technology is taught in blocks of lessons to ensure children have opportunities for sustained periods of study and have time to embed and enhance their knowledge and skills. Our detailed schemes of learning underpin an appropriate teaching pedagogy for effective quality first teaching and support staff in their delivery of the curriculum. Staff have access to targeted CPD opportunities to develop their pedagogical understanding when necessary. The school has a wealth of high-quality resources for children to use in their learning.

We are proud to have a Design Technology curriculum informed by research which undergoes regular reviews and updates to ensure its relevance and effectiveness.


Our children will know and understand the core skills needed to become a successful designer with the use of the school curriculum character – Daisy the Designer. The character is referenced in each lesson so that the children are familiar with the carefully crafted end points of our Design Technology curriculum in each key stage.

Early Years
Daisy the Designer
Creating with Materials



- ✓ I enjoy building and creating things for a reason.
- ✓ I can show my amazing ideas in drawings and plans.
- ✓ I can use lots of different skills when I make things.
- ✓ I like to talk about my models and my work when I make things.

Key Stage 1
Daisy the Designer



- ✓ I enjoy designing and making things.
- ✓ I enjoy exploring how things work and use these ideas in my designs.
- ✓ I can design things thinking about what they will be used for.
- ✓ I can use lots of different skills when I make things.
- ✓ I can talk about how to change my designs and models.

Key Stage 2
Daisy the Designer



- ✓ I enjoy designing and making products.
- ✓ I enjoy investigating familiar things to see how they work.
- ✓ I can design products thinking about their purpose.
- ✓ I can use a range of different skills when I make things.
- ✓ I can suggest ways to improve my designs and models.

Impact: This is what it will mean for our children.

The impact of our Design & Technology curriculum is that our children will be able to progressively design, make and evaluate a range of products, for a variety of users and for many different purposes.

Our DT curriculum and our teaching and learning pedagogy leads to children who:

- have a positive view of taking risks and making independent choices in a classroom
- carry out research, show initiative and ask questions to develop a detailed knowledge of how things work and are assembled
- enjoy being creative and be proud of their achievements in each project.
- have the ability to act as designers and makers, working efficiently, using materials carefully and working safely.
- have a knowledge of which tools, equipment and materials to use to make their products.
- Have the ability to apply mathematical and scientific knowledge and skills accurately when designing and making.
- Have an ability to manage risks exceptionally well to manufacture products safely and hygienically.
- Develop a passion for the subject and a desire to explore their learning further in the future.

We are proud of our children's achievement in DT. We continually observe and formative assess children against curriculum end points using SONAR and use this information to plan next steps in their learning and to challenge and consolidate their skills.

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

- A celebration of learning which demonstrates progression across the school (Curriculum Floor book);
- Pupil discussions about their learning (Pupil Voice);
- Internal monitoring strategies by SLT and the DT Team

As they leave our school children should understand that the skills they learn in DT will help them now and in the future of an ever-changing, technological world. Our children will leave Barley Fields feeling inspired to pursue their own creative thought, make and follow their own decisions and become the next generation of workers within the STEM world.

Early Years - Nursery

Autumn

Junk Modelling



Using scissors to snip

Joining skills different materials – glue sticks



Woodwork Bench

Introduction to woodwork – using workbench area for fine motor activities without real tools e.g tap-a-shape.

Junk Modelling



Using scissors to snip

Joining skills different materials – PVA glue



Woodwork bench

Introduce hammer – tapping golf tees etc.

Loose parts play and construction

Junk Modelling



Using scissors to follow lines

Joining skills - Join different materials – masking tape



Loose parts play and construction



Building and Construction play



Woodwork – exploring cutting skills

Junk Modelling



Using scissors to follow lines

Joining skills - Join different materials – Sellotape

Loose parts play and construction



Junk Modelling



Using scissors to create paper models

Joining skills – different materials – string



Large Parts Construction Play

Junk Modelling






Using scissors to create paper models

Building and construction – junk modelling e.g. making boats following floating and sinking experiment






Large Parts Construction Play – wooden bricks

Early Years - Reception

Autumn	Spring	Summer
<p>Structures Exploring construction kits Using tools - Scissor skills</p>  <p>Food and Nutrition Baking – Christmas Cookies</p>	<p>Mechanisms Folding techniques – Pop up cards</p>  <p>Food and Nutrition Pancakes</p>	<p>Structures Junk Modelling – Vehicles & Buildings</p>  <p>Food and Nutrition Baking – Gingerbread, Bread</p>




Year 1

Autumn	Spring	Summer
<p>Mechanisms Moving Pictures</p> 	<p>Structures Playgrounds</p> 	<p>Food and Nutrition Eat more Fruit and Vegetables</p> 
<ol style="list-style-type: none"> 1. What is a sliding mechanism? 2. What is a lever and pivot? 3. What is a wheel mechanism? 4. Can I design a moving picture? 5. Can I make a moving picture? 6. Can I evaluate my moving picture? 	<ol style="list-style-type: none"> 1. What structures can I see in the playground? 2. How can I join materials to create a piece of playground equipment? 3. Can I design a piece of playground equipment? 4. Can I build a model of playground equipment and follow my design? 5. What do I think about my model? 	<ol style="list-style-type: none"> 1. What fruits and vegetables do we like to eat? 2. What do fruits and vegetables taste like? 3. How can we prepare fruits and vegetables to eat? 4. Can I design a fruit salad or a vegetable soup? 5. Can I make my salad design? 6. What do I think of my design?




Year 2

Autumn	Spring	Summer
<p>Mechanisms Vehicles</p> 	<p>Textiles Puppets</p> 	<p>Food and Nutrition Seaside Snacks</p> 
<ol style="list-style-type: none"> 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? 	<ol style="list-style-type: none"> 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? 	<ol style="list-style-type: none"> 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
 <p>Textiles Seasonal Stockings</p>	 <p>Structures Packaging</p>	 <p>Food and Nutrition Sandwich Snacks</p>
<ol style="list-style-type: none"> What is a Christmas Stocking? How do I join materials – sewing techniques? How do I join materials – decoration techniques? How can I design my Christmas stocking? How can I make my Christmas stocking? What do I think of my finished product? 	<ol style="list-style-type: none"> What is packaging? How can we use a 2D net to create a 3D structure? What are graphics? Can I design a package for an Easter Egg? Can I make a package for an Easter Egg? What do I think about my design? 	<ol style="list-style-type: none"> What do I know about sandwiches? What do I like about sandwiches? Can I design a sandwich for a purpose? Can I create a healthy sandwich? How did my sandwich turn out?




Year 4

Autumn		Spring		Summer	
Mechanisms Moving Messages		Electrical Systems Recycled Outdoor Lights		Food and Nutrition Perfect Pizza	
<ol style="list-style-type: none"> 1. What are we learning in DT? 2. What are mechanical systems? 3. How can I create leavers and linkages? 4. Can I design a moving Christmas Message? 5. Can I follow my design to create a moving Christmas message? 6. How did my moving message turn out? 		<ol style="list-style-type: none"> 1. What are we learning in DT 2. How do electrical circuits create light? 3. Can I create a circuit? 4. Can I design an outdoor light? 5. Can I make an outdoor light? 6. How did my light turn out? 		<ol style="list-style-type: none"> 1. What are we learning in DT? 2. What do I know about Pizza? 3. What toppings can we add to a pizza? 4. Can I design a healthy pizza? 5. How do I make a pizza? 6. How did my pizza turn out? 	

Year 5

Autumn		Spring		Summer	
	Mechanisms Moving Toys		Food and Nutrition Bread		Electrical Systems Fairgrounds
<ol style="list-style-type: none"> 1. What are we learning in DT? 2. What is a cam mechanism? 3. How can I create a cam mechanism? 4. How can I strengthen a structure? 5. Can I design a moving toy for a specific purpose and audience? 6. Can I make a sturdy moving toy with a functioning cam mechanism? 7. Can I evaluate my finished product? 		<ol style="list-style-type: none"> 1. What are we learning in DT? 2. Can you successfully investigate a range of bread products in order to establish your favourite? 3. How is bread included as part of our balanced diet? 4. How is bread made? How can recipes be altered? 5. Can you create a new bread recipe for a specific purpose and market? 6. Can you make your final bread product by following a recipe? 7. Can you evaluate your finished product? 		<ol style="list-style-type: none"> 1. What are we learning in DT? 2. What do we know about fairgrounds? 3. How do I use a motor to make something rotate? 4. Can I create a prototype structure? 5. Can I design a fairground ride ? 6. Can I make a fairground ride? 7. How did my fairground ride turn out? 	

Year 6

Autumn	Spring	Summer
 <p>Textiles Christmas Advent Calendar</p>	<p>Bridges</p>  <p>Structures</p>	 <p>Food and Nutrition Great British Dishes</p>
<ol style="list-style-type: none"> 1. What are we learning in DT? 2. Investigating the market 3. How can I join textiles? 4. How and why do I use a template? 5. Can I design a decoration for a Christmas Advent Colander? 6. Can I make a decoration for a Christmas Advent calendar? 7. How did my decoration turn out? 	<ol style="list-style-type: none"> 1. What are we learning in DT? 2. What do I know about Bridges? 3. What is a Truss used for? 4. What is an Arch bridge? 5. What is a suspension bridge? 6. Can I design a bridge? 7. Can I make a bridge? 8. How did my bridge turn out? 	<ol style="list-style-type: none"> 1. What are national dishes? 2. Are some English sweet national dishes healthy? 3. What are Scotland's national dishes? 4. What are national dishes in Wales? 5. How have other countries and cultures influenced the British diet?

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

KS1 Curriculum Coverage Design Technology	Year 1				Year 2			
	Mechanisms	Textiles	Structures	Food	Food	Textiles	Mechanisms	Textiles
	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								

LKS2 Curriculum Coverage Design Technology	Year 3			Year 4		
	Textiles	Structures	Food	Mechanical Systems	Electrical Systems	Food
	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					

UKS2 Curriculum Coverage Design Technology	Year 5			Year 6		
	Mechanical Systems	Food	Electrical Systems	Textiles	Structures	Food
	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						