

Woodside Primary School
Design Technology – Long Term Planning – Cycle B

Early Years

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas.

This long term plan demonstrates which statements from the 2020 Development Matters are prerequisite skills for design technology within the national curriculum. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for design technology.

The most relevant statements for design technology are taken from the following areas of learning:

- Physical Development
- Expressive Arts and Design

	Areas of Learning		Objective
Three and Four-Year-Olds	Personal, Social and Emotional Development		<ul style="list-style-type: none"> • Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.
	Physical Development		<ul style="list-style-type: none"> • Use large-muscle movements to wave flags and streamers, paint and make marks. • Choose the right resources to carry out their own plan. • Use one-handed tools and equipment, for example, making snips in paper with scissors
	Understanding the World		<ul style="list-style-type: none"> • Explore how things work.
	Expressive Arts and Design		<ul style="list-style-type: none"> • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Explore different materials freely, in order to develop their ideas about how to use them and what to make. • Develop their own ideas and then decide which materials to use to express them. • Create closed shapes with continuous lines, and begin to use these shapes to represent objects.
Reception	Physical Development		<ul style="list-style-type: none"> • 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.
	Expressive Arts and Design		<ul style="list-style-type: none"> • 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
ELG	Physical Development	Fine Motor Skills	<ul style="list-style-type: none"> • Use a range of small tools, including scissors, paintbrushes and cutlery.
	Expressive Arts and Design	Creating with Materials	<ul style="list-style-type: none"> • 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.

KS1 Subject Content

When designing and making, pupils should be taught to:

Design

- 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

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

	Autumn	Spring	Summer
Year 1 / 2	<p>Dips and Dippers</p> <ul style="list-style-type: none"> • Explore and evaluate a range of existing products • To understand where foods comes from. • Use the basic principles of a healthy and varied diet • Select from and use a range of tools and equipment to perform practical tasks (for example, cutting) • Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking and drawings. • Use the principles of a healthy and varied diet to prepare dishes • Evaluate their ideas and products against design criteria. <ul style="list-style-type: none"> • I can evaluate different dips. • I can start to think about where different foods come from. • I can explore different dippers and describe them • I can explain why I need to eat a balance and variety of food groups to stay healthy • I can make dips and dippers. • I can plan my own appealing dip and dipper and clearly show my ideas. • I can follow my plan to make my own dip and dipper. • I can evaluate my dip and dipper. 	<p>Vehicles</p> <ul style="list-style-type: none"> • Explore and evaluate a range of existing products • Design purposeful, functional and appealing products for themselves and other users based on design criteria • select from and use a wide range of materials and components, including construction materials, according to their characteristics • Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups • Evaluate their ideas against design criteria <ul style="list-style-type: none"> • I can find out the different ways in which travel and transport has changed from past to present. • I can find out about an early form of travel: the Viking longboat. • I can find out about how cars have changed since they were invented. • I can find out about George Stephenson's life and inventions • I can find out about the Wright brothers and the invention of the aeroplane. • I can compare travel and transport of the past, present and future 	<p>Moving Pictures</p> <ul style="list-style-type: none"> • Explore and evaluate a range of existing products • Explore and use mechanisms (for example sliders), in their products • Design purposeful, functional and appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups • Evaluate their ideas against design criteria <ul style="list-style-type: none"> • I can explore and evaluate an existing product. • I can use a mechanism in my product. • I can make a lever and use it in my product. • I can make a wheel mechanism and use it in my product • I can design a working product thinking about who it is for and what it needs. • I can make decisions about my product design and use an annotated sketch to show them. • I can use mechanisms to make a product. • I can evaluate my product against design criteria.

KS2 Subject Content

When designing and making, pupils should be taught to:

Design

- 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

- 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.

	Autumn	Spring	Summer
Year 3/ 4	<p>Great Bread Bake-Off</p> <ul style="list-style-type: none"> • Understand how key events and individuals in design and technology have helped shape the world • Investigate and analyse a range of existing products • 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 • Select from and use a wider range of tools and equipment to perform practical tasks for example shaping accurately • Generate, develop, model and communicate their ideas through discussion and annotated sketches • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Select from and use a wider range of equipment to perform practical tasks accurately. Evaluate their ideas and products against their own Design Criteria. <ul style="list-style-type: none"> • I can find out about important people and events in the past that have shaped the way bread is made and sold today • I can investigate and analyse existing products according to their characteristics. • I can develop a design criteria. • I can shape dough. • I can think of original ideas for a product based on my design criteria. • I can develop designs based on my design criteria and clearly communicate my final design. • I can select ingredients and kitchen equipment to help me follow a bread making recipe. • I can knead and bake. 	<p>Mechanical Posters</p> <ul style="list-style-type: none"> • Investigate and analyse a range of existing products • Understand and use mechanical systems in their products (for example levers and linkages) • Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at individuals or groups • Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes • 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 • Evaluating Our Posters Understand and use mechanical systems in their products (for example levers and linkages) • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. <ul style="list-style-type: none"> • I can investigate mechanical systems. • I can make mechanical systems which use levers and linkages • I can develop design criteria to help me design innovative product. • I can use sketches to develop and communicate ideas • I can use prototypes to develop my ideas. • I can carefully select materials and use different techniques. • I can name the parts and functions of a lever and linkage mechanical system. • I can evaluate my poster. 	<p>Global Food</p> <ul style="list-style-type: none"> • Understand seasonality, and know where and how a variety of ingredients are grown • 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 • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques <ul style="list-style-type: none"> • I can say where in the world ingredients come from • I can explain that diets around the world are based on similar food groups. • I can explain why rice is a good staple food. • I can cook rice • I can demonstrate a range of food skills and techniques • I can demonstrate a range of basic and advanced food skills and cooking techniques. • I can accurately and mainly independently follow a recipe demonstrating a range of cooking techniques.

KS2 Subject Content

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Design

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- 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

- 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.

	Autumn	Spring	Summer
Year 4/5	<p>Great Bread Bake-Off</p> <ul style="list-style-type: none"> • Understand how key events and individuals in design and technology have helped shape the world • Investigate and analyse a range of existing products • 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 • Select from and use a wider range of tools and equipment to perform practical tasks for example shaping accurately • Generate, develop, model and communicate their ideas through discussion and annotated sketches • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Select from and use a wider range of equipment to perform practical tasks accurately. Evaluate their ideas and products against their own Design Criteria. <ul style="list-style-type: none"> • I can find out about important people and events in the past that have shaped the way bread is made and sold today • I can investigate and analyse existing products according to their characteristics. • I can develop a design criteria. • I can shape dough. • I can think of original ideas for a product based on my design criteria. • I can develop designs based on my design criteria and clearly communicate my final design. • I can select ingredients and kitchen equipment to help me follow a bread making recipe. • I can knead and bake. 	<p>Mechanical Posters</p> <ul style="list-style-type: none"> • Investigate and analyse a range of existing products • Understand and use mechanical systems in their products (for example levers and linkages) • Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at individuals or groups • Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes • 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 • Evaluating Our Posters Understand and use mechanical systems in their products (for example levers and linkages) • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. <ul style="list-style-type: none"> • I can investigate mechanical systems. • I can make mechanical systems which use levers and linkages • I can develop design criteria to help me design innovative product. • I can use sketches to develop and communicate ideas • I can use prototypes to develop my ideas. • I can carefully select materials and use different techniques. • I can name the parts and functions of a lever and linkage mechanical system. • I can evaluate my poster. 	<p>Global Food</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown</p> <p>Understand and apply the principles of a healthy and varied diet</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <ul style="list-style-type: none"> • I can say where in the world ingredients come from • I can explain that diets around the world are based on similar food groups. • I can explain why rice is a good staple food. • I can cook rice • I can demonstrate a range of food skills and techniques • I can demonstrate a range of basic and advanced food skills and cooking techniques. • I can accurately and mainly independently follow a recipe demonstrating a range of cooking techniques.

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- 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]
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	Autumn	Spring	Summer
Year 3/4	<p>Programming Adventures</p> <ul style="list-style-type: none"> • Apply their understanding of computing to program, monitor and control their products • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams prototypes, pattern pieces and computer-aided • 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 • 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 • Apply their understanding of computing to program, monitor and control their products <ul style="list-style-type: none"> • I can program and control floor robots. • I can generate and develop ideas through discussion. • I can research a range of materials. • I can plan an adventure map. • I can use appropriate materials based on research. • I can monitor a floor robot. • I can evaluate a finished product. 	<p>Felt Phone Cases</p> <ul style="list-style-type: none"> • 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 • To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams • To select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities • To evaluate their ideas and products against their own design criteria i <ul style="list-style-type: none"> • I can write a design criteria for a mobile phone case. • I can generate a range of design ideas and clearly communicate my final design. • I can practise using different types of stitches and choose the best one to use on my final felt phone case. • I can make a paper template. • I can select decorative techniques and fastenings according to their functional properties and aesthetic qualities. • I can evaluate my product. 	<p>Marbulous Structures</p> <ul style="list-style-type: none"> • Investigate and analyse a range of existing products • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately • Investigate and analyse a range of existing products • Evaluate their ideas against their own design criteria and consider the views of others to improve their work <ul style="list-style-type: none"> • I can investigate free standing structures. • I can apply my understanding of structures. • I can use a wider range of tools and equipment to perform practical tasks accurately. • I can develop a range of practical skills to create bends • I can investigate free standing structures • I can select from and use materials and components to make a marble run. • I can evaluate and improve my design and technology work.