Curriculum Overview 2023-2024

DT

Kettlesing Felliscliffe Primary School

Beckwithshaw Primary School

Ripley CE Primary School

Design & Technology Progression in EYFS The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. The aim of this document is to help subject leaders to understand how the skills taught across EYFS feed into national curriculum subjects.

This document demonstrates which statements from the 2020 Development Matters are prerequisite skills for DT 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 DT.

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

- Physical Development
- Expressive Arts and Design

DT Progression			
Three and four year olds	Personal, Social and Emotional Development		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		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		Explore how things work.
	Expressive Arts and Design		Make imaginative and complex small worlds with blocks and construction kids, 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 the 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		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 good posture when sitting at a table or sitting on the floor.
	Expressive Arts and Design		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	Use a range of small tools, including scissors, paintbrushes and cutlery.
	Expressive Arts and Design	Creating with Materials	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share creations, explaining the process they have used.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KS1 Cycle A		Cooking and nutrition Making smoothies		Mechanisms Making a moving story book.		Structures Constructing a windmill
KS1 Cycle B	Textiles Puppets		Mechanisms Making a moving story book		Mechanisms Wheels and axles	
LKS2 Cycle A		Cooking and nutrition A balanced diet		Mechanisms Making a moving ***monster* (person/object)**		Structures Baby Bear's chair
LKS2 Cycle B	Textiles Pouches		Mechanisms Making a moving monster		Mechanisms Fairground wheel	
UKS2 Cycle A		Cooking and nutrition What could be healthier?		Digital world Monitoring devices		Mechanical systems Pop-up book
UKS2 Cycle B	Textiles Stuffed toys		Electrical systems Doodlers		Structure Bridges	

	Year Group	Designing	Making	Technical Knowledge	Evaluation	Cooking and Nutrition	Vocabulary
<u>Cooking and nutrition</u> Fruit and vegetables (Cycle A- Year 1)	**Year 1**	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.		Evaluate their ideas and products against design criteria.	Understand where food comes from.	Fruit Vegetable Seed Leaf Root Stem Smoothie Healthy Carton Design Flavour Peel Slice
<u>Mechanisms</u> Making a moving story book (Cycle A-Year 1)	**Year 1**	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 use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.		Sliders Mechanism Adapt Design criteria Design Input Model Template Assemble Test

<u>Structures</u> Constructing a windmill (Cycle A-Year 1)	**Year 1**	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.	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.	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.		Axle Bridge Design Design criteria Model Net Packaging Structure Template Unstable Stable Strong Weak
<u>Textiles</u> Puppets (Cycle B – Year 1)	**Year 1**	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.		Evaluate their ideas and products against design criteria.		Decorate Design Fabric Glue Model Hand puppet Safety pin Staple Stencil Template

Mechanisms **Making a moving story book** **(Cycle B – Year 1)**	**Year 1**	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 use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.		Sliders Mechanism Adapt Design criteria Design Input Model Template Assemble Test
Mechanisms **Wheels and axis** **(Cycle B – Year 1)**	**Year 1**	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 use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.		Axle Axle holder Chassis Diagram Dowel Equipment Mechanism wheel Mechanism wheel

Cooking and Nutrition **A balanced diet** **(Cycle A: Year 2/3)**	**Year 2**	Design purposeful, functional, appealing products for themselves and other users based on design criteria.			Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.	Use basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.	Balanced diet Balance Carbohydrate Dairy Fruit Ingredients Oils Sugar Protein Vegetable Design criteria
	Year 3	Design purposeful, functional, appealing products for themselves and other users based on design criteria. 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.			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 and apply principles of a healthy and varied diet.	Balanced diet Balance Carbohydrate Dairy Fruit Ingredients Oils Sugar Protein Vegetable Design criteria Recipe Processed
Mechanisms **Making a moving monster** **(Cycle A: Year 2/3)**	**Year 2**	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 use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.		Axle Design criteria Input Linkage Mechanical Output Pivot Wheel
	Year 3	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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	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.		Axle Design criteria Input Linkage Mechanical Output Pivot Wheel

Structures **Baby Bears chair** **(Cycle A: Year 2/3)**	**Year 2**	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.	Build structures, exploring how they can be made stronger, stiffer and more stable.	Evaluate their ideas and products against design criteria.		Design criteria Man-made Natural Properties Structure Stable Shape Model Test
	Year 3	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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	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.		Design criteria Man-made Natural Properties Structure Stable Shape Model Test
Textiles **Pouches** **(Cycle B Year 2/3)**	**Year 2**	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.		Decorate Fabric Fabric glue Knot Needle Needle threader Running stitch Sew Template Thread
	Year 3	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 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 their own design criteria and consider the views of others to improve their work.		Decorate Fabric Fabric glue Knot Needle Needle threader Running stitch Sew Template Thread Cotton Patch

Mechanisms **Making a moving monster** **(Cycle B Year 2/3)**	**Year 2**	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 use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.		Axle Design criteria Input Linkage Mechanical Output Pivot Wheel
	Year 3	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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	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.		Axle Design criteria Input Linkage Mechanical Output Pivot Wheel

<u>Mechanisms</u> Fairground wheel (Cycle B Year 2/3)	**Year 2**	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.	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	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.		Design Design criteria Wheel Ferris wheel Pods Axle Axle holder Frame Mechanism
	Year 3	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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products [for example, levers, sliders, wheels and axles, gears, pulleys, cams, levers and linkages].	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.		Design Design criteria Wheel Ferris wheel Pods Axle Axle holder Frame Mechanism

Cooking and Nutrition **What could be healthier?** **(Cycle A: Year 4/5/6)**	**Year 4**	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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. 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 and products against their own design criteria and consider the views of others to improve their work.	Understand and apply principles of a healthy and varied diet. Prepare and cook 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.	Beef Reared Processed Ethical Diet Ingredients Supermarket Farm Balanced Cross-contamination Diet Processed
	Year 5	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.		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.		Beef Reared Processed Ethical Diet Ingredients Supermarket Farm Balanced
	Year 6	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.		Beef Reared Processed Ethical Diet Ingredients Supermarket Farm Balanced Equipment Flavours Method Research Recipe Cook book Cross contamination Preparation

Digital World **Monitoring devices** **(Cycle A: Year 4/5/6)**	**Year 4**	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 compute raided design.		Apply their understanding of computing to program, monitor and control their 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.		Monitoring devices Thermoscope Design brief Inventor Programming comment Boolean Value Sustainability Decompose Electronic Thermometer Design criteria Vivarium Alert Duplicate Variable Plastic Plastic pollution Sensor Research Development Programming loop Ambient Copy Model Microplastics Man-made
	Year 5	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.		Apply their understanding of computing to program, monitor and control their 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.		
	Year 6	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.		Apply their understanding of computing to program, monitor and control their 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.		

Mechanical systems **Pop-up book** **(Cycle A: Year 4/5/6)**	**Year 4**	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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	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.		Design Input Motion Mechanism Criteria Research Reinforce Model
	Year 5	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.	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	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.		Design Input Motion Mechanism Criteria Research Reinforce Model
	Year 6	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.	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	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.		Design Input Motion Mechanism Criteria Research Reinforce Model

Textiles **Stuffed toys** **(Cycle B: Year 4/5/6)**	**Year 4**	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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.		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.		Accurate Annotate Appendage Blanket stitch Design criteria Detail Evaluation Fabric Sew Shape Stuffed toy Stuffing Template
	Year 5	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.		Accurate Annotate Appendage Blanket stitch Design criteria Detail Evaluation Fabric Sew Shape Stuffed toy Stuffing Template
	Year 6	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.		Accurate Annotate Appendage Blanket stitch Design criteria Detail Evaluation Fabric Sew Shape Stuffed toy Stuffing Template Decorate

Electrical systems **Doodlers** **(Cycle B: Year 4/5/6)**	**Year 4**	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, cutting, shaping, joining and finishing], accurately.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	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.		Circuit component Configuration Current Develop DIY Investigate Motor Motorised Problem solve Product analysis Series circuit Stable Target user
	Year 5	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, cutting, shaping, joining and finishing], accurately.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	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.		Circuit component Configuration Current Develop DIY Investigate Motor Motorised Problem solve Product analysis Series circuit Stable Target user
	Year 6	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, cutting, shaping, joining and finishing], accurately.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	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.		Circuit component Configuration Current Develop DIY Investigate Motor Motorised Problem solve Product analysis Series circuit Stable Target user

Structures **Bridges** **(Cycle B: Year 4/5/6)**	**Year 4**	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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	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.		Beam bridge Strength Lamination Factors Aesthetics Hardwood Sandpaper Assemble Wood sourcing Arch bridges Technique Stiffness Stability Joints Softwood Bench hook/vice Material properties Evaluate Truss bridge Corrugation Rigid Visual appeal Mark out Wood file Saw Reinforce Quality of finish
	Year 5	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.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	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.		
	Year 6	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	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	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.		