Knowledge, Skills and Understanding Progression for Design and Technology

DEVELOPMENT MATTERS
Children in reception will be learning to:
• Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively, sharing ideas, resources and skills.
EARLY LEARNING GOALS
• 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; • Make use of props and materials when role playing characters in narratives and stories.
KEY STAGE ONE
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
KEY STAGE TWO
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.

DESIGN						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Think about and discuss what they want to make. Work together to develop and realise creative ideas.	Think of some ideas of their own. Explain what they want to do. Use pictures and words to plan. Explain what they are making.	Think of ideas and plan what to do next. Describe their design by using pictures, diagrams, models and words.	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, ICT.	Devise a template. Explain how to join things in a different way. Experiment with and combine materials and processes to design and make 3D form.	Come up with a range of ideas after they have collected information. Produce a detailed step-by-step plan. Suggest some alternative plans and say what the good points and drawbacks are about each. Explain why their finished product is going to be of good quality. Explain how their product will appeal to the audience.	Use a range of information to inform their design. Use research to inform plans. Follow and refine their plan if necessary. Justify their plan to someone else.

MAKE						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Show good control and coordination in large and small movements Handle equipment and tools effectively, including pencils for writing Safely use and explore a variety of materials and tools, with precision Use different techniques for joining materials, such as how to use adhesive tape and different sorts of glue. Use a range of materials to construct with Experimenting with colour, design, texture, form and function	Make a structure/model using different materials. Cut materials. Select appropriate resources and tools for their building projects.	Choose the best tools and materials. Join things (materials/ components) together in different ways.	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.	Show a good level of expertise when using a range of tools and equipment. Confident about trying out new and different ideas. Experiment with and combine materials and processes to design and make 3D form.	Use a range of tools and equipment expertly. Keep checking that their design is the best it can be. Use textile and sewing skills as part of a project, e.g. hanging, textile book, etc. This could include running stitch, cross stitch, backstitch, appliqué and/or embroidery.	Use tools and materials precisely. Justify why they selected specific materials. Ensure that their work is precise and accurate.
EVALUATE						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Discuss problems and how they might be solved as they arise. Reflect on how they have achieved their aims.	Talk about their own work and things that other people have done.	Explain what went well with their work. Explain what they would improve, if they were to do it again.	Explore and evaluate a range of existing products.	Evaluate their product, thinking of both appearance and the way it works. Take time to consider how they could have made their idea better.	Check whether anything could be improved. Evaluate appearance and function against the original criteria.	Test and evaluate their final product. Evaluate if it is fit for purpose. Consider improvements. Consider how their product meets all design criteria.
TECHNICAL KNOWLEDGE						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Use different techniques for joining materials, such as how to use adhesive tape and different sorts of glue.	Explain which tools they are using. Describe how something works. Describe the materials using different words. Make a product which moves. Make their model stronger if it needs to be.	Use joining, folding or rolling to make it stronger. Incorporate some type of movement into models.	Use a range of techniques to shape and mould.	Use a range of advanced techniques to shape and mould. Attempt to make their product strong.	Begin to understand and use mechanical systems in their product eg gears and pulleys. Ensured that their product is strong and fit for purpose. Begin to apply their understanding of computing to program, monitor and control their products	Understand and use mechanical systems in their product eg gears and pulleys. Understand and use electrical systems in their products eg series circuits with switches, bulbs, buzzers and motors. Apply their understanding of computing to program, monitor and control their products

COOKING AND NUTRITION						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Begin to develop a food vocabulary using taste, texture and feel. Explore familiar food products e.g. fruit and vegetables. Stir, spread, knead, and shape a range of food and ingredients. Begin to work safely and hygienically. Start to think about the need for a variety of foods in a diet. Children know the importance for good health of physical exercise and a healthy diet, and talk about ways to keep healthy and safe.	Understand that all food comes from plants or animals. Know that everyone should eat at least 5 portions of fruit and vegetables every day. Know how to prepare simple dishes safely and hygienically, without using a heat source. Know how to use techniques such as cutting, peeling and grating. Measure and weigh food items using nonstandard measures (e.g. spoons, cups)	Understand that food comes from plants and animals. Understand how to name and sort foods into the 5 food groups (e.g. could use the Eat Well plate) Recognise the need for a variety of food in a healthy diet. Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. Demonstrate how to use techniques such as cutting, peeling and grating. Measure and weigh ingredients appropriately.	Understand how to prepare and cook a variety of dishes including experience of using a heat source. Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know how a healthy diet is made up from a variety and balance of different foods and drinks. Begin to know that to be active and healthy, food and drink are needed to provide energy for the body. Measure and weigh ingredients appropriately.	Understand that food is grown, reared and caught in the UK, Europe and the wider world. Understand how to prepare and cook a savoury dish, including experience of using a heat source. Understand what to do to be hygienic and safe Measure and weigh ingredients appropriately.	Begin to understand that seasons may affect the food available. Explain what times of year particular foods are eaten in. Demonstrate increasing confidence in how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Describe what to do to be safe and hygienic. Use appropriate tools and equipment, weighing and measuring with scales.	Explain how ingredients are grown, reared and caught. Understand seasonality and know where and how a variety of ingredients are grown and processed Understand how to use a range of techniques such as peeling, slicing, chopping, grating, mixing, spreading and baking. Use appropriate tools and equipment, weighing and measuring with scales.