

## DT Progression of Knowledge by Year

EYFS	
<p><b>Castles and cathedrals</b></p> <p>Children should</p> <p>Know some popular toys with the correct terminology.</p> <p>Know how to make some monsters suitable for children,</p> <p>Know how to add some features</p> <p>And, from Development Matters</p> <p>Construct with a purpose in mind, using a variety of resources [40 to 60 months]</p> <p>Use simple tools and techniques competently and appropriately [40 to 60 months]</p> <p>safely using explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function [ELG]</p> <p><b>Superfoods</b></p> <p>Children should:</p> <p>Know some basic food groups</p> <p>Know which foods are healthy</p> <p>Know how to Follow a simple recipe.</p> <p>And, from development Matters</p> <p>Eat a healthy range of food stuff and understand the need for variety in food [40 to 60 months]</p> <p>know the important for good health of physical exercise and the healthy diet and talk about ways to keep healthy and safe [ELG]</p> <p><b>Around the World</b></p> <p>Children should:</p> <p>Know how to cut around a fabric shape.</p> <p>Know how to carefully select fabrics to add decoration.</p> <p>And, from development Matters</p> <p>Experiment to create different textures [40 to 60 months]</p> <p>Select appropriate resources and adapt work where necessary [40 to 60 month]</p> <p>safely using explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function [ELG]</p>	<p><b>Stop, Look and Listen</b></p> <p>Children should:</p> <p>Know their favourite vehicle to compare, draw and label.</p> <p>Know the uses for a variety of vehicles.</p> <p>Know how to use a variety of materials and tools safely and effectively to create a vehicle</p> <p>And, from Development Matters</p> <p>Use simple tools and techniques competently and appropriately [40 to 60 month]</p> <p>safely using explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function [ELG]</p> <p><b>Pirates</b></p> <p>Children should:</p> <p>Know that food needs to be kept clean</p> <p>Know how to build a structure for their lunch box;</p> <p>And, from Development Matters</p> <p>Construct with a purpose in mind, using a variety of resources [40 to 60 months]</p> <p>Use simple tools and techniques competently and appropriately [40 to 60 months]</p> <p>safely using explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function [ELG]</p>

## Year 1

### Castles and cathedrals

Children should:

- Know how to analyse popular toys with the correct terminology.
- Know how to create functional linkages that produce the desired input and output motions.
- Know how to design monsters suitable for children, which satisfy most of the design criteria.
- Know that they need to evaluate their two designs against the design criteria,
- Know to choose their best design.
- Know how to select and assemble materials to create their planned monster features.
- Know how to assemble the monster to their linkages without affecting their functionality.

### Plastic Pollution

Children should

- Know that the food they eat can be split into different groups
- Know they should eat a balance of foods, including fish, to have a healthy and varied diet.
- Know how to use the basic principles of a healthy diet to prepare dishes
- Know why some food is healthy.
- Know how to follow a simple recipe.
- Know to correctly use measuring spoons, zesters and juicers when preparing dishes.
- Know that fruit and vegetables are grown in different places and that fish is caught in seas, rivers and lakes.

### Around the world

Children should

- Know how to judge existing products on a simple scale.
- Know how to use a graphics program to create a simple design.
- Know how to cut out a fabric shape.
- Know a basic stitch.
- Know how to demonstrate some accuracy when cutting around a fabric shape
- Know how to create a seam using a running stitch

### Stop, Look and Listen

Children should:

- Know how to choose their favourite vehicle to compare, draw and label.
- Know how to identify a variety of different types of vehicles.
- Know how to identify the main features of a variety of vehicles
- Know how to identify the uses for a variety of vehicles.
- Know what wheels, axles and chassis are.
- Know that there are two different ways of attaching wheels to axles.
- Know how to experiment with a range of materials and techniques to combine wheels, axles and chassis
- Know how to choose materials to use as the body of a vehicle
- Know how to identify different ways of combining materials to create the body of a vehicle. Know how to identify different ways of decorating the body of a vehicle.
- Know how to design a vehicle to include wheels, axles, chassis and bodies
- Know how to describe which materials and tools they will need to make their vehicles.
- Know how to discuss their designs and say what they think and feel about them.
- Know how to follow a design to create a vehicle
- Know how to use a variety of materials and tools safely and effectively to create a vehicle.
- Know how to identify ways in which they could improve their products and amend accordingly.

### Under the Sea

Children should:

- Know that the food they eat can be split into different groups
- Know they should eat a balance of foods, including fish, to have a healthy and varied diet.
- Know how to use the basic principles of a healthy diet to prepare dishes
- Know why a food is healthy.
- Know how to follow a simple recipe.
- Know how to correctly use measuring spoons, zesters and juicers when preparing dishes.
- Know that fruit and vegetables are grown in different places and that fish is caught in seas, rivers and lakes.

## Year 2

### London's Burning

Children should

Know to explore an existing product and describe its problems and positives;

Know how to draw a design and describe it;

Know how to build strong structures;

Know how to test their own product

Know that they need to suggest improvements

### Castles and Cathedrals

Children should:

Know how to describe the features of a windmill?

Know that some materials are better to catch the wind than others.

Know how to explain what materials to use to construct a windmill.

Know how to choose appropriate materials to make a windmill

Know how to construct a windmill that represents a particular theme

### I need a Hero

Children should:

Know how to recognise and describe a variety of different types of puppets

Know how to use a needle and thread to attach buttons and other features to material

Know how to develop ideas by putting components together

Know how to describe what materials and tools they will need to make their puppet

Know how to follow their designs to create their puppets

Know how to work safely and sensibly when working with a variety of materials and tools

### Stop, Look and Listen

Children should:

Know how sliders and levers move.

Know how to create a simple mechanism.

Know how to Identify and record examples of products with moving parts around the home.

Know how these mechanisms function and their uses.

Know some everyday materials and describe their properties.

Know how to test materials to determine how they bend, twist, stretch, or squash.

Know how to select suitable materials for specific purposes, such as designing a congratulations card.

Know some occasions for which congratulations cards are made.

Know how design breifs relate to specific needs.

Know how moving parts (like pop-up mechanisms) function in cards and books.

Know how to develop ideas that incorporate decorative sliders, levers, or pop-up mechanisms.

Know to follow a design plan to construct a card with moving mechanisms.

Know some technical vocabulary to present and explain the completed card.

### To Infinity and Beyond

Children should

Know how to describe what puppets are and how they are used

Know how to recognise and describe a variety of different types of puppets

Know how to identify the features of a variety of puppets

Know how to use a template to cut out appropriate sizes of fabric

Know how to develop ideas by putting components together

Know how to discuss their finished work and evaluate what went well and what could be improved

Know how to use running stitch and/or over stitch to join two pieces of fabric together

Know how to use a needle and thread to attach buttons and other features to material

Know how to work safely with a variety of sharp tools, such as needles and scissors

Know how to design a glove puppet for a particular purpose

Know how to describe what materials and tools they will need to make their puppet

Know how to describe the steps they will need to take to make their puppet

Know how to describe the steps they will need to take to create their puppet

Know how to follow their designs to create their puppets

Know how to work safely and sensibly when working with a variety of materials and tools

Know how to evaluate their own finished products and say what they think and feel about them

Know how to comment on the work of others and offer their opinions

Know how to identify ways in which they could improve their work in the future

### Sun Sea and Sand- Moving Books

Yr 2

Know that some books and products have moving parts

Know what sliders are and how they make a moving element

Know what levers are.

Know how to include them in a design

Know what a wheel mechanism is and how it can move round a pivot

Know how to design a habitat including at least 2 moving elements

Know how to draw a design for their product

Know how to adapt their design Know how to strengthen a material

Know how to join materials together.

## Year 3

### Stone Age to Iron Age (1)

Children should:

Know what CAD is.

Know that 3D printers create 3D objects from plans

Know that the plans can be hand drawn or can use computer software including draw tools.

Know that software can be used to create 3D designs from 2D plans.

Know how to create a 2d design for a keyring

Know that they need a clear design

Know that the 3D printer uses the design to create a 3d model

Know that the model is recreated using the printer software.

Know the limitations of the 3d design.

Know how to design for a purpose.

Know how to evaluate their product

### Stone Age to Iron Age (2)

Children should:

Know how to Investigate and analyse a range of existing products, explaining how to fluences design decisions.

Know how to develop a design based on a design criteria tailored for specific individuals or groups.

Know how to Use appropriate techniques to decorate fabrics and explain the reasons for the chosen methods.

Know how to create a hem using a running stitch and join fabrics using an overcast stitch, with increasing levels of independence.

Know how to evaluate and refine ideas against design criteria, considering feedback and the views of others.

Know how to Identify, name, and understand the use of different stitches, explaining their suitability for the task.

### The Commonwealth

Children should:

Know how a small event led to a larger significant event in Design and Technology which helped shape the world.

Know how to use research to create ideas and refine them to develop design criteria.

Know how to build and join strong frame structures and stiffen materials.

Know how to apply their understanding of where and how kites need stiffening

### Transport Through the ages

Children should:

Know how to generate and communicate their ideas by sketching pencil case designs, considering functionality and aesthetics.

Know how to create a detailed plan that includes the 2D shapes they will convert into their 3D pencil case.

Know some specific design criteria, such as durability, size, and visual appeal, and ensure their plans reflect these requirements

Know basic sewing techniques, such as running stitch or backstitch, to join fabric pieces together.

Know how to cut out 2D fabric shapes accurately, using templates or measurements.

Know how to decorate their pencil cases with materials such as fabric paint, embellishments, or appliqué, based on their design criteria.

Know how to assemble their pencil case by converting the 2D shapes into a 3D product.

Know to test their finished pencil case against the design criteria they set at the start of the project.

reflect on the strengths of their product and identify areas for improvement.

### Roman Britain

Children should:

Know about stability in Free-Standing Structures:

Know some features that make free-standing structures stable.

Know how stability is achieved through design and construction.

Know at least two techniques for strengthening paper and card, such as folding, layering, or reinforcing edges.

Know how to compare the effectiveness of these techniques in improving durability.

Know various ways to create free-standing photograph frames using different materials (e.g., paper, card, wood).

Know the benefits and challenges of each method.

Know how to follow the design to construct a frame using appropriate tools and materials (e.g., wood and card).

Know how to apply strengthening techniques to ensure the structure is both sturdy and functional.

Know how to assess the stability, strength, and appearance of the finished photograph frame.

Know the need to identify strengths and areas for improvement, providing constructive feedback on the design and construction process.

## Year 4

### Rivers

Children should:

Know what mechanical Systems are

Know how mechanical systems work, including identifying inputs and outputs in lever/linkage mechanisms.

Know how to design with Purpose:

Know why to generate innovative ideas informed by design criteria tailored to a specific audience and the needs of the design brief.

Know how to create annotated designs that clearly illustrate component movement and include sufficient detail.

Know the need for prototypes:

Know how to construct well-finished prototypes and accompanying posters that incorporate one, two, or up to three lever/linkage mechanisms.

Know to assess their product against the established design criteria, identifying strengths and areas for improvement.

Know the need to provide a detailed evaluation of what went well and what could be enhanced.

### Anglo Saxons and Picts

Children should:

Know what electrical Systems are

Know how electrical circuits work, including identifying inputs and outputs, switches and motors.

Know how to design with Purpose:

Know why to generate innovative ideas informed by design criteria tailored to a specific audience and the needs of the design brief.

Know how to create annotated designs that clearly illustrate component movement and include sufficient detail.

Know the need for prototypes:

Know how to construct well-finished prototypes and accompanying posters that incorporate one, two, or up to three lever/linkage mechanisms.

Know to assess their product against the established design criteria, identifying strengths and areas for improvement.

Know the need to provide

### Vikings and Saxons-

Children should:

Know that electrical systems consist of an input, process, and output  
Know some components in a circuit and classify them as input or output devices.

Know how to safely disassemble battery-powered products.

Know how products meet the needs of specific users, considering their functionality and design.

Know how to create a meaningful and authentic design brief within a given context, clearly outlining the purpose and intended audience.

Know how to use annotated sketches and exploded diagrams to develop and visually communicate ideas for electrical circuits.

Know how to integrate computer-aided design (CAD) diagrams to enhance the clarity and precision of designs.

Know how to build simple, manually controlled series circuits using batteries, switches, bulbs, and buzzers.

Know how to construct switches that operate in different ways, selecting and testing materials for effectiveness.

Know the safe and appropriate use of tools, equipment, and materials while creating electrical circuits.

Know how to modify designs to better meet the needs of intended users, drawing on feedback and testing results.

Know how to test the functionality of switches and circuits, evaluating their effectiveness.

Know how to evaluate final products against the agreed design criteria and their intended purpose.

### World's Kitchen

Children should

Know where in the world ingredients come from.

Know that diets around the world are based on similar food groups.

Know why rice is a good staple food.

Know how to demonstrate a range of food skills and techniques.

Know how to prepare a range of savoury foods from a variety of countries (China, Mexico, Germany etc )

Know how to follow a recipe demonstrating a range of cooking techniques.

Know how to name some varied ingredients and say which part of the world they come from.

Know how to explain the different food groups on the Eatwell plate

Know how to use some basic food skills, such as grating and chopping,  
Know where and how a variety of ingredients are grown in the context

of looking at where a variety of ingredients come from

### Maya

Children should:

Know how to work as a group to develop a viable idea through discussion and research.

Know how to create detailed designs for mechanical devices, incorporating at least two moving parts and using annotated diagrams.

Know how to develop design criteria based on the design brief and use it to inform decisions.

Know how to measure, mark out, and cut materials accurately (to the nearest cm or mm) using appropriate tools.

Know how to assemble and refine components such as cam mechanisms and frameworks with precision and safety.

Know how to make an automaton or mechanical device that is functional, accurate, and has a high-quality finish.

Know the importance of being able to select suitable materials and apply techniques like sanding to enhance the final product.

Know why to use peer feedback and design criteria to guide the evaluation process.

Know why to reflect on strengths, areas for improvement, and progress throughout development and upon completion.

## Year 5

### Pilgrim fathers

Children should:

Know the purpose of alarm systems and when they are used.

Know how different types of switches (like push-to-make, push-to-break, and tilt switches) work and what they do in a circuit.

Know how to build circuits using different switches and components and understand what each part does in the system.

Know how to find and fix simple problems in a circuit so it works properly.

Know how to create a design for an alarm system that fits a specific need and user, using clear and labelled drawings.

Know how to use your understanding of switches and circuits to make designs that are creative and useful.

Know how to put together an alarm system from your design using the right tools, materials, and methods.

Know how to test if the alarm system works well and meets the goals of the design.

Know how to check the finished alarm system against the design goals, pointing out what works well and what could be better.

Know why it is important to think about the design and building process afterwards.

### Crime and Punishment/Ancient Greeks

Children should

Know how to develop their own design criteria aimed at a specific target market.

Know how to prioritize key points from their design criteria to support decision-making.

Know how to create accurate paper templates for both the product (e.g., lunch box) and its decorations.

Know how to use backstitch to securely join materials.

Know how to demonstrate skill in at least two different types of stitches.

Know how to combine different stitching techniques in a product for both function and appearance.

Know how to measure, mark, and cut fabric accurately using the correct tools and methods.

Know how to keep sewing and cutting lines neat and in line with the design plan.

Know how to reflect on the finished product and how well it meets the design criteria in terms of look and function.

Know how to suggest improvements to increase precision, visual appeal, and overall quality.

### Parliament and Power-Electrical components

Children should

Know the features of commercially available lights that make them suitable for specific purposes.

Know how a light and switches function within an electrical system.

Know how to work safely with electricity.

Know which components are needed to build a circuit that illuminates a bulb.

Know how to create a simple circuit that makes a bulb light up.

Know how to identify metal components that conduct electricity.

Know about a range of different switches and their uses.

Know that electrical contact must be made to complete a circuit.

Know how to create their own switches and place them correctly in a circuit to control a bulb.

Know how to apply their ideas when designing their own light.

Know how to draw and annotate a light design, considering its purpose, the choice of switch, and how to conceal the wiring.

Know how to describe the steps involved in making their product.

Know how to follow a design plan accurately.

Know how to test, demonstrate, and evaluate their finished light design.

Know how to evaluate a completed product against the original design criteria.

## Year 6

### Land use-cartographic skills

Children should:

Know the purpose of alarm systems and identify scenarios where they are used.

Know how different types of switches (e.g., push-to-make, push-to-break, tilt switches) are activated and their functions within circuits. Know how to construct circuits incorporating a variety of switches and components, identifying the roles of each within the system.

Know how to diagnose and resolve simple faults in circuit construction to ensure functionality.

Know how to develop a design for an alarm system suited to a specific purpose and user, ensuring clear and labelled diagrams.

Know how to apply knowledge of switches and circuits in creating designs that are innovative and practical.

### Parliament and Power

Children should

Know the features of commercially produced lights that make them appropriate for specific functions.

Know how lights and switches operate within an electrical system.

Know how to handle and work with electricity safely.

Know which components are necessary to construct a circuit that powers a bulb.

Know how to assemble a simple circuit to successfully illuminate a bulb.

Know how to recognise metal components that act as electrical conductors.

Know about a variety of switches and their different applications.

Know that a complete electrical contact is required to close a circuit.

Know how to assemble an alarm system based on their design using appropriate tools, materials, and techniques. O

Know how to test the alarm system for effectiveness, ensuring it meets the requirements of the design brief.

Know how to assess the finished alarm system against the design criteria, identifying its strengths and areas for improvement.

Know why to reflect on the design and construction process, incorporating feedback to suggest improvements for future projects

**Crime and Punishment/Ancient Greeks**

Children should

Know how to formulate design criteria tailored to a specific target market.

Know how to prioritise key elements of the design criteria to guide decision-making.

Know how to produce precise paper templates for both the product (e.g., lunch box) and its decorative features.

Know how to execute a backstitch to securely join fabric components.

Know how to demonstrate competence in using at least two distinct stitching techniques.

Know how to integrate multiple stitching methods to enhance both the functionality and aesthetic quality of the product.

Know how to measure, mark, and cut fabric accurately using appropriate tools and refined techniques.

Know how to maintain clean, consistent sewing and cutting lines that align with the intended design.

Know how to critically reflect on the final product in relation to the original design criteria, assessing both visual and functional aspects.

Know how to propose meaningful improvements that enhance precision, aesthetic appeal, and overall craftsmanship.

Know how to design and construct their own switches and integrate them effectively into a circuit to control a bulb.

Know how to develop and apply their ideas when designing a light for a specific purpose.

Know how to produce a detailed and annotated light design, considering its function, choice of switch, and how to conceal the circuit.

Know how to explain the method they will use to construct their product.

Know how to follow a design accurately during the making process.

Know how to test, present, and evaluate their completed light design.

Know how to assess a final product against established design criteria.