DESIGN & TECHNOLOGY LEARNING JOURNEY

Across all phases pupils should know about a range of changemakers within Design & Technology including inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.

YEAR 6

I can investigate and analyse:
- how much products cost to make
- how innovative and sustainable the materials in products are
- what impact products have

I can demonstrate resourcefulness when tackling practical problems

I know that food contains different substances – nutrients, water and fibre – that are needed for health

I understand that different shaped cams produce different outputs.

I can make design decisions, taking account of constraints such as time, resources and cost

I can use CAD to develop and communicate their ideas

I can critically evaluate the quality of the design, manufacture and fitness for purpose of own products

- I know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro.
- I know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric.

I know that structures can be strengthened by manipulating materials and shapes.

- I know that using a template helps to accurately mark out a design on fabric.
- I understand the importance of consistently sized stitches.

- I know how to program a computer to monitor changes in the environment and control their products

I know different ways to reinforce structures.

I know that 'properties' describe the form and function of materials and material selection is important based on properties.

- I know how to program a computer to control their products
- I know that series circuits only have one direction for the electricity to flow and when there is a break in a series circuit, all components turn off.

I can accurately measure, mark out, cut, shape, assemble, join and combine components and materials

YEAR 5

I can investigate and analyse:
-how well products have been designed and made
-how well products work and achieve their purpose
-how well products meet user needs and wants

- I know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically.
- I know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate

- I know that applique is a way of mending or decorating a textile.
- I know that when two edges of fabric have been joined together it is called a seam.
- I understand that some products are turned inside out after sewing to hide the stitching.

I know how mechanical systems such as cams or pulleys or gears create movement

I use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate ideas.

I use computer-aided design to develop and communicate their ideas

- I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking
- I know that recipes can be adapted to change the appearance, taste, texture and aroma

I understand that mechanisms can be used to change one kind of motion into another.

- I know that seasons may affect the food available

YEAR 4

- I understand how triangles can be used to reinforce structures

I can explain choice of materials and components according to functional and aesthetic qualities

I can measure, mark out, cut, assemble, join, combine and shape materials and components with some accuracy

I know that electrical conductors allow electricity can pass through and electrical insulators do not

I know that an electrical circuit must be complete for electricity to flow.

- I know that pneumatic systems operate by drawing in, releasing and compressing air.

I can identify the strengths and areas for development in own products

I can consider the views of intended users, to improve work

- I know that different stitches can be used when sewing.
- I know that a 3-D textiles product can be assembled from two identical fabric shapes

- I understand that wide and flat based objects are more stable.
- I know how to make strong, stiff shell structures

I can model ideas using prototypes and pattern pieces

YEAR 3

I can select tools and equipment suitable for the task

I can follow procedures for safety and hygiene

- I know that an electrical system is a group of parts that has an input, process and output
- I know the name and appearance of a bulb, battery, battery holder and wire to build simple circuits.

I can generate realistic ideas, focusing on the needs of the user.

I know:
- that all food comes from plants or animals
- how to name and sort foods into the five groups on The eatwell plate
- how to use techniques such as cutting, peeling and grating

I can make simple judgements about products and ideas against design criteria

I can talk about how products work and what they are made from

I know:
- that food has to be farmed, grown or caught
- how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking
- that to be active and healthy, food and drink are needed to provide energy for the body

- I understand that a template is used to cut out the same shape multiple times.

I can model ideas by exploring materials, components and construction kits.

I use ICT to develop and communicate ideas

I know that a slider mechanism has a slider, slots, guides, bridges and an object.

I understand that axles are used in to make parts turn in a circle.

I can select from a range of materials and components according to their characteristics

assemble, join and combine materials and components

use finishing techniques

- I know that a structure is something which has been made from parts.

YEAR 2

I can talk about what I have made

I can select from a range of tools and equipment

- I know that a mechanism is the parts of an object that move together.
- I know about the movement of simple mechanisms such as levers, sliders, wheels and axles .

- I know that everyone should eat at least five portions of fruit and vegetables every day
- I know how to prepare simple dishes safely and hygienically, without using a heat source

I know that:
- a 'stable' structure is firmly fixed and unlikely to change or move
- a 'strong' structure is one which does not break easily.
- a 'stiff' structure or material is one which does not bend easily.

- I know that 'joining technique' means connecting two pieces of material together.
- I know that there are various temporary methods of joining fabric by using staples. glue or pins.
- I understand that different techniques for joining materials can be used for different purposes.

- I know how freestanding structures can be made stronger, stiffer and more stable
- I know that cylinders are a strong type of structure
- I know that a structure is something that has been made and put together.

YEAR 1

I can state what products I am designing, how they will work and who the user will be.

Develop and communicate ideas by talking and drawing.

Across all year groups

I use my learning from science and maths to help design and make products that work

I use the correct technical vocabulary for the projects I am undertaking