




Curriculum 22 – Subject Sequence for DT

Year Group & Unit Project Title Key Concepts NC PoS Reference	Vocabulary	Knowledge (specific facts or truth components. A knowledge statement will often contain substantive, declarative or explicit knowledge.) Core Knowledge – Component Knowledge Specific Knowledge – Composite Knowledge	Skills (the use and application of composite knowledge. A skill statement will often contain implicit, procedural and disciplinary knowledge.)
<p>Year 4</p>  <p>Fresh food, Good food</p> <p>This project teaches children about food decay and preservation. They discover key inventions in food preservation and packaging, then make examples. The children prepare, package and evaluate a healthy snack.</p> <p>Key Concepts: <u>Evaluation</u> <u>Everyday products</u> <u>Food prep & cooking</u> <u>Generation of ideas</u> <u>Materials for purpose</u> <u>Nutrition</u> <u>Origins of food</u> <u>Significant people</u> <u>Staying safe</u> <u>Structures</u></p> <p>11 Programmes of study, 11 skills and 14 knowledge statements</p> <p>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.</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>	<p>Evaluation</p> <p>evaluation fulfil design criteria improve success</p> <p>Generation of ideas</p> <p>build deconstruct net reconstruct sketch</p> <p>Everyday products</p> <p>Tetra Pak Tupperware bag bottle box can carton cling film compostable food packaging jar recyclable recycle reuse</p> <p>Materials for purpose</p> <p>Polystyrene card cardboard cling film glass paper plastic tin tin foil</p> <p>Significant people</p> <p>Dr Ruben Rausing Earl Tupper Gerald Thomas Henry D Thatcher Jacob Perkins Kruger Brewing Company Louis Pasteur Nicolas Appert</p>	<p>core knowledgeAnnotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p> <p>core knowledgeAnnotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p> <p>core knowledgeDifferent materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.</p> <p>core knowledgeDesign features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.</p> <p>specific knowledgeFood packaging provides physical protection for foods and can prevent contamination from microorganisms.</p> <p>specific knowledgeMaterials, including plastic, paper, cardboard, foil and metal, can be used to package food. Some types of packaging, such as tin cans, can significantly extend the shelf life of some foods. Some packaging is more environmentally friendly than others.</p> <p>core knowledgeEvaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.</p> <p>core knowledgeSignificant designers and inventors can shape the world.</p> <p>specific knowledgeFood deteriorates due to the growth of microorganisms. Decay can be prevented or delayed by preservation methods, such as drying, salting, pickling, canning, pasteurising, refrigerating or freezing the food.</p> <p>specific knowledgeFood packaging plays an important role in keeping foods fresh. The 'use by' date shows when the food is no longer safe to eat. The 'best before' date shows the date after which the food will lose some flavour or texture.</p>	<p>Y4 skill 1 Use annotated sketches and exploded diagrams to test and communicate their ideas.</p> <p>Y4 skill 1 Use annotated sketches and exploded diagrams to test and communicate their ideas.</p> <p>Y4 skill 1 Choose from a range of materials, showing an understanding of their different characteristics.</p> <p>Y4 skill 3 Investigate and identify the design features of a familiar product.</p> <p>Y4 skill 1 Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.</p> <p>Y4 skill 3 Explain how and why a significant designer or inventor shaped the world.</p>

<p>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.</p> <p>Investigate and analyse a range of existing products.</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>Understand how key events and individuals in design and technology have helped shape the world.</p> <p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</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>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p> <p>Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.</p>	<p>Peter Durand Ralph Wiley TV dinners Tetra Pak Tupperware William Cullen William Kellogg best before canning drying freezing pasteurisation pickling refrigeration salting saran wrap use by</p> <p>Structures</p> <p>cone cube cuboid hexagonal prism net packaging prototype triangular prism</p> <p>Food preparation and cooking</p> <p>bake blender chop chopping board cool crush cut garlic press grate heat knife mash masher mix pastry brush peel slice spread tear wash</p> <p>Nutrition</p> <p>fresh healthy snack</p>	<p>core knowledge A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthened by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to straighten and strengthen them).</p> <p>specific knowledge Most cardboard packaging is produced from a net. Packages can be strengthened by using thicker cardboard or multiple layers.</p> <p>core knowledge Healthy snacks include fresh or dried fruit and vegetables, nuts and seeds, rice cakes with low-fat cream cheese, homemade popcorn or chopped vegetables with hummus. A healthy packed lunch might include a brown or wholemeal bread sandwich containing eggs, meat, fish or cheese, a piece of fresh fruit, a low-sugar yoghurt, rice cake or popcorn and a drink, such as water or semi-skimmed milk.</p> <p>specific knowledge Foods need packaging to keep them fresh, safe to eat and free from damage. Food packaging also provides nutritional information about the food inside, 'use by' and 'best before' dates, and the materials and recyclability of the packaging.</p> <p>core knowledge Cooking techniques include baking, boiling, frying, grilling and roasting.</p> <p>core knowledge Particular areas of the world have conditions suited to growing certain crops, such as coffee in Peru and citrus fruits in California in the United States of America.</p> <p>core knowledge Chemicals are used in the home every day. They include cleaning products, such as bleach and disinfectant, but also paints, glues, oils, pesticides and medicines. Most chemical products carry a hazard symbol showing in what way the chemical could be harmful. Chemicals should only be used under adult supervision. Appropriate safety precautions, such as wearing goggles and gloves, working in a well-ventilated room, wiping up spills and tying back long hair, should be taken.</p>	<p>Y4 skill 1 Prototype shell and frame structures, showing awareness of how to strengthen, stiffen and reinforce them.</p> <p>Y4 skill 2 Design a healthy snack or packed lunch and explain why it is healthy.</p> <p>Y4 skill 1 Identify and use a range of cooking techniques to prepare a simple meal or snack</p> <p>Y4 skill 1 Identify and name foods that are produced in different places in the UK and beyond.</p> <p>Y4 skill 1 Work safely with everyday chemical products under supervision, such as disinfectant hand wash and surface cleaning spray.</p>
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 <p>Year 4 Warp and Weft – Art focus</p> <p>This project teaches children about the artform of weaving and how it has developed over time, including the materials and techniques required to create woven patterns and products.</p> <p>Key Concepts: Materials for purpose</p> <p>1 Programme of study, 1 skills and 2 knowledge statements</p> <p>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.</p>	<p>Materials for purpose</p> <p>appearance colour elasticity material natural pattern shape synthetic textile texture Yarn</p> <p>Significant people</p> <p>loom weaver Weaving</p>	<p>core knowledge Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.</p> <p>specific knowledge Visual elements of yarn include the colour, appearance, shape, texture, elasticity and type.</p>	<p>Y4 skill 1 Choose from a range of materials, showing an understanding of their different characteristics.</p>
 <p>Year 4 Misty Mountain, Winding River - Geography focus</p> <p>(Mini topic for Functional and Fancy Fabrics – art focus)</p> <p>This project teaches children about the characteristics and features of rivers and mountain ranges around the world, including a detailed exploration</p>	<p>Evaluation</p> <p>appearance attractive design criteria evaluation improvement purpose review Success</p> <p>Generation of ideas</p> <p>annotate design criteria plan Sketch</p> <p>Everyday products</p> <p>home furnishing home product</p> <p>Materials for purpose</p> <p>comfortable delicate durable fabric</p>	<p>core knowledge Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.</p> <p>core knowledge Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.</p>	<p>Y4 skill 1 Choose from a range of materials, showing an understanding of their different characteristics.</p> <p>Y4 skill 1 Investigate and identify the design features of a familiar product.</p>

<p>of the ecosystems and processes that shape them and the land around them.</p> <p>Key Concepts: Everyday products Materials for purpose</p> <p>2 Programmes of study, 2 skills and 2 knowledge statements</p> <p>Y4 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.</p> <p>Y4 Investigate and analyse a range of existing products.</p>	<p>flexibility flexible lightweight man-made material natural property soft strength stretchy strong synthetic textile texture tough use versatile Waterproof</p> <p>Significant people Arts and Crafts movement Morris & Co William Morris textile designer</p> <p>Compare and contrast appearance colour compare component different embellishment function material pattern property purpose quality similar Size</p> <p>Cutting and joining textiles fraying hem pinking shears running stitch Sew</p> <p>Decorating and embellishing textiles block printing diamond pattern structure trellis wey</p>		
<p>Year 4</p>	<p>Evaluation appearance attractive design criteria evaluation</p>	<p>core knowledge Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p> <p>specific knowledge Annotated sketches and exploded</p>	<p>Y4 skill 1 Use annotated sketches and exploded diagrams to test and communicate their ideas.</p>



Functional and Fancy Fabrics – art focus

Key Concepts:

- Compare and contrast
- Cut and join
- Decorating textiles
- Evaluation
- Everyday products
- Generation of ideas
- Investigation
- Materials for purpose
- Significant people

7 Programmes of study, 10 skills and 14 knowledge statements

Y4 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.

Y4 Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Y4 Select from and use a wider range

improvement
purpose
review
Success

Generation of ideas

annotate
design criteria
plan
Sketch

Everyday products

home furnishing
home product

Materials for purpose

comfortable
delicate
durable
fabric
flexibility
flexible
lightweight
man-made
material
natural
property
soft
strength
stretchy
strong
synthetic
textile
texture
tough
use
versatile
Waterproof

Significant people

Arts and Crafts movement
Morris & Co
William Morris
textile designer

Compare and contrast

appearance
colour
compare
component
different
embellishment
function
material
pattern
property
purpose
quality
similar

diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

core knowledge Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

specific knowledge Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

core knowledge Useful tools for cutting include scissors, craft knives, junior hacksaws with pistol grip and bench hooks. Useful tools for joining include glue guns. Tools should only be used with adult supervision and safety rules must be followed.

specific knowledge Joining tools to use with fabric include needles, pins and clips, cutting tools include a variety of scissors such as pinking shears, finishing tools include an iron and ironing board.

core knowledge A hem runs along the edge of a piece of cloth or clothing. It is made by turning under a raw edge and sewing to give a neat and quality finish.

core knowledge Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.

specific knowledge Fabrics can be natural or synthetic. Natural fabrics include cotton, silk and wool. Synthetic fabrics include Lycra, polyester and nylon.

core knowledge Block printing techniques and fabric paint are used to create decorative, repeated patterns on fabrics.

core knowledge A comparison table can be used to compare products by listing specific criteria on which each product can be judged or scored.

core knowledge Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.

specific knowledge Design features include purpose and function, appearance, quality, material, size, colour, pattern, embellishment, durability and usability.

Y4 skill 1 Use annotated sketches and exploded diagrams to test and communicate their ideas.

Y4 skill 1 Select, name and use tools with adult supervision.


Y4 skill 1 Hand sew a hem or seam using a running stitch.

Y4 skill 1 Choose from a range of materials, showing an understanding of their different characteristics.

Y4 skill 1 Create detailed decorative patterns on fabric using printing techniques.

Y4 skill 1 Create and complete a comparison table to compare two or more products.

Y4 skill 1 Investigate and identify the design features of a familiar product.

<p>of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.</p> <p>Y4 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.</p> <p>Y4 Investigate and analyse a range of existing products.</p> <p>Y4 Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>Y4 Understand how key events and individuals in design and technology have helped shape the world.</p>	<p>Size</p> <p>Cutting and joining textiles fraying hem pinking shears running stitch Sew</p> <p>Decorating and embellishing textiles block printing diamond pattern structure trellis wey</p>	<p>core knowledge Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.</p> <p>core knowledge Significant designers and inventors can shape the world.</p> <p>specific knowledge William Morris was a British textile designer, artist and socialist activist associated with the British Arts and Crafts Movement. He was a significant contributor to the revival of traditional British textile arts and methods of production.</p>	<p>Y4 skill 1 Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.</p> <p>Y4 skill 1 Explain how and why a significant designer or inventor shaped the world.</p>
 <p>Year 4 Electrical circuits and conductors – science focus</p> <p>This project teaches children about electrical appliances and safety. They construct simple series circuits and</p>	<p>Evaluation</p> <p>evaluation feedback finish improvement modification</p> <p>Generation of ideas</p> <p>annotated sketch design criteria exploded diagram</p> <p>Everyday Products</p>	<p>core knowledge Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p> <p>core knowledge Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p> <p>core knowledge A comparison table can be used to compare products by listing specific criteria on which each product can be judged or scored.</p> <p>core knowledge Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product</p>	<p>Y4 skill 1 Use annotated sketches and exploded diagrams to test and communicate their ideas.</p> <p>Y4 skill 1 Use annotated sketches and exploded diagrams to test and communicate their ideas.</p> <p>Y4 skill 1 Create and complete a comparison table to compare two or more products.</p> <p>Y4 skill 3 Investigate and identify the design features of a familiar product.</p>

<p>name their parts and functions, including switches, wires and cells. They investigate electrical conductors and insulators and identify common features of conductors. It also teaches children about programmable devices. They combine their learning to design and make a nightlight.</p> <p>Key concepts: Compare and contrast Electricity Evaluation Everyday products Generation of ideas Use of ICT</p> <p>6 Programmes of study, 7 skills and 9 knowledge statements</p> <p>Y4 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.</p> <p>Y4 Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Y4 Investigate and analyse a range of existing products.</p> <p>Y4 Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>Y4 Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors).</p> <p>Y4 Apply their understanding of computing to program, monitor and control their products.</p>	<p>design feature nightlight programmable programmable device sensor switch</p> <p>Materials for purpose</p> <p>conductive material non-conductive purpose</p> <p>Compare and contrast</p> <p>compare electrical product manual product purpose usability</p> <p>Use of ICT</p> <p>coding micro:bit program programming</p> <p>Electricity</p> <p>LED cell circuit coding complete circuit component electricity incomplete circuit lamp light-emitting diode micro:bit program programming push-to-break switch push-to-make switch reed switch rocker switch series circuit toggle switch wire</p>	<p>easier to use or more durable.</p> <p>specific knowledgeA switch makes or breaks a circuit. When a switch is closed or 'on', the circuit is complete. When a switch is open or 'off', the circuit is incomplete.</p> <p>specific knowledgeA programmable device is a machine that is able to be provided with coded instructions for the automatic performance of a task.</p> <p>specific knowledgeA nightlight is a small electric light that gives out a dim glow. Design features of nightlights include a switch, light source and an attractive casing.</p> <p>core knowledgeEvaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.</p> <p>core knowledgeComponents can be added to circuits to achieve a particular goal. These include bulbs for lighthouses and torches, buzzers for burglar alarms and electronic games, motors for fairground rides and motorised vehicles and switches for lights and televisions.</p> <p>core knowledgeRemote control is controlling a machine or activity from a distance. Computers can be used to remotely control a device, such as a light, speaker or buzzer.</p>	<p>Y4 skill 1 Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.</p> <p>Y4 skill 1 Incorporate circuits that use a variety of components into models or products.</p> <p>Y4 skill 1 Write a program to control a physical device, such as a light, speaker or buzzer.</p>
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Year 4
Tomb Builders

This project teaches children about simple machines, including wheels, axles, inclined planes, pulleys and levers, exploring how they helped ancient builders to lift and move heavy loads.

Key concepts:

Evaluation
Materials for purpose
Mechanisms & movement

3 Programmes of study, 3 skills and 7 knowledge statements

Y4 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.

Y4 Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

Y4 Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).

Evaluation

change
evaluate
evaluation
improve
Success

Generation of ideas

annotated sketch
labelled diagram
prototype

Everday products

compound machine
device
simple machine

Materials for purpose

characteristic
material
property
rigid
smooth
Strength

Mechanisms and movement

axle
compound machine
effort
first class
force
fulcrum
inclined plane
lever
load
pulley
screw
second class
simple machine
third class
wedge
wheel

core knowledge Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.

specific knowledge Characteristics of materials, such as rigidity, strength and smoothness will affect the success of a working model.

core knowledge Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.

core knowledge Mechanisms can be used to add functionality to a model. For example, sliders or levers can be used in moving pictures, storybooks or simple puppets; linkages in moving vehicles or puppets; gears in motorised vehicles or spinning toys; pulleys in cable cars or transport systems and cams in 3-D moving toys or pictures.

specific knowledge Simple machines make physical jobs easier by changing the strength or direction of a force. There are six simple machines: pulley; lever; wheel and axle; wedge; inclined plane; and screw. Simple machines can be combined to make complex, compound machines.

specific knowledge Simple machines make physical jobs easier by changing the strength or direction of a force.

specific knowledge Simple machines including pulleys, levers, wheels and axles and inclined planes can be combined to make a machine that can move heavy objects

Y4 skill 1 Choose from a range of materials, showing an understanding of their different characteristics.

Y4 skill 1 Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.

Y4 skill 3 Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products.