

Y4 Design and Technology

Design and Evaluate (DE)	Making (M)	Cookery and Nutrition (CN)
DE 1- I identify some of the great designers in all of the areas of study to generate ideas for designs.	M 1- Materials: I can measure and mark out to the nearest mm.	CN 1- I can prepare ingredients hygienically selecting and using appropriate utensils.
DE 2- I can disassemble products to understand how they work.	M 2- Materials I can apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs)	CN 2- I can measure ingredients to the nearest gram.
DE 3- I can collect information from a number of different sources and use this to inform design ideas in words, labelled sketches and models, keeping in mind fitness for purpose and the end user.	M 3- Textiles I can understand the need for a seam allowance	CN 3- I can assemble and cook ingredients.
DE 4- I can make realistic step by step plans, reflecting on designs as the product develops.	M 4- Electricals and Electronics I can build models incorporating motors within the circuits.	CN 4- <i>I can use a range of cooking techniques (controlling the temperature of the oven or hob, if cooking).</i>
DE 5- I can use ICT software to create alternatives for an initial design.	M 5- Construction I can join materials using suitable techniques (screwing)	CN 5- I can make healthy eating choices and explain why.
DE 6- I can explain how the product is useful to the user.	M 6- Mechanics I can use pulleys, levers and linkages in my products.	CN 6- <i>I can explain some of the processes that foods go through to preserve /make them more appealing.</i>
DE 7- I can refine work and techniques – evidencing and explaining the results of research as work progresses, continually evaluating the product design (use peer market research to evaluate and improve products at different stages of the design process)	M 7- Computing I can control and monitor models using software designed for this purpose.	

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
M4	DE1	CN1	M1	CN1	DE1
DE1	DE4	CN2	M5	CN2	DE6
DE2	DE7	CN3	M6	CN3	M1
DE3	M1	CN4	CN1	CN4	M2
DE6	M6	CN5	CN2	CN5	M3
CN1	CN1	CN6	CN3	CN6	M5
CN2	CN2		CN4		CN1
CN3	CN3		CN5		CN2
CN4	CN4		CN6		CN3
CN5	CN5				CN4
CN6	CN6				CN5
					CN6

Vocabulary

Designing, Evaluating, Making

Explore, object, product, construct, deconstruct, design, existing designs, identify, purpose, audience (intended user), draw, sketch, label, computer software, select, tools, junior hacksaw, clamp, screw, screwdriver, materials, wood, card, paper, fabric, running stitch, back stitch, needle, thread, cotton, wheels, axles, suggest, evaluate, clear purpose, discuss, share, improve, fit for purpose, justify choice, adapt, refine, measure, cm, mm, designers, circuits, buzzers, bulbs, wires, cells, batteries

Cooking and Nutrition

Hygiene, safe, balanced diet, protein, dairy, oils, fats, carbohydrates, fat, sugar, salt, recipe, measure, scales, grams (g), kilograms (kg), utensils, knife, teaspoon, tablespoon, *temperature, centigrade, preserve, dried, dehydrate, tinned, frozen, pickled*

I will know....

I will know....

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Designing and Evaluating. That products can have a design (planning stage) before they are made.

- That designs are based around the intended purpose of the object/product.
 - How to create a design for a product that has a clear purpose.
 - How to identify opportunities to develop designs.
 - How to justify my choices.
 - That there are a range of materials that can be used to create an object/product.
 - That there are a range of tools that can be used to create an object/product.
 - How to say which materials I select from a range and justify my choices.
 - How to say which tools I select from a range and justify my choices. • How to work efficiently and with precision by making the most appropriate selections of tools and materials at the beginning of the process (during the design stage).
 - That I can look at and discuss my own and others current designs with some criticality.
 - How to say/give my suggestions for improvements to my own and others current designs.
 - That refine means to change and improve my ideas and designs as work progresses.
 - That designs can change throughout the building process.
 - How to adapt my designs as I make.
 - That I can evaluate my work continuously throughout the process to say what I am happy with and what I may change if I were to make the product again.
 - How to evaluate my own product with support (peer/self).
- That designs, including the use of labels, can be made on a computer using software.
- That representations of the final product, including the use of labels, can be made on a computer using software.
 - The name of the software that I can use to design and represent a product.
 - How to design a product, including the use of labels, using computer software.
 - How to represent a product, including the use of labels, using computer software.

Cookery and Nutrition That ingredients can be prepared in different ways using different utensils including a knife, peeler, and grater.

- How to prepare ingredients using a knife, peeler, and grater.
- How to select the most appropriate tool to prepare ingredients for the meal that I am making.
- That grams are a unit of measurement.
- That I can measure or weigh ingredients to the nearest gram.
- That I can use electronic scales, or analogue scales to weigh my ingredients.
- How to weigh ingredients to the nearest gram using electronic scales or analogue scales accurately.
- That some food can be eaten raw (without cooking) and some food cannot.
- That food that is raw still needs to be prepared and served as a meal.
- That there are different pieces of equipment that I can use to cook food.
- The names of the equipment that I can use to cook food.
- How to use cooking equipment such as the microwave, hob, or oven.
- How to control the temperature of the hob/oven when being used.

Construction

- That there are a range of materials that I can use to construct products.
 - The names of the materials available to me.
 - That there are a range of tools that I can use to construct products. (screwdriver, screws)
 - The names of the tools available to me.
 - That there are a range of techniques that I can use to construct products.
- The names of the techniques that I may be able to use to construct.
- How to construct a product using various techniques.
 - That materials can be strengthened in different ways e.g. folding, adding tubing, struts, gluing to make a material thicker (cardboard).
 - How to strengthen the materials I am using.
- How to join products by screwing them together.

Electricals and electronics

- That a parallel circuit is one that has more than one resistor (light bulbs, buzzer etc), and more than one path (usually two) through which the electricity flows.
- That a circuit must be joined all the way round to work, a break in the circuit will stop the flow of electricity.
- The components that are needed to make a parallel circuit.
- How to build and test a parallel circuit.

Mechanics

- That forces can be transferred.
- The different forces that can be used (pushes/pulls).
- That there are different mechanisms that can be used to transfer force.
- The names of the mechanisms that can be used to transfer force (pulley, gear, lever, winding mechanism).
- How to select the most appropriate mechanism for the intended purpose of a product.
- How to make a product using my selected mechanism.

Computing

- That models can be controlled and monitored using computer software.
- The name of the software that I can use to control and monitor a model.
- How to use computer software to control and monitor a model.

Materials

- That a mm is a unit of measurement.
- That a mm can be measured using a ruler/tape measure.
- How to use a ruler/tape measure to measure to the nearest mm.
- That I can mark fabric to show where I want to cut.
- How to mark fabric.
- That materials can be cut and shaped in different ways by different tools.
- That the different tools for cutting and shaping give different finishes.
- How to use the tools to cut and shape material accurately.
- How to use the tools safely when cutting and shaping material.
- That cuts to create slots or cut-outs can be made within the perimeter of the material.
- How to cut to create slots or cut-outs within the perimeter of the material.

Textiles

- That a seam allowance is the area between the edge of the fabric and the stitching line when joining two pieces of material together.
- That when sewing a product that requires a seam, the seam allowance needs to be considered so that there is extra material that can be used to join the materials together.
- That without taking into consideration a seam allowance, the material that you cut to make a product may be too small.