

End Points

KSI

Design

Design purposeful, functional, appealing products for themselves and other users based on design criteria

- use their knowledge of existing products and their own experience to help generate their ideas

Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

- design products that have a purpose and are aimed at an intended user
- understand and follow simple design criteria
- explain how their products will look and work through talking and simple annotated drawings
- plan and test ideas using templates and mock-ups

Make

Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

- -begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer
- learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures
- cut, shape and score materials with some accuracy
- use a basic running stitch
- demonstrate how to cut, shape and join fabric to make a simple product

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

- assemble, join and combine materials, components or ingredients
- select from a range of materials, textiles and components according to their characteristics
- use a range of materials and components, including textiles and food ingredients
- with support, follow a simple plan or recipe
- work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.
- begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer
- cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups
- learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures
- manipulate fabrics in simple ways to create the desired effect;
- select from a range of materials, textiles and components according to their characteristics

Evaluate

Explore and evaluate a range of existing products

- explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations
- explain positives and things to improve for existing products
- explore what materials products are made from

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

Evaluate their ideas and products against design criteria

- talk about their design ideas and what they are making
- as they work, start to identify strengths and possible changes they might make to refine their existing design
- evaluate their products and ideas against their simple design criteria
- start to understand that the iterative process sometimes involves repeating different stages of the process

Technical knowledge

Build structures, exploring how they can be made stronger, stiffer and more stable

- build simple structures, exploring how they can be made stronger, stiffer and more stable;
- talk about and start to understand the simple working characteristics of materials and components

Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

- explore and create products using mechanisms, such as levers, sliders and wheels

KS2

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

- develop and follow simple design criteria (3 and 4)
- identify the design features of their products that will appeal to intended customers;
- use their knowledge of a broad range of existing products to help generate their ideas;
- design innovative and appealing products that have a clear purpose and are aimed at a specific user;
- identify the design features of their products that will appeal to intended customers;
- use their knowledge of a broad range of existing products to help generate their ideas;
- use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market
- design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user
- independently plan by suggesting what to do next;
- generate a range of design ideas and clearly communicate final designs
- create step-by-step plans as a guide to making;

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

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

- use annotated sketches and cross-sectional drawings to develop and communicate their ideas (3 and 4)
- design innovative and appealing products that have a clear purpose and are aimed at a specific user
- when designing, explore different initial ideas before coming up with a final design; (3 and 4)
- when planning, start to explain their choice of materials and components including function and aesthetics;
- test ideas out through using prototypes; (3 and 4)
- use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas

Make

Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately

- learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; (3, 4, 5)
- with growing confidence, carefully select from a range of tools and equipment, explaining their choices (3, 4, 5 and 6)
- join textiles with an appropriate sewing technique; (3 and 4)
- understand that materials have both functional properties and aesthetic qualities; (3 and 5)
- cut, shape and score materials with some degree of accuracy; (3 and 4)
- identify the design features of their products that will appeal to intended customers;
- assemble, join and combine material and components with some degree of accuracy (3 and 4)

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

- assemble, join and combine materials and components with accuracy
- cut a range of materials with precision and accuracy;
- shape and score materials with precision and accuracy;
- independently take exact measurements and mark out, to within 1 millimetre;
- use a full range of materials and components, including construction materials and kits, textiles, and mechanical components;
- cut a range of materials with precision and accuracy;
- learn to use a range of tools and equipment safely and appropriately and learn to follow procedures;
- join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch;
- demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product;

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

- select from a range of materials and components according to their functional properties and aesthetic qualities; (3, 4, 5 and 6)
- use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components (3 and 4)
- begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics (3 and 4)

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

- use a full range of materials and components, including construction materials and kits, textiles, and mechanical components;

Evaluate

Investigate and analyse a range of existing products

- explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; (3 and 4)
- complete detailed competitor analysis of other products on the market;

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

- evaluate their product against their original design criteria; (3 and 4)
- consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product; (3 and 4)
- explore what materials/ingredients products are made from and suggest reasons for this;(3 and 4)
- evaluate their ideas and products against the original design criteria, making changes as needed (5 & 6)
- critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make; (5 & 6)

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

Understand how key events and individuals in design and technology have helped shape the world

- evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world (3 and 4)

Technical knowledge

Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products
- understand that materials have both functional properties and aesthetic qualities
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products
- explain how particular parts of their products work

Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

- Explain how mechanical systems such as levers and linkages create movement
- use mechanical systems in their products.
- explain how mechanical systems, such as cams, create movement and use mechanical systems in their products

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

- understand and demonstrate how mechanical and electrical systems have an input and output process;
- make and represent simple electrical circuits, such as a series and parallel, and components to create functional products;
- understand and demonstrate that mechanical and electrical systems have an input, process and output

Apply their understanding of computing to program, monitor and control their products.

- apply their understanding of computing to program, monitor and control a product

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

Cooking and nutrition

Key stage 1

Use the basic principles of a healthy and varied diet to prepare dishes

- name and sort foods into the five groups in the Eatwell Guide
- -understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why
- -use what they know about the Eatwell Guide to design and prepare dishes

Understand where food comes from.

- explain where in the world different foods originate from

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

Key stage 2

Understand and apply the principles of a healthy and varied diet

- explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes;
- understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body;
- explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes; (5 & 6)

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

- understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically (3 and 4)
- with support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven;
- use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking; (3 and 4)
- measure and weigh ingredients to the nearest gram and millilitre (3 and 4)
- start to independently follow a recipe; (3 and 4)
- prepare ingredients using appropriate cooking utensils;
- demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source; (5 & 6)
- demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling (5 & 6)
- measure accurately and calculate ratios of ingredients to scale up or down from a recipe (5 & 6)
- alter methods, cooking times and/or temperatures;

Year 1 only, Year 2 only, Year 1 and 2, Year 3, Year 4, Year 5 and Year 6

- adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma;
- learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures
- independently follow a recipe.

Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

- start to understand seasonality.
- start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world;
- know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world; (5 & 6)
- understand about seasonality, how this may affect the food availability and plan recipes according to seasonality; (5 & 6)
- understand that food is processed into ingredients that can be eaten or used in cooking;