| | Skills | | | | |
|---------------------|---|---|--|---|--|
| | Year 3 | Year 4 | Year 5 | Year 6 | |
| | Create a design which meets a range | Generate more than one idea for how to create a product. Gather info to help | Generate a range of ideas after collating relevant information (user views). | Use a range of info to inform a design (market research using surveys, | |
| | of requirements. | design a successful product (by asking other views). | Produce a detailed plan with step-by- | interviews or web based resources) | |
| Generating Ideas | Consider the tools and equipment needed when planning. | Produce a detailed plan with labelled diagrams, a written | step instructions, cross sectional diagrams and prototypes. | Produce a detailed plan with cross sectional diagrams and computer-generated | |
| | Describe a design using an accurately labelled diagram and | explanation and step-by -step guide. | Suggest alternative plans, considering the positive aspects | designs. Work within constraints, refining | |
| | in words. | Suggest improvements to develop and refine a plan. | and drawbacks of each. | and justifying plans as necessary. | |
| | Use a range of tools and equipment accurately. | Use a range of tools and equipment with accuracy. | Use a range of tools and equipment expertly. | Use a range of tools and equipment precisely. | |
| Making | Measure, mark out, assemble and join materials and components with some accuracy. | Measure, mark out, assemble and join materials and components with accuracy. | Consider the aesthetic qualities and functionality of my work when making. | Consider the aesthetic qualities and functionality of my product when making it, refining details as necessary. | |

| Evaluation | Evaluate own and pre-existing products. Suggest what could be changed to improve a design, beginning to link this to the brief. | Evaluate the appearance and usability of own and pre-existing products. Explain how the original design could be improved, considering the appearance and usability and linking this to the brief. | Evaluate the appearance and function of a product (own and preexisting) against the original criteria, saying whether it is fit for purpose. Suggest improvements that could be made, considering materials and methods that have been used. | Evaluate the appearance and test the functionality of a product (own or preexisting) against the original criteria, saying whether it is fit for purpose. Suggest improvements that could be made, considering materials, methods and sustainability of the product and how much a product costs to make. |
|-----------------------|--|---|---|--|
| Food and Nutrition | Know how to peel, cut, grate, mix and mould foods and begin to cook foods (using toasters and microwaves with supervision) | Know how to peel, cut, grate, mix and mould foods and begin to cook foods (using toasters and microwaves with supervision | Cut, mix, mould and begin to use hobs to heat food with appropriate supervision. | Cut, mix, mould and to use hobs to heat food, developing independence with this as appropriate. |
| Construction | Use sheet materials and construction tools with appropriate supervision | Use sheet materials and construction tools with appropriate supervision | Use sheet and construction materials appropriately. | Use sheet and construction materials appropriately |
| Textiles | | Cut then join textiles using a running stitch, over sewing, back stitch or fastenings. Understand seam allowances, create | Pin and tack fabrics, use patterns and seam allowances and join fabrics to make quality products. | |

| | | simple patterns and appropriate decoration techniques (e.g. applique) | | |
|------------|--|--|---|---|
| Mechanisms | Know about movement of simple mechanisms such as levers and linkages. | | | Understand how mechanical systems such as cams, pulleys or gears create movement. |
| Vocabulary | Design decisions, functionality, design specification. Food Arrange, crack, hot, spicy, greasy, moist, edible, grown, reared, caught, harvested, healthy/varied diet, Textiles Seam, pins, needles, thread fastenings. Structures Shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, | Food sensory evaluations, processed, seasonal, bridge, claw Electrical Systems Circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, design criteria, annotate, design decisions, functionality. Mechanical Systems Lever, linkage, pivot, slot, bridge, guide, system, input, process, output, linear, rotary, | Food • kilojoules (metric), kilocalories (imperial), energy, portions, culture. Mechanical Systems • Pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, crumble, programme, debug, algorithm. Textiles • Seam allowance, reinforce, hem, name of textiles and fastenings used. | Food Unit of measurement, Ingredients, processed, flavour, recipe, nationality, method, cross-contamination Mechanical Systems Accurate, assembly-diagram, exploded diagram, bench, axle, function, model, mechanism Textiles Accurate, adapt, annotate, design, detail, fabric, template, |

| adhesives, joining, | oscillating, | customer, |
|---------------------------------------|----------------|--------------------|
| assemble, accuracy, | reciprocating. | audience |
| material, stiff, | | |
| strong, reduce, | | Electrical Systems |
| _ | | |
| reuse, recycle, | | • Assemble, |
| corrugating, ribbing, | | battery, |
| laminating, font, | | battery pack, |
| lettering, text. | | bulb, bulb |
| | | holder, buzzer, |
| | | component, |
| Names of fabrics, | | prototype |
| fastening, | | p. 2.23, p. 2 |
| compartment, zip, | | Structures |
| button, structure, | | • Adapt, |
| finishing technique, | | |
| | | structure, |
| strength, weakness, | | apparatus, |
| stiffening, stitch, | | evaluation, |
| seam. | | feedback, |
| | | tenon saw, |
| | | coping saw, |
| | | vice, weak, |

| Knowledge | | | | |
|---|---|--|--------|--|
| Year 3 | Year 4 | Year 5 | Year 6 | |
| Design | Design | Design | | |
| Use research and | Use research and | Use research and | | |
| develop design criteria to | develop design criteria to | develop design criteria to | | |
| nform the design of innovative, | inform the design of innovative, | inform the design of innovative, | | |
| functional, appealing products | functional, appealing products | functional, appealing products | | |
| hat are fit for purpose, aimed | that are fit for purpose, aimed | that are fit for purpose, aimed | | |
| at particular individuals or | at particular individuals or | at particular individuals or | | |
| groups. | groups. | groups. | | |
| Generate, develop, | Generate, develop, | Generate, develop, | | |
| model and communicate their | model and communicate their | model and communicate their | | |
| deas through discussion, | ideas through discussion, | ideas through discussion, | | |
| annotated sketches, cross- | annotated sketches, cross- | annotated sketches, cross- | | |
| sectional and exploded sectional and exploded | | sectional and exploded | | |
| diagrams, prototypes, pattern | diagrams, prototypes, pattern | diagrams, prototypes, pattern | | |
| pieces and computer-aided | pieces and computer-aided | pieces and computer-aided | | |
| design. | design. | design. | | |
| | | Make | | |
| V lake | Make | Select from and use a | | |
| Select from and use a | Select from and use a | wider range of tools and | | |
| wider range of tools and | wider range of tools and | equipment to perform practical | | |
| equipment to perform practical | equipment to perform practical | tasks [for example, cutting, | | |
| asks [for example, cutting, | tasks [for example, cutting, | shaping, joining and finishing], | | |
| shaping, joining and finishing], | shaping, joining and finishing], | accurately. | | |
| accurately. | accurately. | Select from and use a | | |
| Select from and use a | Select from and use a | wider range of materials and | | |
| vider range of materials and | wider range of materials and | components, including | | |
| components, including | components, including | construction materials, textiles | | |
| construction materials, textiles | construction materials, textiles | and ingredients, according to | | |
| and ingredients, according to | and ingredients, according to | their functional properties and | | |
| their functional properties and | their functional properties and | aesthetic qualities. | | |

Evaluate

aesthetic qualities.

aesthetic qualities.

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

Technical knowledge

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

Textiles

- Materials have functional and aesthetic qualities.
- That a single fabric shape can make a 3D textiles product.

Structures

- Inventors who have developed ground-breaking products.
- how to make strong, stiff shell structures.

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

Technical knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].
- Apply their understanding of computing to program, monitor and control their products.

Electrical Systems

- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

Technical knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- Apply their understanding of computing to program, monitor and control their products.

Mechanical Systems

- How mechanical systems such as cams, pulleys or gears create movement.
- How to use a computer to program, monitor and control their products.

- Understand and apply the principles of a healthy and varied diet.
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality, and know where and how a variety of ingredients are grown caught.
- Food products can be fresh, pre-cooked and processed.
- Food is grown, reared and caught in the UK and in the wider world.
- A healthy diet is made up from a variety and balance of different food and drink.
- I know that what people around the world eat depends on reasons such as availability, preference, resources, time, culture and religion.
- which part of a plant different foods come from

- Engineers who have developed ground-breaking products.
- How simple electrical circuits can make functional products
- how simple electrical circuits can make functional products

Mechanical Systems

 How mechanical systems such as levers and linkages or pneumatic systems create movement.

Food

- Understand and apply the principles of a healthy and varied diet.
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Textiles

- That a 3D textiles product can be made from a combination of fabric shapes.
- How well products meet user needs and wants how much products cost to make.

Food

- Understand and apply the principles of a healthy and varied diet.
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
- That a recipe can be adapted by adding and substituting one or more ingredients.
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
- Food (and some drinks) provide energy for the body so

| | we can be active and stay | |
|--|---------------------------|--|
| | healthy. | |