



TEXTILES

KS1 (Year 1/2)

- Shape textiles using templates.
- Join textiles using running stitch.
- Colour and decorate textiles using a number of techniques.
- Cut materials safely using tools provided.
- Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).
- Measure and mark out to nearest cm.
- Demonstrate a range of joining techniques (such as gluing, hinges or combining)

LKS2 (textiles Y3 Autumn 2- Spring 1)

Golden Thread throughout

Designing

- Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.
- Produce annotated sketches, prototypes, final product sketches and pattern pieces.

Making

- Plan the main stages of making.
- Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.
- Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.

Evaluating

- Investigate a range of 3-D textile products relevant to the project.
- Test their product against the original design criteria and with the intended user.
- Take into account others' views.
- Understand how a key event/individual has influenced the development of the chosen product and/or fabric.



TEXTILES

LKS2

(textiles Y3
Autumn 2-
Spring 1)

Technical knowledge and understanding

- Know how to strengthen, stiffen and reinforce existing fabrics.
- Understand how to securely join two pieces of fabric together.
- Understand the need for patterns and seam allowances.
- Know and use technical vocabulary relevant to the project.

Specific vocabulary

- *Stitching technique* • *finishing technique* • *suitable* • *zip* • *strength* • *weakness* • *annotating* • *compartment* • *annotated sketch*
- *fastening*

Overview of learning

Investigative and Evaluative Activities:

Children will investigate a range of textile products that have a range of stitches, joins, fabrics, finishing techniques, fastening and purposes, linked to the product they will design, make and evaluate. Think about products from the past and how these have changed, e.g. the invention of Zips and Velcro. Children will disassemble appropriate textile products to gain an understanding of 3-D shape, patterns and seam allowances.

Focused Tasks:

Children will demonstrate a range of stitching techniques and practise sewing two small pieces of fabric together, demonstrating the use of, and need for, seam allowances. They will use a textile product they have taken apart to create a paper pattern using 2-D shapes. A range of fabrics will be provided for children to consider whether fabrics are suitable for the chosen purpose and user. The children will use the fabrics for demonstrating and testing out a range of decorative finishing techniques e.g. appliqué, embroidery, fabric pens/paints, printing.

Design, Make and Evaluate Assignment:

Children will create a design brief, supported by the teacher, set within a context which is authentic and meaningful. Children will discuss the intended user, purpose and appeal of their product and create a set of design criteria. Children will sketch and annotate a range of possible ideas and produce mock-ups and prototypes of their chosen product. Plan the main stages of making e.g. using a flowchart or storyboard. Children will assemble their product using their existing knowledge and skills. They will evaluate as the process is undertaken and the final product in relation to the design brief and criteria.



TEXTILES

UKS2

(textiles Y5
Summer 1 -
Summer 2)

Golden Thread throughout***Designing***

- Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.
- Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.
- Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.

Making

- Produce detailed lists of equipment and fabrics relevant to their tasks.
- Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
- Select from and use a range of tools and equipment to make products that are accurately assembled and well finished.
Work within the constraints of time, resources and cost..

Evaluating

- Investigate and analyse textile products linked to their final product.
- Compare the final product to the original design specification.
- Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
- Consider the views of others to improve their work.



TEXTILES

UKS2

(textiles Y5
Summer 1 -
Summer 2)

Technical knowledge and understanding

- A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.
- Fabrics can be strengthened, stiffened and reinforced where appropriate

Specific vocabulary

• *Seam allowance* • *wadding* • *right side* • *wrong side* • *hem* • *design decisions* • *functionality* • *mock-up* • *insulating*

Overview of learning

Investigative and Evaluative Activities: Children will investigate, analyse and evaluate a range of existing products which have been produced by combining fabric shapes. They will investigate work by designers and their impact on fabrics and products. Use questions to develop children's understanding thinking about the user and purpose of the product, what design decisions have been made, what components have been used to match the appearance, to what extent is the design innovative and if the product is functional or decorative. Children will investigate and analyse how existing products have been constructed. Children will disassemble a product and evaluate what the fabric shapes look like, how the parts have been joined, how the product has been strengthened and stiffened, what fastenings have been used and why. Children will investigate properties of textiles through investigation e.g. exploring insulating properties, water resistance, wear and strength of textiles.

Focused Tasks: Children will develop skills of threading needles and joining textiles using a range of stitches. This activity must build upon children's earlier experiences of stitches e.g. improving appearance and consistency of stitches and introducing new stitches. If available, demonstrate and allow children to use sewing machines to join fabric with close adult supervision. Children will develop skills of sewing textiles by joining right side together and making seams. Children should investigate how to sew and shape curved edges by snipping seams, how to tack or attach wadding or stiffening and learn how to start and finish off a row of stitches. Develop skills of 2-D paper pattern making using grid or tracing paper to create a 3-D dipryl mock-up of a chosen product. Remind/teach children how to pin a pattern on to fabric ensuring limited wastage, how to leave a seam allowance and different cutting techniques. Develop skills of computer-aided.

Design, Make and Evaluate Assignment: Children will set an authentic and meaningful design brief. They will generate ideas by carrying out research using e.g. surveys, interviews, questionnaires and the web. Children will develop a simple design specification for their product and communicate ideas through detailed, annotated drawings from different perspectives and/or computer aided design; these drawings will indicate design decisions made, the methods of strengthening, the type of fabrics to be used and the types of stitching that will be incorporated. Children will produce step-by-step plans, lists of tools equipment, fabrics and components needed and learn how to allocate tasks within a team if appropriate. Children will make high quality products applying knowledge, understanding and skills learnt previously. They will incorporate simple computer-aided manufacture (CAM) if appropriate e.g. printing on fabric. Children will use a range of decorating techniques to ensure a well-finished final product that matches the intended user and purpose. They will evaluate both as the children proceed with their work and the final product in use, comparing the final product to the original design specification. Children will critically evaluate the quality of the design, the manufacture, functionality, innovation shown and fitness for intended user and purpose, considering others' opinions. They will communicate their evaluation in various forms e.g. writing for a particular purpose, giving a well-structured oral evaluation, speaking clearly and fluently.



MECHANICAL SYSTEMS

KS1 (Year 1/2)

- Create products using levers and wheels.
- Create products using winding mechanisms.
- Mechanisms split pins
- Mechanics: Create products using winding mechanisms.

LKS2 (mechanical systems Y3 Summer 1 – Summer 2)

Golden Thread throughout

Designing

- Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.
- Use annotated sketches and prototypes to develop, model and communicate ideas.

Making

- Order the main stages of making.
- Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Select from and use finishing techniques suitable for the product they are creating

Evaluating

- Investigate and analyse books and, where available, other products with lever and linkage mechanisms.
- Evaluate their own products and ideas against criteria and user needs, as they design and make



MECHANICAL SYSTEMS

LKS2

(mechanical systems Y3 Summer 1 – Summer 2)

Technical knowledge and understanding

- Understand and use lever and linkage mechanisms.
- Distinguish between fixed and loose pivots.
- Know and use technical vocabulary relevant to the project..

Specific vocabulary

Mechanism - a device used to create movement.

Lever - a rigid bar that moves around a pivot.

Linkage - the card strips joining levers to produce a movement type.

Slot - the hole through which a lever is placed to enable part of a picture to move.

Guide/bridge - a short card strip used to keep the lever and linkage mechanisms in place and controlled.

Loose pivot - a paper fastener that joins card strips together.

Fixed pivot - a paper fastener that joins card strips to the backing card.

System - a set of parts or components used to create an outcome.

Overview of learning

Investigative and Evaluative Activities:

Children will investigate, analyse and evaluate books and, where available, other products which have a range of lever and linkage mechanisms. Children will learn which parts move, how they move, how mechanisms work and what materials have been used. They will think about the purpose and user of the product.

Focused Tasks:

Children will investigate a range of lever and linkage mechanisms using prepared teaching aids. They will learn how to correctly and accurately use measuring, marking out, cutting, joining and finishing skills and techniques. Children will develop their knowledge and skills by replicating one or more of the teaching aids.

Design, Make and Evaluate Assignment:

The children will take part in a discussion to decide the purpose of the products that they will be designing, making and evaluating and who the products are for, generating a range of ideas and creative responses. They will develop and agree design criteria to give the product an authentic and meaningful context and that are useful for guiding the development and evaluation processes. The children will use annotated sketches and prototypes to develop, model and communicate their ideas. They will evaluate the final products against the intended purposes and with the intended user in mind, using the agreed design criteria.



MECHANICAL SYSTEMS

UKS2

(mechanical systems Y5 Autumn 2 - Spring 1)

Golden Thread throughout

Designing

- Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide their thinking.
- Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.

Making

- Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
- Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

Evaluating

- Compare the final product to the original design specification.
- Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
- Consider the views of others to improve their work.
- Investigate famous manufacturing and engineering companies relevant to the project



MECHANICAL SYSTEMS

UKS2

(mechanical systems Y5 Autumn 2 - Spring 1)

Technical knowledge and understanding

- Understand that mechanical systems have an input, process and an output.
- Understand how cams can be used to produce different types of movement and change the direction of movement.
- Know and use technical vocabulary relevant to the project.

Specific vocabulary

• CAM • follower • shaft • crank • design specification • input movement • exploded diagrams • oscillating motion

Overview of learning

Investigative and Evaluative Activities: Children will discuss different types of movement: rotary, oscillating and reciprocating. They will make simple models of different types of cams or have toys in which the cam mechanisms can be seen. Videos, photographs and computer animations of products will be if they cannot be explored through first-hand experience. The children will be encouraged to look for different types of movement in the home and in school. Using observational drawings and questions the children will develop an understanding of the products in the handling collection and those that they have researched. Children could research and, if possible, visit engineering and manufacturing companies that are relevant to the product they are designing and making.

Focused Tasks: Children will be given pre-cut cams made from MDF or wooden wheels to mount on a piece of board and observe their movement with a follower. They will learn how to use a hand drill safely to make an off-centre cam and position it accurately in a housing. The wheel will be securely fastened with a G-clamp and a piece of scrap wood used under the wheel to avoid drilling through the bench hook or table. The importance of measuring accurately and checking before cutting any holes or gluing will be stressed, as will the importance of lining up the cam and follower otherwise the mechanism may not work smoothly. Children will develop measuring, marking, cutting, shaping and joining skills using junior hacksaws, G-clamps, bench hooks, square section wood, card triangles and hand drills to make cam mechanisms and construct wooden frames or card housings, as appropriate. The accurate and safe use of tools and equipment will be demonstrated and reinforced throughout.

Design, Make and Evaluate Assignment: Children will be supported to develop an authentic and meaningful design brief. Children will generate innovative ideas by carrying out research including surveys, interviews and questionnaires and develop a design specification for their product, carefully considering the purpose and intended user for their product. Children will communicate ideas through detailed, annotated sketches from different views and/or exploded diagrams. The drawings should indicate the design decisions made, including the location of the components, how they work as a system and the appearance and finishing techniques for the product. Children will produce detailed step-by-step plans and lists of tools, equipment and materials needed. If appropriate, allocate tasks within a team. Children will make high quality products, applying knowledge, understanding and skills previously learnt. Children will use a range of decorative finishing techniques to ensure a well finished final product that matches the intended user and purpose. Children will evaluate throughout and the final product in use, comparing it to the original design specification. Children should critically evaluate the quality of the design, the manufacture, functionality, innovation shown and fitness for the intended user and purpose.



ELECTRICAL SYSTEMS

KS1
(Year 1/2)

N/A

LKS2

(Electrical
systems Y4
Autumn 1 –
Autumn 2)

Golden Thread throughout

Designing

- Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.

Making

- Order the main stages of making.
- Select from and use tools and equipment to cut, shape, join and finish with some accuracy.
- Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities

Evaluating

- Investigate and analyse a range of existing battery-powered products.
- Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work



ELECTRICAL SYSTEMS

LKS2

(Electrical systems Y4 Autumn 1 – Autumn 2)

Technical knowledge and understanding

- Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.
- Apply their understanding of computing to program and control their products.
- Know and use technical vocabulary relevant to the project.

Specific vocabulary

• *Switches • push-to-make • push-to-break • toggle • program • control • input device • output device • appealing • series circuit*

Overview of learning

Investigative and Evaluative Activities: Children will discuss, investigate and disassemble different examples of battery-powered products, thinking about how the product works, where and why it is used, which materials have been used and why and how it is suited to its intended user and purpose. Children will investigate examples of switches, including those which are commercially available, which work in different ways e.g. push-to-make, push-to-break, toggle switch; and be reminded about the dangers of mains electricity.

Focused Tasks: Children will revise how to make manually controlled, simple series circuits with batteries and different types of switches, bulbs and buzzers, learning which of the components in the circuit are input devices e.g. switches, and which are output devices e.g. bulbs and buzzers. They will be shown how to find a fault in a simple circuit and correct it, with opportunities to practise. The children will make a variety of switches by using simple classroom materials e.g. card, corrugated plastic, aluminium foil, paper fasteners and paper clips; making switches that operate in different ways e.g. when you press them, when you turn them, when you push them from side to side. They will test their switches in a simple series circuit, learning through demonstration how to avoid making short circuits.

Design, Make and Evaluate Assignment: The children will develop a design brief within a context which is authentic and meaningful. They will discuss the purpose of the battery-powered products that they will be designing and making and who they will be for. Children will generate a range of ideas, encouraging realistic responses and agree on a design-criteria that can be used to guide the development and evaluation of their products, including safety features. The children will develop, model and communicate their ideas using annotated sketches, cross sectional and exploded diagrams as appropriate. The children should consider the main stages in making and testing before assembling high quality products, drawing on knowledge, understanding and skills previously learnt. The children will evaluate their work throughout the process and the final products will be evaluated against the intended purpose and with the intended user in mind, drawing on the design criteria previously agreed.



ELECTRICAL SYSTEMS

UKS2

(Electrical systems Y6
Spring 2 –
Summer 1)

Golden Thread throughout

Designing

- Develop a design specification for a functional product that responds automatically to changes in the environment.
- Generate, develop and communicate ideas through discussion, annotated sketches and pictorial representations of electrical circuits or circuit diagrams.

Making

- Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.
- Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.
- Create and modify a computer control program to enable their electrical product to respond to changes in the environment.

Evaluating

- Continually evaluate and modify the working features of the product to match the initial design specification.
- Test the system to demonstrate its effectiveness for the intended user and purpose



ELECTRICAL SYSTEMS

UKS2

(Electrical systems Y6 Spring 2 – Summer 1)

Technical knowledge and understanding

- Understand and use electrical systems in their products.
- Understand the use of computer control systems in products.
- Apply their understanding of computing to program, monitor and control their products.
- Know and use technical vocabulary relevant to the project.

Specific vocabulary

• *Tilt switch* • *reed switch* • *control* • *LDR - light dependent resistor* • *parallel circuit*

Overview of learning

Investigative and Evaluative Activities: Children will discuss a range of relevant products (such as nightlights, garden lights, alarm systems, security lighting, electronic moneyboxes) that respond to changes in the environment using a computer control program. Children will investigate sensors such as light dependent resistors (LDRs) and a range of switches such as push-to-make, push-to-break, toggle, micro and reed switches. The children will use each component to control a bulb in a simple circuit to gain an understanding of how they are operated by the user and how they work. The children will be reminded about the dangers of mains electricity.

Focused Tasks: The children will recap the measuring, marking out, cutting and joining skills that they will need to create their electrical products. They will use a model circuit to study and practise using different input and output devices. Children will learn and practise how to make secure electrical connections using wire strippers, twist and tape connections, screw connections, crocodile clips and connecting blocks. The children will be reminded how to avoid making short circuits. The children will use their scientific understanding to explore a range of electrical systems that could be used to control their products, including a simple series circuit where a single output device is controlled, a series circuit where two output devices are controlled by one switch and, where appropriate, parallel circuits where two output devices are controlled independently by two separate switches. Drawing on related computing activities, the children will write and modify computer control programs that include inputs, outputs and decision making, testing out the programs using electrical components connected to microcontrollers, interface boxes or standalone boxes.

Design, Make and Evaluate Assignment: The children will be supported to develop an authentic and meaningful design brief. Children will generate innovative ideas by drawing on research and develop a design specification for their product, carefully considering the purpose and needs of the intended user. They will communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams, including the microcontroller, interface box or standalone box to be used. Using drawings, they will indicate the design decisions made, including the location of the electrical components and how they work as a system with an input, process and output, making reference to the control program used and how it will operate to control the inputs and outputs. Children will produce detailed step-by-step plans and lists of tools, equipment and materials needed. If appropriate, allocate tasks within a team. Children will make high quality products, applying knowledge, understanding and skills previously learnt. They will create and modify a computer control program to enable the product to work automatically in response to changes in the environment. Children will critically evaluate throughout and the final product, comparing it to the original design specification. They will test the system to demonstrate its effectiveness for the intended user and purpose



STRUCTURES (SHELL AND FRAME)

KS1
(Year 1/2)

Construction:

- Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.
- Model designs using software

LKS2

(Shell
structures
CAD Y4
Spring 2 –
Summer 1)

Golden Thread throughout

Designing

- Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product.
- Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.

Making

- Order the main stages of making.
- Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy.
- Explain their choice of materials according to functional properties and aesthetic qualities.
- Use finishing techniques suitable for the product they are creating

Evaluating

- Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used.
- Test and evaluate their own products against design criteria and the intended user and purpose



STRUCTURES (SHELL AND FRAME)

LKS2

(Shell structures
CAD Y4
Spring 2 –
Summer 1)

Technical knowledge and understanding

- Develop and use knowledge of how to construct strong, stiff shell structures.
- Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.
- Know and use technical vocabulary relevant to the project.

Specific vocabulary

• *Net • construct • stiffened • shell structure • mark out • score • tabs • corrugate • laminate • three-dimensional*

Overview of learning

Investigative and Evaluative Activities: Children will investigate a collection of different shell structures including packaging. Children should think about the purpose of the shell structure, what material it is made from, how it has been stiffened i.e. folded, corrugated, ribbed and laminated. They should discuss the size, shape and colour, what information it shows and how attractive the design is. Children will take a small package apart identifying and discussing parts of a net including the tabs. Children will evaluate existing products to determine which designs children think are the most effective. Provide opportunities for the children to judge the suitability of the shell structures for their intended users and purposes.

Focused Tasks: Children will use kit parts with flat faces to construct nets. Practise making nets out of card, joining flat faces with masking tape to create 3-D shapes. Experiment with assembling in nets in numerous ways. Demonstrate skills and techniques of scoring, cutting out and assembling using pre-drawn nets. Then allow children to practise by constructing a simple box. Show how a window could be cut out and acetate sheet added. Demonstrate how to use different ways of stiffening and strengthening their shell structures e.g. folding and shaping, corrugating, ribbing, laminating. Provide opportunities for the children to practise these and to carry out tests to find out where their structures might need to be strengthened or stiffened. Children will discuss and explore the graphics techniques and media that could be used to achieve the desired appearance of their products. Practise using computer-aided design (CAD) software to design the net, text and graphics for their products according to purposes.

Design, Make and Evaluate Assignment: The children will develop a design brief within a context which is authentic and meaningful. They will discuss the purpose of their shell structures, thinking about what the product needs to do, who it's aimed at and how the purpose and user affect their design decisions. Children will generate a range of ideas, encouraging realistic responses and agree on a design criteria that can be used to guide the development and evaluation of their products. Children will use annotated sketches and prototypes to develop, model and communicate their ideas for the product. Children will identify the main stages of making and the appropriate tools and skills taught through focused tasks. The children will be encouraged to work with accuracy. Children will evaluate throughout and the final products will be judged against the intended purpose and with the intended user, drawing on the design criteria previously agreed.



STRUCTURES (SHELL AND FRAME)

UKS2

(Frame structures
Y6 Autumn 1
– Autumn 2)

Golden Thread throughout

Designing

- Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.
- Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. .

Making

- Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.
- Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.
- Use finishing and decorative techniques suitable for the product they are designing and making.

Evaluating

- Investigate and evaluate a range of existing frame structures.
- Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
- Research key events and individuals relevant to frame structures.



STRUCTURES (SHELL AND FRAME)

UKS2

(Frame structures
Y6 Autumn 1
– Autumn 2)

Technical knowledge and understanding

- Understand how to strengthen, stiffen and reinforce 3-D frameworks.
- Know and use technical vocabulary relevant to the project.

Specific vocabulary

• Reinforce • triangulation • construction • design brief • research • stability • temporary • permanent

Overview of learning

Investigative and Evaluative Activities: Children will investigate and make annotated drawings of a range of portable and permanent frame structures, e.g. tents, bus shelters, umbrellas. Use photographs and web-based research to extend the range. They will think about how well the frame structure meet users' needs and purposes, why materials have been chosen, what methods of construction have been used and how the framework has been strengthened. Children could research key events and individuals related to their study of frame structures e.g. Stephen Sauvestre – a designer of the Eiffel Tower; Thomas Farnolls Pritchard – designer of the Iron Bridge. They could also learn about locally important design and technology activity related to their project.

Focused Tasks: Children will use a construction kit consisting of plastic strips and paper fasteners to build 2-D frameworks. Compare the strength of square frameworks with triangular frameworks. Ask the children to reinforce square frameworks using diagonals to help develop an understanding of using triangulation to add strength to a structure. Demonstrate how paper tubes can be made from rolling sheets of newspaper diagonally around pieces of e.g. dowel. Ask children to use these tubes and masking tape or paper straws with pipe cleaners to build 3-D frameworks such as cubes, cuboids and pyramids. Show children how to accurately use of tools and equipment. Develop skills and techniques using junior hacksaws, G-clamps, bench hooks, square section wood, card triangles and hand drills to construct wooden frames, as appropriate. Demonstrate skills and techniques for accurately joining framework materials together e.g. paper straws, square sectioned wood. Ask children to practise these, mounting their joints onto card for future reference.

Design, Make and Evaluate Assignment: Children will discuss the brief of designing and making a small-scale frame structure thinking about the purpose and intended user. Children should be encouraged to generate innovative ideas, drawing on their research. Ask children to develop a simple design specification to guide their thinking. Children should produce a detailed, step-by-step plan, listing tools and materials. Children's sketches should be annotated with notes to help develop and communicate their ideas. Encourage children to model their ideas first using materials such as paper, card and paper straws. Encourage children to make their products with accuracy. They should regularly evaluate their work and their completed product, drawing on their design specification, and thinking about the intended purpose and user



FOOD

KS1
(Year 1/2)

- Cut ingredients safely and hygienically.
- Assemble or cook ingredients.
- Cut, peel or grate ingredients safely and hygienically.
- Measure or weigh using measuring cups or electronic scales.
- Follow safe procedures for food safety and hygiene.



FOOD

Year 3

Healthy eating

- Understand how to keep teeth healthy
- Are able to use the Eatwell guide
- Understand the importance of keeping hydrated
- Know the importance of a healthy breakfast

Consumer awareness

- Begin to be able to read and understand food labels
- Understand that there are a variety of influences on the food we choose to eat (eg who we are with, season, cost, health, occasion)
- Know the importance of, and be able to, recycle food-related waste

Food safety and hygiene

- Know and can follow basic food safety rules
- Know how to get ready to cook: tie back long hair, wash and dry hands, put on a clean apron, remove jewellery
- With guidance follow procedures for clearing up such as washing and drying utensils, clearing and cleaning tables, sweeping the floor, disposing of rubbish, putting equipment away

Recipes and ingredients

- Recognise and name a broad range of ingredients (eg cereals, meat, fish)
- Use simple food descriptors relating to smell, flavour, texture and appearance
- Read and follow a simple recipe

Golden Thread throughout - Making

Weighing and measuring

- Begin to use a jug to measure liquids
- Begin to use digital weighing scales

Food preparation

- With supervision, begin to use the claw grip to cut harder foods using a serrated vegetable knife (eg carrot)
- With supervision, begin to use both the bridge hold and claw grip to cut the same food using a serrated vegetable knife (eg onion)
- With supervision, use a masher to mash hot food to a fairly smooth texture
- With supervision, begin to peel harder food (eg apple, potato)

Mixing and combining

- Crack an egg and beat with balloon whisk
- Mix, stir and combine wet and dry ingredients uniformly (eg to form a dough)

Shaping and assembling

- Use a rolling pin to roll out dough to a specific thickness (eg scones)
- Use biscuit cutters accurately
- Assemble and arrange ingredients for simple dishes (eg apple crumble, scrambled egg on toast)

Serving and garnishing

- With supervision, sprinkle garnish on hot dishes (eg grated cheese on pasta)
- With help and supervision, use spoons or jugs to serve equal portions of food or drinks in to cups, plates or bowls



FOOD

Year 4

Healthy eating

- Understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances that the body needs to be healthy and active
- Understand the value of eating sociably
- Begin to understand appropriate portion sizes for regular meals and healthy snacks

Consumer awareness

- Understand that food is caught or farmed and changed to make it safe and palatable / tasty to eat
- Understand that people have different views on how food is produced and that this influences the food they buy

Food safety and hygiene

- Understand how bacteria in food can cause food poisoning or food to go mouldy
- Understand how a variety of foods are stored differently to ensure they are safe to eat (eg fridge or freezer)

Recipes and ingredients

- Know where and how a variety of ingredients are grown
- Identify what they would do differently next time to improve what they have made

Golden Thread throughout - Making

Weighing and measuring

- Independently use a jug to measure liquids with increasing accuracy
- Independently use digital weighing scales with increasing accuracy

Food preparation

- With supervision, cut foods into evenly sized strips or cubes (eg peppers, cheese)
- With supervision, crush garlic using a garlic press
- With supervision, grate harder food using a grater (eg apples, carrots)

Mixing and combining

- Combine using a sieve, flour, raising agents and spices together in to a bowl
- Use hands to rub fat into flour (eg scones, apple crumble)
- Cream fat and sugar together using a mixing spoon

Shaping and assembling

- Knead and shape dough in to aesthetically pleasing products
- Coat food with ingredients such as beaten egg and breadcrumbs for fish cakes
- Independently spread ingredients accurately onto foods

Serving and garnishing

- Begin to recognise a range of appropriate ingredients to garnish hot and cold food
- Begin to understand appropriate portion sizes when serving food
- Begin to understand what types of food can be served together to make a balanced meal



FOOD

Year 5

Healthy eating

- Are able to make food choices taking in to consideration the Eatwell Guide
- Understand the main food groups and the different nutrients that are important for health

Consumer awareness

- Understand some of the basic processes to get food from farm to plate
- Are able to use information on food labels to inform choice

Food safety and hygiene

- Are able to independently get ready to cook: Tie back long hair, Wash and dry hands, Wear a clean apron, Remove jewellery and nail varnish.
- Can independently follow procedures for clearing up

Recipes and ingredients

- Know an extensive range of ingredients and how these are grown (eg beans, pulses, tropical fruits, vegetables)
- Use a range of food descriptors relating to smell, flavour, texture and appearance
- Identify how they would change the recipe to improve the food they have made

Golden Thread throughout - Making

Weighing and measuring

- Accurately use a jug to measure liquids
- Accurately use weighing scales

Food preparation

- With supervision, confidently use both the bridge hold and claw grip to cut the same food using a serrated vegetable knife (eg onion)
- With supervision, confidently peel harder food using a peeler (eg apple, potato)
- With supervision, dice foods and cut them into evenly sized, fine pieces (eg garlic, vegetable batons, herbs)

Mixing and combining

- Sieve wet and dry ingredients with precision
- Confidently crack an egg
- With supervision, whisk using an electric hand mixer (eg eggs)

Shaping and assembling

- Use hands to shape mixtures in to evenly sized pieces (eg burgers)
- Use a rolling pin to roll out dough to an accurate size and thickness (eg pizza)

Serving and garnishing

- Be able to choose appropriate ingredients to garnish hot and cold dishes
- With supervision, be able to use a spoon, ladle or jug to serve hot liquids (eg soup)
- Understand appropriate portion sizes when serving food



FOOD

Year 6

Healthy eating

- Know appropriate portion sizes and the importance of not skipping meals, including breakfast

Consumer awareness

- Understand some of the ethical dilemmas associated with the food people choose to buy
- Understand social influences on the food we choose to eat (eg media, peer pressure, ethics)

Food safety and hygiene

- Demonstrate good food safety practices when getting ready to store, prepare and cook food (eg keep raw meats away from other food)
- Know, and can follow, food safety rules and understand their purpose

Recipes and ingredients

- Compare different versions of the same dish and identify how they would change the recipe next time
- Confidently read and follow a recipe independently

Golden Thread throughout - Making

Weighing and measuring

- Independently measure amounts stated by a recipe using appropriate measuring containers

Food preparation

- With supervision, finely grate hard foods (eg zesting, parmesan cheese)
- With support, use a can opener and open ring-pull tins
- With supervision, confidently use the claw grip to cut harder foods using a serrated vegetable knife (eg carrot)

Mixing and combining

- With help, begin to separate eggs
- Use finger tips to rub fat into flour to make fine 'bread crumbs' (eg cheese straws)
- With supervision, cream fat and sugar together using an electric hand mixer
- With supervision, use a food processor or electric hand blender to mash, blend or puree hard ingredients or hot food (eg chickpeas for hummus or vegetables for soup)

Shaping and assembling

- Assemble, arrange and layer more advanced dishes (eg apple sponge pudding, shepherd's pie)
- Spread food evenly with a coating, paste or glaze

Serving and garnishing

- Cut food in to equal sized portions for the number being served (eg slicing pizza into eighths)
- Are able to plan and serve their own simple balanced cooked meal (eg pizza and salad, soup and bread rolls)



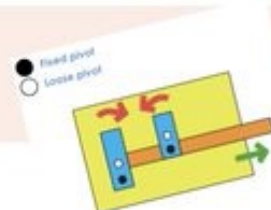
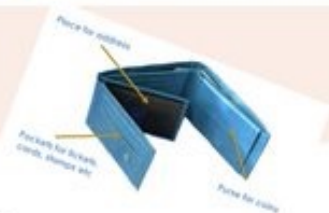
Lower Key Stage 2 Journey



Year 3/4

Aspect: Textiles

Focus: 2-D shape to 3-D product

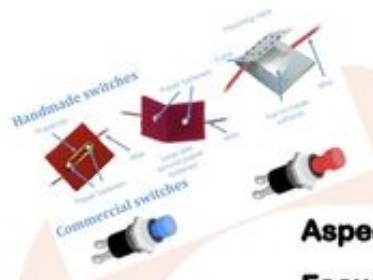


Year 3/4



Aspect: Mechanical Systems

Focus: Levers and linkages



Year 3/4

Aspect: Electrical Systems

Focus: Simple circuits and switches



Year 3/4

Aspect: Food

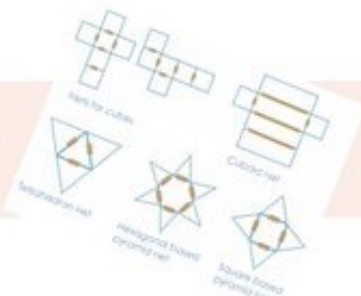
Focus:



Year 3/4

Aspect: Structures

Focus: Shell structures



Year 3/4

Aspect: Food

Focus:

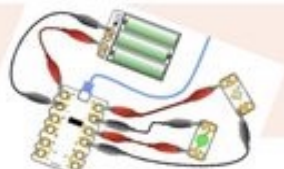


Upper Key Stage 2 Journey



Year 5/6

Aspect: Electrical Systems
Focus: Monitoring and Control



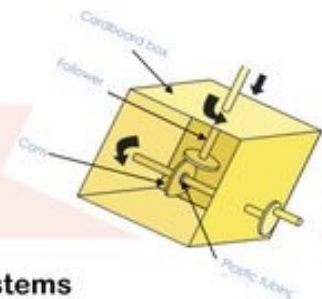
Year 5/6

Aspect: Structures
Focus: Framing structures



Year 5/6

Aspect: Mechanical Systems
Focus: Cams



Year 5/6

Aspect: Food
Focus:



Year 5/6

Aspect: Textiles
Focus: Combining different fabric shapes



Year 5/6

Aspect: Food
Focus: