Arnold View Primary School

Design and Technology Skills and Knowledge Progression Framework

Intent

At Arnold View Primary School we develop pupils' creativity and imagination through DT. We enable pupils to learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation. Our intent is that pupils:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently to enable them to participate successfully in an increasingly technological world.
- Apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- Design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.
- Acquire a broad range of subject knowledge and apply knowledge and skills from other subjects such as mathematics, science, engineering, computing and art.
- Can articulate their own creative thinking and choices.
- Critique, evaluate and test and justify their ideas and products and the work of others.
- Are inspired and excited to learn how DT has shaped history, different cultures and the wider world.
- Understand and apply the principles of nutrition and learn how to cook.
- Develop skills and understanding that can be transferred not only through each year group but into all aspects of life.

We believe in the importance of sequencing a curriculum which is progressive and designed effectively to reduce gaps in knowledge and to enable children to learn more and remember more. We also believe strongly in supporting cognitive load, enabling children to accumulate information in manageable chunks so that they understand one idea before moving onto the next.

Our skills and knowledge progression frameworks are separated into two strands: disciplinary knowledge and substantive knowledge. Disciplinary knowledge involves the skills needed in this subject area to gain knowledge to be an accomplished designer. Substantive knowledge is the specific, factual content – or 'Sticky Knowledge' – that we expect our children to acquire during their time at Arnold View.

The skills and knowledge have been sequenced to build on prior knowledge within each DT element e.g., construction, textiles, food, mechanics and electronics. Projects have been chosen to make links with other areas of the curriculum with a focus on audience and purpose.

DT and SEND

For pupils with SEND, adaptations may be made in DT which are based on the child's individual needs. However, we acknowledge that pupils with SEND do not generally benefit from differentiated teaching, tasks or expectations. Targeted teaching, however, can be effective in ensuring pupils achieve specific goals. We also ensure that SEND pupils are appropriately challenged in DT by:

- Teaching staff using teaching methods which match the needs of children and not planning for overly elaborate tasks which make it more difficult for pupils with SEND to learn curriculum content.
- Having an ethos that any adaptations should be based on individual needs and should aim to retain ambition for pupils with SEND.
- Understanding that for pupils with SEND needs which are more complex, it may be appropriate to have different curriculum expectations.

Skills and Knowledge Progression Framework

Disciplinary Knowledge – What skills do I need to do to be a successful Designer?

	EYFS	KS1		LKS2		UKS2		KS3
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Designing	**F1** Develop their own ideas and then decide which materials to use to express them. **F2** Explore, use and refine a variety of artistic effects to express their ideas and feelings.	• Use own ideas to design something. • Describe how their own idea works. • Draw a simple design and label the key parts of their product. • Make a simple plan before making and explain to someone else how they are going to make their product.	• Understand and simply explain the purpose of their product. • Think of an idea and plan what to do next. • Draw a design, label the key parts of their product and what tools and materials they will use to make it. • Explain why they have chosen specific materials to use	• Consider the audience and purpose of the product. • Prove that their design meets a specific criteria. • Design a product and make sure that it looks attractive. • Draw annotated designs with labels that detail the material choices and suitability of the given materials.	• Use ideas from other people when designing e.g. creating mood board of existing products. • Produce a plan and explain the use of materials, equipment and processes. • Persevere and adapt work when original ideas do not work. • Communicate ideas through annotated sketches that show different viewpoints of the product.	• Design, with a range of initial ideas, after collecting information from existing products. • Research and using ICT where appropriate. • Produce a detailed, step-by-step plan. • Explain how a product will appeal to a specific audience and how it meets the purpose	• Use market research of existing products to inform their design. • Follow and refine original plans. • Justify planning in a convincing way. • Draw detailed 3D designs using exploded diagrams or cross sectional drawing where appropriate to display finer details. • Show that culture and society is considered in plans and design specification.	• Design products using sketching skills and rendering and creating 3D designs where appropriate. • Creating their designs against a specific design specification for specific audience. • Show that their product can be made in a sustainable way. • Understand and research a product within the context of the world around them. • Create a detailed step-by-step plan of the making process, utilising their knowledge of specific technical vocabulary and detailed sketches.

Making / Construction	**F1** • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Explore different materials freely, in order to develop their ideas about how to use them and what to make. • Create closed shapes with continuous lines, and begin to use these shapes to represent objects. • Use large-muscle movements to wave flags and streamers, paint and make marks. • Choose the right resources to carry out their own plan. • Use one-handed tools and equipment, for example, making snips in paper with scissors. **F2** • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Create collaboratively, sharing ideas, resources and skills. • Progress towards a more fluent style of moving, with developing control and grace. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. **ELG** • Use a range of small tools, including scissors, paintbrushes and cutlery. • Safely use and explore a variety of materials, tools and techniques,	• Use their own ideas to make something. • Use tools safely. • Assemble and join materials using a variety of methods Tools and equipment used: • Pencil/paintbrush • Glue/glue spreader • String • Scissors • Masking tape/double sided sticky tape/cello tape • Paper/card/strengthening techniques • Ruler to begin to measure • Hole punch • Stapler • Drawing pins/paper fasteners • Junior Hacksaw (with adult support) • Stencils • Wheels and axles • Sliders and levers • Thread • Needle • Templates • Finishing techniques using glue e.g. glitter/sequins	• Choose tools and materials and explain why they have chosen them. • Join materials and components in different ways. • Can identify and name a simple selection of hand tools. • Carry out finishing techniques that have been modelled by the teacher. • Cut and join fabric to make a simple product. • Use simple sewing techniques. Tools and equipment used: • Pencil/paintbrush • Glue/glue spreader • String • Scissors • Masking tape/double sided sticky tape/cello tape • Paper/card/strengthening techniques • Ruler to begin to measure • Hole punch • Stapler • Drawing pins/paper fasteners • Junior Hacksaw (with adult support) • Stencils • Wheels and axles • Sliders and levers • Thread • Needle • Templates • Finishing techniques using glue e.g. glitter/sequins	• Follow a step-by-step plan choosing the right equipment and materials. • Select the most appropriate tools and techniques for a given task. • Work accurately to measure, make cuts and make holes. • Choose finishing techniques to improve the appearance of their products using a range of equipment including ICT. Tools and equipment used: • Pencil/paintbrush • Glue/glue spreader • String • Scissors • Masking tape/double sided sticky tape/cello tape • Paper/card/Tech card/further strengthening techniques/shell structures • Ruler to measure accurately and to score paper • Bone folder • Hole punch • Stapler • Drawing pins/paper fasteners • Junior Hacksaw/bench hook • Stencils • Pencil compass • Wire, batteries, blubs and switches • Sliders, levers and linkages • Thread • Needle • Templates/patterns • fastenings	• Know which tools to use for a particular task and show knowledge of handling the tool. • Know which material is likely to give the best outcome based on its properties. • Mark, measure and cut accurately. • Sew, weave or knit using a range of stitches. Tools and equipment used: • Pencil/paintbrush • Glue/glue spreader • String • Scissors • Masking tape/double sided sticky tape/cello tape • Paper/card/Tech card/further strengthening techniques/shell structures • Ruler to measure accurately and to score paper • Bone folder • Hole punch • Stapler • Drawing pins/paper fasteners • Junior Hacksaw/bench hook • Stencils • Pencil compass • Wire, batteries, blubs and switches • Sliders, levers and linkages • Thread • Needle • Templates/patterns • fastenings	• Name and use a range of equipment competently. • Make a prototype before making a final version. • Carry out finishing techniques to enhance to appearance and function of their product Tools and equipment used: • Pencil/paintbrush • Glue/ glue spreader • String • Scissors • Masking tape/double sided sticky tape/cello tape • Paper/card/Tech card/wood and use of frame strengthening techniques • Ruler to measure accurately and score paper • Bone folder • Hole punch • Stapler • Drawing pins/paper fasteners • Junior Hacksaw/bench hook • Stencils • Pencil compass • Hand drill • G-Clamp • Bradawl • Glue gun (with adult support) • Sand/glass paper • Wire, batteries, blubs and switches and motors • Gears and pulleys • Cams • Thread • Needle • Pins • Templates/patterns • Range of fastenings	• Know which tool to use for a specific practical task. • Know how to use any tool correctly and safely. • Know what each tool is used for. • Explain why a specific tool is best for a specific action. • Pin, sew and stitch materials together to create a product. Tools and equipment used: • Pencil/paintbrush • Glue/ glue spreader • String • Scissors • Masking tape/double sided sticky tape/cello tape • Paper/card/Tech card/wood and use of frame strengthening techniques • Ruler to measure accurately and score paper Bone folder • Hole punch • Stapler • Drawing pins/paper fasteners • Junior Hacksaw/bench hook • Stencils • Pencil compass • Hand drill • G-Clamp • Bradawl • Glue gun (with adult support) • Sand/glass paper • Wire, batteries, blubs and switches and motors • Gears and pulleys • Cams • Thread • Needle • Pins • Templates/patterns • Range of fastenings	• Understand the basic safety rules in the classroom and the workshop. • Understand the constraints of working in a school environment in comparison to industrial production • Create prototypes and patterns dependent on subject area. • Can successfully mark and cut materials with increasing accuracy. • Apply finishing techniques to enhance a product. • Use a range of temporary and permanent stitches by hand or machine. Tools and equipment used: • Pencil/paintbrush • Glue/ glue spreader • String • Scissors • Masking tape/double sided sticky tape/cello tape • Paper/card/Tech card/wood and use of frame strengthening techniques • Working with/shaping plastic/metal • Ruler to measure accurately and score paper Bone folder • Hole punch • Stapler • Drawing pins/paper fasteners • Junior Hacksaw/further saws/bench hook • Stencils • Pencil compass • Hand drill • G-Clamp • Bradawl • Glue gun • Sand/glass paper • Wire, batteries, blubs and switches, motors, sensors, actuators and microcontrollers • Gears and pulleys • Soldering Iron

	experimenting with colour, design, texture, form and function. <u>Tools/equipment used:</u> • Pencil/paintbrush • Glue/ glue spreader • Scissors • Masking tape • Paper/card							• Cams/hinges • Thread • Needle • Pins • Templates/patterns • Range of fastenings • Sewing machine
Technical Knowledge	**<u>F1</u>** Explore how things work. **<u>ELG</u>** Share their creations, explaining the process they have used.	• Make their own model stronger. • Make a product that moves (e.g. wind/simple motor powered boat etc)	• Make a model stronger and more stable. • Use wheels and axles, when appropriate to do so. • Know how simple mechanisms work e.g. sliders and linkages	• Know how to strengthen a product by stiffening a given part or reinforce a part of a structure. • Use a simple IT program within the design. • Create a product with a simple mechanism (e.g. levers).	• Link scientific knowledge by using lights, switches or buzzers • Use IT where appropriate to add to the quality of the product	• Suggest alternative plans; outlining the positive features and drawbacks • Evaluate appearance and function against original criteria	• Know which IT product would enhance a specific product • Use knowledge to improve a made product by strengthening, stiffening or reinforcing • Use electrical systems correctly and accurately to enhance a given product.	• Begin to understand materials are made up of natural and man-made fibres • Enhance the aesthetic of a textiles product using layering of materials e.g. applique and mola • Understand the use the properties of materials and performance of structural elements to achieve functioning solutions • Understand how more advanced mechanical systems used in their products enable changes in movement and force • Understand how more advanced electrical and electronic systems can be powered and used in their products (for example, circuits with heat, light, sound and movement as inputs and outputs) • Apply computing and use electronics to embed intelligence in products that respond to inputs (for example, sensors), and control outputs (for example, actuators), using programmable components for example, microcontrollers

Evaluating	**F1** Explore how things work. **F2** Return to and build on their previous learning, refining ideas and developing their ability to represent them. **ELG** Share their creations, explaining the process they have used.	• Describe how something works • Explain what works well and not so well in the model they have made	• Explain what works well and not so well in the model they have made • Explain simply how they might improve their model if they made it again	• Explain how to improve a finished model • Know why a model has or has not been successful	• Evaluate and suggest improvements for designs • Evaluate products for both their purpose and appearance • Evaluate their own and others work • Present a product in an interesting way	• Suggest alternative plans; outlining the positive features and drawbacks • Evaluate appearance and function against original criteria	• Test and evaluate designed products with specified audience where possible • Explain how products should be stored and give reasons • Evaluate product against clear criteria	• Outline and justify how they have met the design specification • Explain the drawbacks of the product or design and suggest improvements • Evaluate your own and others work giving feedback based on design specifications • Outline improvements for the final design, product or making process • Analyse the work of past and present professionals and others to develop and broaden their understanding

Food Technology	**ELG** Use a range of small tools, including cutlery. <u>Cooking tools:</u> • Spoon to measure/serve • Table knife to cut soft food • Serrated knife with adult support	• Cut food safely • Know where fruit and vegetables come from • Use basic food handling, hygiene practices and personal hygiene <u>Cooking tools:</u> • Spoons for measuring/weighing liquids, solids and dry ingredients • Serrated knife to cut soft foods • Fork for beating	• Weigh ingredients to use in a recipe • Describe the ingredients used when making a dish and cake • Can talk about which food is healthy and which is not • Follow safe procedures for food safety and hygiene <u>Cooking tools:</u> • Spoons for measuring/weighing liquids, solids and dry ingredients • Serrated knife to cut soft foods • Fork for beating	• Describe how food ingredients come together • Weigh out ingredients and follow a given recipe to create a dish • Know when food is ready for harvesting • Demonstrate hygienic food preparation <u>Cooking tools:</u> • Spoons • Grater • Peeler • Juicer • Food scissors • Using digital scales/measuring jugs for measuring/weighing • Serrated knifes to cut hard foods • Whisk for beating • Toaster and microwave for heating food	• Bring a creative element to the food product being designed • Know which season various foods are available for harvesting • Recognise safe practices in the kitchen and can identify hazards e.g. hazards when using an oven <u>Cooking tools:</u> • Spoons • Grater • Peeler • Juicer • Food scissors • Using digital scales/measuring jugs for measuring/weighing • Serrated knifes to cut hard foods • Whisk for beating • Toaster and microwave for heating food	• Be both hygienic and safe in the kitchen • Know how to prepare a meal by collecting the ingredients in the first place • Weigh and measure accurately (timings, dry ingredients and liquids) <u>Cooking tools:</u> • Spoons • Grater • Peeler • Juicer • Food scissors • Using scales/measuring jugs for measuring and weighing • Using a serrated knife to dice and cut a variety of foods into evenly sized pieces • Using a rolling pin to roll out dough to even thickness • Use of an oven/hob (with adult supervision) for heating food	• Explain how food ingredients should be stored and give reasons • Work within budget to create a meal • Understand the different between savoury and sweet dish <u>Cooking tools:</u> • Spoons • Grater • Peeler • Juicer • Food scissors • Using scales/measuring jugs for measuring and weighing • Using a serrated knife to dice and cut a variety of foods into evenly sized pieces • Using a rolling pin to roll out dough to even thickness • Use of an oven/hob (with adult supervision) for heating food	• Prepare a savoury meal taking into consideration healthy choices • Make one adaption to the ingredients to enhance the recipe • Understand food hygiene and safely including use of the fridge and preparation of the cooking station • Recognise and be able to use a variety of cooking equipment • Understand the importance of weighing and measuring accurately • Experiment with one type of useful bacteria e.g. yeast <u>Cooking tools:</u> • Spoons • Grater • Peeler • Juicer • Food scissors • Sieve/colander • Using scales/measuring jugs for measuring and weighing • Using a knife to dice and cut a variety of foods into evenly sized pieces • Using a rolling pin to roll out dough to even thickness • Use of an oven/hob for heating food

Substantive Knowledge – Sticky Knowledge

	KS1	LKS2	UKS2	KS3
Autumn	**Cycle A: Construction – chair for Prince John** **Prince John has broken his chair we need to construct a stronger chair.** • A chair that is stable will not fall over and will support weight • Structures are more stable when they have a wider base • I can name different types of chairs • A chair can have legs, a back, a seat, joins, arms and support • Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper • Joining materials together e.g. with glue or tape can make them stronger • Folding or rolling paper/card into a tube makes it stronger • Adding an extra layer of materials can make it rigid **Cycle B: Mechanisms –Sliders and levers- Moving picture story book to read to FS** • Sliders and Levers are mechanisms that make things move • Sliders help to move things from side to side and up and down • Levers are slightly more complex. They use a fulcrum (a fixed point around which the lever can pivot) to make things move in arc (curve). • Children's picture books often contain sliders and levers to tell a story in an exciting way	**Cycle A: Construction** **Design, make and evaluate a desk tidy for Mrs Otterburn to keep her desk tidy (must include the school motto)** • Shell structures are structures with a solid outer surface (curved or flat) and a hollow inner area and are used to protect, contain or present products • Some examples of shell structures are food packaging, tunnels, helmets, drinks cans, boats and desk organisers • A rounded outer surface is strong because it spreads forces throughout the whole structure • A desk organiser needs to be functional but also appeal to its user **Cycle B: Construction/Shell structures** **Design, make and evaluate packaging for a gift for a family member (link to RE/Christmas)** • Shell structures are structures with a solid outer surface (curved or flat) and a hollow inner area and are used to protect, contain or present products • Some examples of shell structures are food packaging, tunnels, helmets, drinks cans, boats and desk organisers • A rounded outer surface is strong because it spreads forces throughout the whole structure • The purpose of packaging is to protect the product inside and appeal to its audience/user through its appearance e.g. colour, wording, patterns etc	**Cycle A: Mechanics** **Design, make and evaluate a rotary fairground ride for a KS1 child to play with** • Fairground rides can run using either a gear or pulley mechanical system • You can change the speed of rotation by using pulleys and gears • Using a small pulley or gear to drive a larger one reduces rotation speed and gears down the product • You need power (a battery), an input (pressing of a switch) and a process (the turning of the motor and gears/pulleys) to achieve an output (the ride rotating) **Cycle B: Mechanics** **Design, make and evaluate a Victorian style toy with a CAM for a F2 child to play with** • A cam mechanism is made up of 3 components: cam, slider and follower • A cam is a mechanism that changes one sort of movement to another. Cams can be an off-centre wheel or a specially shaped wheel. • When the cam rotates, the follower moves up and down in a reciprocating motion • A follower is a device that follows the movement of the cam: a lever or a slider. • Cams can be different shapes and each one causes the cam to move in a different way • Some types of cams are an Egg Cam, Off-Centre Cam, Peg Cam and a Snail Cam	

Spring	**Cycle A: Mechanics – Wheels and Axles** **Making a moving vehicle for a younger sibling or cousin to play with.** • Wheels and axles are mechanisms that help things to move. • If your axles are fixed to the chassis then the wheels turn on their own. • If your axles are not fixed to the chassis then the wheels will move with the rotating axles. • A chassis should be strong and rigid enough to hold a vehicle. • The chassis should include axle holders designed so that the axle fits freely in the axle holder. • You can use pegs, straws and paper triangles to hold free moving axles • Stoppers help to keep the wheels from falling off **Cycle B: Food-** **Where food comes from and how to correctly prepare a fruit and vegetable-based dessert/snack for class party, for themselves to eat.** • Food comes from plants and animals. • Fruit and vegetables come from different types of plants • Fruit and vegetables: e.g. apples, tomatoes, lettuce, contain vitamins and minerals. • We should aim to eat 5 portions of fruit and veg per day. • Use safe and hygienic ways of preparing and cutting fruit and vegetables	**Cycle A: Mechanics** **Design, make and evaluate an information book (product) for a KS1 child (user) to educate them about light (purpose)** • Levers and linkages are mechanisms that make things move. • The 'input' is where the user pushes or pulls a card strip. • The 'output' is where one or more parts of the picture move. • Lever and linkage mechanisms usually produce oscillating and or reciprocating movement. • Oscillating is moving back and forth in a regular rhythm. • Reciprocating is moving backwards and forwards in a straight line. **Cycle B: Electronics** **Design, make and evaluate a night light to illuminate a child's room at night** • Electricity is a type of energy. It is used to power lots of things • Electricity can flow through wires and cables. It can also be stored in batteries or cells. • A circuit is the path the electric current follows. It must have no breaks in it (a closed circuit) for electricity to flow. • The electricity flowing through a circuit is known as the current. The current can be deliberately allowed to flow or broken using a switch. • A simple circuit is a closed loop of a conductor material, e.g. wire, in which electricity can travel in a current. In order for it to be a closed circuit, a power source e.g. battery/cell is needed (input device), and something that is powered by the electricity, e.g. light bulb (output device). A switch can be used to break the circuit (turning the output device off).	**Cycle A: Construction/Frame structures** **Design, make and evaluate a small-scale bird hide to help wildlife** • Frame Structures are rigid support structures that use beams, columns and slabs to hold large forces of gravity and weight. They give shape and support and have joints. • Houses, skyscrapers, bridges, scaffoldings, tables, bird-hides and roller coasters are frame structures. They can be strengthened by foundations and bracing. • Triangulation can help make a structure stronger as when force is applied to one point on the triangle the pressure is shared amongst the other two points. • Card strips can be used to create secure joints **Cycle B: Textiles** **Design, make and evaluate a bag for a parent to take shopping** • Bags and satchels can be made from a variety of materials. It is important that the materials are strong enough to bear the weight of the bag's contents. Leather, cotton and polyester are all often used. • Textiles designers and makers can use stitches (e.g. cross stitch, stem stitch, chain stitch satin stitch and other techniques (e.g. embroidery, tie dye) to add to the aesthetic appeal of their product. • Tie dye is a method of colouring fabrics, by tying it in a tight bundle (with rubber bands/string) and dyeing it with different colours. • They can also add a number of features to improve the product's functionality, for example by adding a range of fasteners (e.g. clasps, ties, buttons, zips, studs, toggles and velcro) to ensure that the contents are safe and secure but also allowing the user easy access when needed. • Tacking are large running stitches to hold pieces of fabric together temporarily during the making process.	

Summer	**Cycle A: Textiles – Simple glove puppet to tell a story to their parents.** • Textiles are materials woven from fibres. • Textiles are used to make clothing, sheets, towels, carpets, rugs and toys such as glove puppets because they are soft and flexible. • Lots of materials are textiles for example wool, silk, cotton, nylon, felt and polyester. • Most textiles are made in factories but some still make things by hand. • Stapling and safety pins are quicker ways of joining materials but sewing and gluing are more secure and are easier to hide. • A needle can be sharp so you need to be careful and safe so you don't hurt your fingers. **Cycle B: Construction-** **Making an animal enclosure for an animal to relax** • An animal enclosure is an enclosed space for keeping animals in. • An animal enclosure is usually found at the zoo and has similar features to the animal's normal habitat • Freestanding structures are structures that can stand up without being attached to something else. • Structures are more stable when they have a wider base • Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper • Joining materials together e.g. with glue or tape can make them stronger • Folding or rolling paper/card into a tube makes it stronger • Adding an extra layer of materials can make it rigid	**Cycle A: Food** **Design, make and evaluate a Mediterranean inspired pasta salad dish for themselves for a healthy lunch** • Mediterranean food comes from the countries that border the Mediterranean Sea. • Mediterranean food is usually healthy and contains lots of vegetables, including olives as many olive trees grow there. • A pasta salad is prepared with one or more types of pasta, a range of vegetables and is covered in a vinegar, oil or mayonnaise-based dressing. It is normally served cold and can contain meat and cheese. • Pasta is cooked in boiling hot water and you can tell the water is boiling (at 100°C) as you will see and hear the water bubbling. • Vegetables are in season in different countries at varying times of the year. Some fruit and vegetables are imported from different countries at certain times of year. • Some vegetables grow underground e.g. onions and carrots, some grow on vines e.g. cucumbers, tomatoes and some sprout out of the ground using strong roots e.g. lettuce. **Cycle B: Textiles** **Design, make and evaluate a purse/wallet (product) for Robin Hood (user) for carrying his money (purpose)** • Sewing involves the joining of different textile fabrics using a needle and thread to create a stitch. • A line of stitching that joins pieces of fabrics together is called a seam. • Wallets and purses are designed to be durable, to keep important contents safe, and be aesthetically-pleasing. • Thinking about the way a product looks is called 'aesthetics' and is highly important in textiles. • Different fabrics have different properties (characteristics) which make them good for different purposes e.g. stability and waterproofness. • Some stitches are easier and quicker, (e.g. running stitch) some are more secure and do not show the seam as obviously (e.g. backstitch), some help to improve certain fabrics (e.g. overstitch) and some are more aesthetically pleasing (e.g. blanket stitch). • Appliqué means 'applied' and it describes method of stitching/gluing patches onto fabric `to provide decoration. • You can fasten materials together using buttons and Velcro	**Cycle A: Food** **Design, make and evaluate bread for a Viking feast** • During Viking times, bread was a staple food, often eaten with soup and stews. • Bread is made from dough. • Grain is a food that is grown and it is ground into flour using large stones. • The flour is mixed with water and a product called yeast, to create a dough. This is covered and left for 1 hour – this is called proving and the yeast makes the dough rise. • The purpose of kneading bread is to strengthen the gluten (the protein in grain such as wheat). This makes the dough smooth and elastic and hold its shape. • Bread is a savoury product which means it has a salty or spicy taste rather than a sweet taste. **Cycle B: Electricity** **Design, make and evaluate an alarm system to keep someone safe** • Electricity can flow through circuits. A circuit is the path the electric current follows. It must have no breaks in it (a closed circuit) for electricity to flow. • The electricity flowing through a circuit is known as the current. It can be used to power an output device. • Switches can be positioned so that electrical currents can flow through them (closed switch) or cannot flow through them (open switch). This alters the way that output devices function. • In a series circuit, two output devices are controlled by one switch. In a parallel circuit, two output devices can be controlled separately by switches. • Switches can be used alongside control boxes, to set up timed systems (e.g. traffic lights) and monitoring systems (e.g. alarms). • Burglar alarms are another example of a monitoring system. They generally work using micro-switch, LDR, laser, or video camera systems, and can be controlled to act in certain ways (e.g. sounding a buzzer) via a control box. • A Micro-switch is a small switch that is extremely sensitive to motion, used in automatic • monitoring systems. • A Reed Switch is a switch that it operated by a magnet.	