



Design and Technology Curriculum – Year 3 and 4 – Cycle B

[Please refer to Previous Years' Geography assessment documents linked to hierarchies](#)

[Link to DT Association guidance](#) – [Link to Projects on a Page Documents](#)

Non- Negotiables	Developing Planning and Communicating Ideas	Evaluating Processes and Products	Knowledge and Understanding of Materials and Components
Year 3	<ul style="list-style-type: none"> 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 Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
Year 4	<ul style="list-style-type: none"> 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 Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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.
Term	Autumn	Spring	Summer
Topic	Making a money container (textiles)	Levers – story books	Electrical Circuits
Resources	collection of purses, wallets, belt bags made from different materials, from different cultures, and with a range of fastenings, selection of fabrics eg felt, calico, hessian, selection of fastenings used on purses, wallets and bags, scissors for fabric, thread, tape, needles, fabric glue, materials for decorative techniques eg embroidery thread and needles, dye, fabric crayon and paints	a collection of books which have pop-up and moving parts, other products which include linkages eg toys, squeazy kitchen mops, examples of pop-up and moving mechanisms made beforehand, squared paper, coloured paper and card, paper fasteners or binders, paper straws, PVA glue, glue sticks, masking tape, thick corrugated card and drawing pins for modelling ideas, scissors, craft knives, cutting mats, safety rulers, hole punch, wavy line cutters, perforation cutters, computer and printer with graphics or word processing program	a collection of lights for a variety of purposes, Internet connection and list of appropriate websites for research purposes, batteries, battery holders (if cylindrical batteries are used), bulbs, bulb holders, LEDs, crocodile connectors, lengths of connecting wire, aluminium foil, paper fasteners, paper clips, drawing pins, selection of suitable sheet materials, construction card, sticky tape, adhesives, reflective materials, scissors, staplers, wire stripper and cutter, small electrical screwdriver, appropriate control box, control program
Vocabulary	designing eg user, purpose, design criteria, model, evaluating, labelled drawings, stiffening, reinforcing, coins, notes making eg pattern/templates, strength, weaknesses, accurate, finishing knowledge and understanding eg fabric, fastening, compartment, zip, press stud, clasp, hook and eye, button, buckle, seam, seam allowance, reinforce, gusset, dye, embroidery, properties eg strength, hard-wearing, stretch, fray	designing eg model, mock-up, plan, fit for the purpose making eg fold, adhesive, scoring, cutting, joining, temporary fixing, permanent fixing knowledge and understanding eg linkage, lever, pivot, flexible, shape, joint, hinge, area, surface, covers, types of movement eg rotary, linear	designing eg user, specific, plan, labelled drawings, decide, list, classify, specification, design criteria making eg clip, rectify, fault, screw, join, connect knowledge and understanding eg electricity, circuit, battery, battery holder, bulb, bulb holder, wire, insulation, crocodile connector, aluminium foil, switch, reflector, energy, control, automatic
Lesson 1	<p>Year 3: To explore a range of money containers</p> <p>Year 4: To explore a range of money containers and examine their features.</p> <p>Activities: Children will study, describe and compare a variety of different money containers. They may then either examine some money containers – drawing and labelling them, or answer questions about a variety of money containers.</p> <p>Outcomes:</p> <p>Year 3: Children know that money containers are designed for different purposes and users • Children identify features common to all money containers • Children draw, label and evaluate different money containers</p> <p>Year 4: Children know that money containers are designed for different purposes and users • Children identify features common to all money containers • Children draw, label and evaluate different money containers</p>	<p>Year 3: To investigate products with lever and linkage systems.</p> <p>Year 4: To investigate and evaluate products with lever and linkage systems.</p> <p>Activities: Children will examine a variety of books with moving mechanisms and discuss their design and construction using some technical vocabulary. They will then more closely examine some moving mechanisms, sketching and labelling them.</p> <p>Outcomes:</p> <p>Year 3: • Children recognise products that contain lever and linkage systems • Children explain why a particular mechanism has been used • Children use some technical vocabulary to describe lever and linkage systems</p> <p>Year 4: • Children recognise products that contain lever and linkage systems • Children explain why a particular mechanism has been used for a particular purpose • Children use technical vocabulary to describe lever and linkage systems</p>	<p>Year 3: To investigate a variety of lights and how they are used.</p> <p>Year 4: To investigate a variety of lights and how they are designed and used.</p> <p>Activities: Children will study a variety of lights, describing some of their features, e.g. the way they reflect light, how they are designed to be free-standing. They may then label and describe the features of a light, or examine a variety of different lights.</p> <p>Outcomes:</p> <p>Year 3: • Children identify the features of commercially available lights which make them suitable for a specific purpose • Children describe how a light and switches work • Children know how to work safely with electricity</p> <p>Year 4: • Children identify the features of commercially available lights which make them suitable for a specific purpose or user • Children describe how a light and switches work • Children know how to work safely with electricity</p>

<p>Lesson 2</p>	<p>Year 3: To learn how to sew using a range of different stitches. Year 4: To learn how to sew using a range of different stitches. Activities: Children will identify ways in which money containers have been joined by sewing, then either practise joining scrap material by hand sewing, or practising decorative hand sewing techniques. Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). Outcomes: Year 3: • Children identify ways a money container has been joined (stitching) • Children join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration) Year 4: • Children identify and evaluate ways a money container has been joined (stitching) • Children join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration)</p>	<p>Year 3: To experiment with techniques to create moving mechanisms. Year 4: To experiment with a range of techniques to create moving mechanisms. Activities: Children will learn how to make some moving mechanisms using card or paper. They will then work independently or in groups to construct their own mechanisms. Outcomes: Year 3: Children cut and shape materials with some precision to make their mechanisms work • Children join and combine materials and components • Children mark out and measure Year 4: Children cut and shape materials with some precision to make their mechanisms work • Children join and combine materials and components in a variety of ways • Children mark out and measure accurately</p>	<p>Year 3: To investigate which components can be used in a simple circuit. Year 4: To investigate which metal components can be used in a simple circuit. Activities: Children will consider what components are required when making a circuit that illuminates a bulb. They will then create simple circuits and test a variety of different components within them. Outcomes: Year 3: Children understand and use safe practices when working with electricity • Children make a bulb light up in a simple circuit (with support) • Children identify metal components that conduct electricity Year 4: Children understand and use safe practices when working with electricity • Children make a bulb light up in a simple circuit • Children identify metal components that conduct electricity</p>
<p>Lesson 3</p>	<p>Year 3: To gather ideas for designing a money container. Year 4: To gather and generate ideas for designing a money container. Activities: Outcomes: Children will begin to develop ideas for making a money container, either by cutting, folding and joining paper to explore ideas, or constructing model containers using given templates. Year 3: • Children make a template including a seam allowance • Children mark out measurements accurately Year 4: Children understand that modelling can be used to try out different ideas • Children make a template including a seam allowance • Children mark out measurements accurately</p>	<p>Year 3: To explore a range of different fonts and graphic techniques. Year 4: To explore and experiment with a range of different fonts and graphic techniques. Activities: Children will consider the importance, and effects, of good graphic design and font selection for storybooks. They may then either practise sketching, shading and writing techniques, or use computer software to explore how fonts can be selected and altered so they are appropriate for a purpose. Outcomes: Year 3: Children aware of different fonts and graphic techniques • Children experiment to create a range of different fonts and graphic techniques • Children explain which designs they like best/ least Year 4: Children aware that different fonts and graphic techniques need to be suited to their purpose • Children experiment to create a range of different fonts and graphic techniques • Children explain which designs they like best/ least and why</p>	<p>Year 3: To investigate how to use switches to control a bulb. Year 4: To investigate how to use switches to control a bulb. Activities: Children will learn about a variety of switches, then make and test a variety of simple switches made using everyday materials or readily-available electrical components. Outcomes: Year 3: • Children understand and use safe practices when working with electricity • Children create their own switches and place them in a circuit to control a bulb (with support) • Children listen to suggestions about how they will use their ideas in their own light designs Year 4: • Children understand and use safe practices when working with electricity • Children create their own switches and know how to place them in a circuit to control a bulb • Children make suggestions about how they will use their ideas in their own light designs</p>
<p>Lesson 4</p>	<p>Year 3: To be able to design a money container. Year 4: To be able to design a money container for a purpose Activities: Children will draw and annotate designs for money containers for an 'audience' of their choosing. Alternatively, they may design a money container for a given audience and/or purpose. Outcomes: Year 3: Children write a simple specification for their design • Children produce a detailed design for their money container • Children explain how they will create their money container Year 4: Children write a simple specification for their design based on the intended user • Children produce a detailed design for their money container • Children explain how they will create their money container</p>	<p>Year 3: To be able to plan a storybook/page Year 4: To be able to plan and design a storybook Activities: Working either individually or in groups, children will draw and annotate designs for a storybook with some moving mechanisms. Outcomes: Year 3: Children create a design • Children choose suitable mechanisms to create moving parts in their storybook/page • Children choose appropriate fonts and graphic techniques to use Year 4: Children create a design for a particular purpose • Children choose suitable mechanisms to create moving parts in their storybook • Children choose appropriate fonts and graphic techniques to use in their design</p>	<p>Year 3: To be able to design a light for a particular purpose. Year 4: To be able to design a light for a particular purpose. Activities: Children will draw and annotate a design for a light, considering its purpose, what switch to use, and how to conceal its circuitry Outcomes: Year 3: • Children apply what they have learnt to their design ideas • Children describe how they will make their product Year 4: • Children design a product which considers some of the needs of the user • Children apply what they have learnt to their design ideas • Children describe how they will make their product</p>
<p>Lesson 5</p>	<p>Year 3: To be able to make a money container using textiles. Year 4: To be able to make a money container using textiles. Activities: Children will, based on previously completed designs, make money containers using hand sewing techniques. Outcomes: Year 3: Children follow their design to create a money container • Children use accuracy and control when working with textiles</p>	<p>Year 3: To be able to make a storybook/page with moving mechanisms using a design. Year 4: To be able to make a storybook with moving mechanisms using a design. Activities: Referring to a previously completed design, children will make storybooks with some moving mechanisms Outcomes:</p>	<p>Year 3: To be able to make a product from a design. Year 4: To be able to make a product from a design. Activities: Outcomes: Referring to a previously completed design, children will make a light, ensuring it is safe and that it looks like their design. Year 3: Children apply what they have learnt when making a final product • Children make a finished product which considers some of the needs of the user</p>

	Year 4: Children follow their design to create a money container • Children use accuracy and control when working with textiles • Children use finishing techniques to make their money container aesthetically pleasing	Year 3: Children follow a design to create a storybook/page • Children create moving mechanisms • Children create pages that are neat and creative Year 4: Children follow a design to create a storybook • Children create moving mechanisms that works well • Children create pages that are neat, accurate and creative	Year 4: Children apply what they have learnt when making a final product • Children follow a design • Children make a finished product which considers some of the needs of the user
Lesson 6	Year 3: To be able to evaluate a finished product. Year 4: To be able to evaluate a finished product. Activities: Children will show and evaluate their finished money containers, either individually or in small groups. Outcomes: Year 3: Children evaluate their own finished products • Children suggest ways in which they could improve their work Year 4: Children evaluate their own finished products • Children evaluate the work of others • Children suggest ways in which they could improve their work	Year 3: To be able to evaluate a finished product. Year 4: To be able to evaluate a finished product. Activities: Children will share, discuss and evaluate previously completed storybooks with moving mechanisms. Outcomes: Year 3: • Children evaluate their own finished product fairly and constructively • Children explain what they would do differently if they were to make their product again Year 4: Children evaluate other people’s finished products fairly and constructively • Children evaluate their own finished product fairly and constructively • Children explain what they would do differently if they were to make their product again	Year 3: To be able to evaluate a finished product. Year 4: To be able to evaluate a finished product. Activities: Children will test, demonstrate and evaluate their finished light designs. They may do this either individually or with a partner. Outcomes: Year 3: Children evaluate a finished product against original design criteria • Children identify ways in which they could modify or improve their product Year 4: Children evaluate a finished product against original design criteria • Children identify ways in which they could modify or improve their product if they were to make it again • Children evaluate the work of others fairly

Assessment Criteria

	Exploring Existing Products	Developing Ideas	Making New Products	Evaluating
Year 3	• I can identify qualities of a range of materials, and suggest possible uses	• I can design a functional, appealing product that is fit for a stated purpose. • I can use words, labelled sketches and models to communicate realistic design ideas.	• I can select appropriate tools and techniques for making my product. • I can measure, cut, shape and join materials with some accuracy using a range of techniques. • I understand how to strengthen, stiffen and reinforce to create a stable structure. • I can use decorative techniques to enhance my product’s appearance. • I can use a range of simple finishing techniques to improve my product’s appearance.	• I can evaluate my own and others’ finished products against design criteria and suggest improvements.
Year 4	• I can generate ideas by researching and using information	• I can use words, labelled sketches and models to communicate design ideas and step-by-step plans.	• I can construct simple electrical circuits and incorporate into a model. • I can join and combine materials to create mechanisms achieving movement. • I can construct a model incorporating a mechanism to achieve movement. • I can cut, shape and join materials with increasing accuracy using a range of techniques.	• I can evaluate my finished product, suggesting alternative techniques which could achieve improvements.