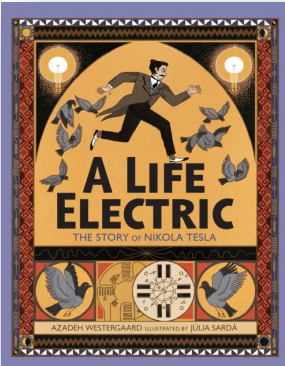
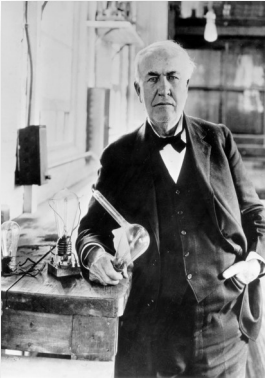




YEAR 4

**DESIGN & TECHNOLOGY
CURRICULUM**

Year 4 D&T - Broader Curriculum Aims and Objectives

Key Themes	Topics of Study	
<ul style="list-style-type: none"> Food Technology Textiles Electrical Systems 	<ul style="list-style-type: none"> Adapting a recipe - Alternative Biscuits Fastenings - Book Sleeve Electrical systems - Torches 	
Key D&T Knowledge and Understanding	Vocabulary	
<ul style="list-style-type: none"> Know why each of the food groups is important for a balanced diet. Know the importance of clearly stating ingredients on packaging for nutrition and allergy safety. Know how to identify which food group a variety of alternative biscuit ingredients belong to. Know about the different sensory characteristics of these alternative ingredients. Know that different fabrics have different properties which makes them good for different purposes. Know that there are a variety of different stitches that can be used to join fabrics together. Some are easier and quicker e.g. running stitch; some are more secure e.g. backstitch and others are more aesthetically pleasing e.g. blanket stitch. Know that aesthetics is highly important in textiles. Know the different components within an electrical circuit in a torch and what their function is. Know how to create a labelled diagram of the inside and outside of a torch to show the pathway of the electricity. Know about the different types of switches used within torches and how they work. Know how to create their own electrical circuit and how to incorporate it into a functional product e.g. a torch. Know how to work safely with electrical components. 	Adapt, equipment, evaluation, flavour, ingredients, method, net, packaging, prototype, quantity, recipe, target audience, unit of measurement. Aesthetic, air resistance, chassis, design, design criteria, function, graphics, kinetic energy, mechanism, net, structure. Cladding, frame structure, inspiration, pavilion, reinforce, stable, texture, theme. Assemble, fabric, fastening, running stitch, stencil, template. Battery, bulb, buzzer, cell, conductor, copper, electrical item, insulator, series circuits, switch, test, wire.	
	Quality Literature Links	Ground Breaking Products
		 <p style="text-align: center;">Thomas Edison</p>

Year 4 D&T - Broader Curriculum Aims and Objectives

Progression of Skills / Disciplinary Knowledge

Designing	Making	Technical Knowledge	Evaluating and Analysing	Cooking and Nutrition
Understanding Contexts, Users and Purposes. Generating, developing, modelling and communicating ideas	Planning, Practical Skills and Techniques	Construction, Electrical systems and Textiles.	Own Ideas and Products Existing Products	Understand and apply the principles of nutrition and learn how to cook.
<ul style="list-style-type: none"> • Use research for design ideas. • Show how a design meets a range of requirements and is fit for purpose. • Begin to create own design criteria. • Have at least one idea about how to create a product and suggest improvements to design. • Produce a plan and explain it to others. • Discuss how realistic a plan is. • Include an annotated sketch. • Make and explain design decisions considering the availability of resources. • Explain how a product will work. • Make a prototype. 	<ul style="list-style-type: none"> • Select suitable tools and equipment; explain choices in relation to required techniques and use accurately. • Select appropriate materials which are fit for purpose and explain choices. • Work through a plan in order. • Realise if a product is going to be good quality. • Measure, mark out, cut and shape materials/ components with some accuracy. • Assemble, join and combine materials and components with some accuracy. 	<ul style="list-style-type: none"> • Measure carefully to avoid mistakes. • Attempt to make a product strong. • Continue to work on a product even if the original did not work. • Select the most appropriate tools/techniques. • Explain alterations to a product after checking it. • Use a number of components in a circuit. • Think about the user when choosing textiles. • Begin to devise a template. • Explain how to join things in different ways. • Understand that a simple fabric shape can be used to make a 3D textiles project. 	<ul style="list-style-type: none"> • Refer to a design criteria while designing and making. • Use criteria to evaluate a product. • Begin to explain how an original design could be improved. • Evaluate existing products considering: how well they have been made, materials, whether they work, how they have been made, if they are fit for purpose. • Discuss by whom, when and where products were designed. • Research whether products can be recycled or reused. • Learn about some inventors/designers/ engineers/chefs/ manufacturers of ground-breaking products. 	<ul style="list-style-type: none"> • Explain how to be safe and hygienic and apply this when cooking. • Consider how to present products in interesting and attractive ways. • Understand that ingredients can be fresh, pre-cooked or processed. • Begin to understand about food being grown, reared or caught in the UK and wider world. • Describe an eat-well plate and what a healthy diet is made up of. • Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading and baking.

PRIOR LEARNING LINKS - D&T

Y3 Seasonal Tarts: Learn more about where foods come from in the UK and the wider world. Understand which foods are available within which season. Adapt and follow a recipe to make a seasonal tart.

Y3 Monuments: 3D net structures.



Year 4 Design & Technology

Unit of Learning: Let's Make Alternative Biscuits

D&T School Theme: Food and Nutrition

FUTURE LEARNING LINKS - D&T

Y5 Healthier Burgers: Learn about the different ingredients within dishes and where they come from. Understand which foods we can eat in an abundance and which are not as healthy. Design and make their own healthier burger including design label.

Teaching Sequence for this Unit.

What do we need to test when carrying out biscuit trials?

Can we comment on taste, smell, texture, appearance, packaging and target audience?

A FN TK

What techniques are used to make biscuits?

Can we follow a recipe to apply these techniques to make a biscuit?

How do they taste?
What other ingredients could we use in our own biscuit recipe?

M FN TK

What difference does it make to a biscuit when we add our own additional ingredients?

Can we cook to a recipe and adapt it to create a new biscuit prototype?

How does sharing/tasting each other's biscuit prototypes strengthen our final product?

A FN M TK

Can we work as a group to design a biscuit within a given budget?

Can we present our design to an audience explaining, what we plan to do, what our costs will be and whom will be targeted?

D FN TK

Can we set up and take part in a biscuit bake off?

Once we have made our biscuit, can we use our knowledge of nets from Year 3 to make suitable packaging?

FN M

Focus for Disciplinary Knowledge

Designing	Making	Technical Knowledge	Evaluating and Analysing	Food and Nutrition
Understanding Contexts, Users and Purposes. Generating, developing, modelling and communicating ideas	Planning, Practical Skills and Techniques	Construction, Textiles, Mechanical Systems and Electrical Systems	Own Ideas and Products Existing Products	Understand and apply the principles of nutrition and learn how to cook.

PRIOR LEARNING LINKS - D&T

- **Y3: Moving Monsters–**

Developed further understanding of how moving parts work to create a mechanism. Looked at linkage system and the components within it. Learnt more about product design criteria and selected the most materials and equipment.



Year 4 Design & Technology

Unit of Learning: **Let's Make a Torch**

D&T School Theme: Electrical Systems

FUTURE LEARNING LINKS - D&T

- **Y6 Moving Buggy**-design and create the electrical and mechanical systems needed to make a moving buggy. Created a strong outer frame and fitted systems within it. Tested and evaluated.

Teaching Sequence for this Unit.

What is electricity and how do we use it?

Can we use our knowledge from Science to build a simple series circuit with a switch?

TK

What is the purpose of a torch?

How does a torch work?
What features do torches have?
Can we analyse and evaluate two existing torches and draw conclusions?

A

TK

Can we design a torch for a particular user based on that person's profile?

What colours might they like?
What key/special features might they need? Why?
What materials will be most effective?

D

TK

Can we follow a clear sequence of steps to make and assemble our torch including its circuit?

What other additional materials/equipment can we use to tailor our design to the needs of the user?

M

TK

Is our torch fit for purpose?

Does the torch light up?
Can the torch be switched on and off?
Does the circuit remain securely in place when carrying the torch?

A

TK

Focus for Disciplinary Knowledge

Designing	Making	Technical Knowledge	Evaluating and Analysing	Food and Nutrition
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PRIOR LEARNING LINKS - D&T

Y2 Fabric Pouch: Learn how to sew running stitches and how to thread a needle and cut and tie thread. Use materials and decorative features. Join two identical fabric shapes.



FUTURE LEARNING LINKS - D&T

Y6 Stuffed Toys. Use a range of stitches to add decorations and objects to a felt main body. Stuff the main body and use strong and secure blanket stitching to ensure it remains intact.

Step 3: Art Lessons: Computer-aided design

How can we use graphics and images to improve digital artwork?

How can we use technology to design our book sleeve?

Year 4 Design & Technology

Unit of Learning: Book Sleeve

D&T School Theme: Textiles - Evaluating Fastenings

Teaching Sequence for this Unit.

What fastenings are being used in this room?

What does the fastening do?

How secure is it?

How does it fasten two pieces of fabric?

A

TK

Why are design criteria useful?

What would be the key criteria for designing a sleeve to fit a book?

Can we see these in the sample images of book sleeves?

Who will we make our book sleeve for?

What colours, materials, images and characters might we use?

A

D

TK

Can we create a detailed design sheet for our book sleeve?

Does it include measurements, colours, decorations, joining techniques and a clear fastener?

D

TK

Why is it useful to make and test and template before starting the final product?

Do the joins work? Is the shape the same as my design? Is the template big enough to fit a book inside?

Can we use the template to cut out our fabric?

M

TK

Can we use a range of techniques to assemble, join and decorate our product?

What will you assemble first? What needs to be attached to what? What will be the best way to attach each part? What must you consider when sewing?

M

TK

How many of the design criteria need to be met for the product to be successful?

How many points have you met?

E

Focus for Disciplinary Knowledge

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