

Design and Technology 2023-24

Year 1		
Autumn	Spring	Summer
<p>Theme: Mechanisms: Sliders and levers How can you make a picture move? Concept: Know common uses of sliders Know different methods to create card sliders Know how sliders can create simple mechanisms Be able to design and make a slider product Be able to evaluate the success of their outcomes and recommend improvements.</p> <p>Theme: Structures Freestanding structures How can you stop a tower from falling over? Concept: Know a freestanding structure is a structure that stands on its own foundations or a base without attachment to anything else Be able to build structures that are freestanding using a range of different materials.</p>	<p>Theme: Food and Nutrition Exploring Food senses How does food affect your senses? Concept: Know why colourful food can be healthier Know how different foods can affect the senses Be able to peel, chop and grate a selection of vegetables Be able to modify food to suit food senses</p> <p>Theme: Understanding Materials Selecting materials Can you build with bread? Concept: Know building materials have different properties which enable them to be used for different purposes Be able to identify, sort and select materials that can be used in construction Be able to combine materials</p>	<p>Theme: Textiles Joining techniques How can two squares of fabric keep you warm? Concept: Know fabric can be joined together using a running stitch Know the types and names of tools required for sewing Be able to create a running stitch Be able to select tools for sewing Be able to thread a needle</p> <p>Theme: Food and Nutrition Vitamins in food Why are vegetables best? Concept: Know the importance of including a range of vegetables in a diet Be able to peel, grate, season and breadcrumb a range of vegetables</p>
Year 2		
Autumn	Spring	Summer
<p>Theme: Structures Developing strength in structures How strong is a piece of paper Concept: Know paper becomes stronger when it's folded</p>	<p>Theme: Mechanisms Axles and wheels Are bigger wheels always better? Concept: Know how wheels and axles work together</p>	<p>Theme: Food and Nutrition Processed food How healthy is your food? Concept: Know the difference between fresh and ultra-processed foods</p>

<p>Know a load is the amount of weight a structure must carry Be able to fold paper to increase strength and stability Be able to test and record how much weight paper can hold</p> <p>Theme: Food and Nutrition Nutrients and the body What does healthy mean? Concept: Know why vegetables are so important to our health Know what processed foods are Be able to prepare a range of salad vegetables Be able to shape and season a bread snack</p>	<p>Know the size and position of wheels affects how they move Be able to create a simple wheel mechanism Be able to use wheel mechanisms to propel a simple vehicle</p> <p>Theme: Understanding Materials Manipulating materials How can you waterproof a hat? Concept: Know materials can be modified to become waterproof Know origami comes from the Japanese words: ori-folding and kami-paper Be able to make paper waterproof Be able to transform flat paper by folding and creasing to form a hat</p>	<p>Be able to shape and form ingredients to make delicious food Be able to use a range of culinary techniques</p> <p>Theme: Textiles Exploring shape using a template How can you repurpose an item of clothing? Concept: Know how to cut out shapes which have been created by using a template Know how to use a range of basic sewing skills Be able to use a template to transfer a pattern Be able to cut and join fabric shapes using a template</p>
Year 3		
Autumn	Spring	Summer
<p>Theme: Textiles Stiffening and strengthening fabric How can you make a box out of cloth? Concept: Know fabric can be stiffened Know stiffened fabric can hold Be able to select and apply solutions to stiffen fabric Be able to make a box using stiffened fabric</p> <p>Theme: Food and Nutrition Individual diets What do we mean by a balanced diet?</p>	<p>Theme: Mechanisms Leavers and linkages-mechanical advantages How can you do a lot of work with little effort? Concept: Know types of levers and linkages- Know how levers and linkages can change the direction of movement. Be able to design and make simplistic lever and linkage products</p> <p>Theme: Food and Nutrition Food as medicine</p>	<p>Theme: Systems How things are powered? How are things powered? Concept: Know different types of energy Know how designers need to carefully consider energy sources Be able to identify how things are powered Be able to suggest appropriate energy sources for design problems</p> <p>Theme: Structures Spanning gaps What makes a bridge strong?</p>

<p>Concept: Know what is meant by the term balanced</p> <p>Know why fresh foods are better</p> <p>Be able to make a fruit and yoghurt dessert</p> <p>Be able to make homemade chips</p> <p>Be able to flavour foods to increase their sensory qualities</p>	<p>How does food affect your body and mind?</p> <p>Concept: Know food can help body and mind</p> <p>Know how to prepare and cook a range of vegetables</p> <p>Be able to peel and grate a range of vegetables</p> <p>Be able to add flavour and texture to foods</p>	<p>Concept: Know bridges are structures that allow people and vehicles to cross over an open space</p> <p>Know towers, piers and arches provide strength to a bridge</p> <p>Be able to design and build a beam bridge that can hold the weight of 100 pennies</p> <p>Be able to identify and name parts of a bridge</p>
Year 4		
Autumn	Spring	Summer
<p>Theme: Structures</p> <p>Designing structures using a frame to make them stronger and sturdier</p> <p>Which shapes will give a structure stability?</p> <p>Concept: Know triangles provide stability in a structure Theme:</p> <p>Theme: Mechanisms</p> <p>Hinges</p> <p>How many ways are there to open a door?</p> <p>Concept: Know types of hinges and the related terminology</p> <p>Know common uses for hinges</p> <p>Be able to make a variety of model hinges</p> <p>Be able to make and evaluate hinged products using modelling materials</p>	<p>Theme: Textiles</p> <p>Fixings and Fastenings</p> <p>How do you keep a tea towel from slipping off a hook?</p> <p>Concept: Know fastenings have different functions</p> <p>Know a shank provides a small amount of space between the button and fabric</p> <p>Be able to select appropriate fastenings and attach them to fabric</p> <p>Be able to make a shank for a button</p> <p>Food and Nutrition</p> <p>Ultra processed food</p> <p>What's really in your food?</p> <p>Concept: Know processed foods have many added ingredients</p> <p>Be able to make, shape and roll bread dough</p> <p>Be able to make soup</p>	<p>Theme: Electrical Systems</p> <p>Switches and circuits revisited</p> <p>How useful are switches?</p> <p>Concept: Know a switch is an interruption in a circuit</p> <p>Know switches are widely used in a range of products</p> <p>Be able to incorporate different types of switches into circuits to perform a function</p> <p>Theme: Food and Nutrition</p> <p>Benefits of fresh food</p> <p>Is cheap food always worse for you?</p> <p>Concept: Know that cheap processed food often contains additives, salt and sugar, which makes it less healthy than unprocessed food</p> <p>Be able to peel, grate and chop vegetables to make economical, tasty and healthy food</p>

	<p>Know structural engineers work with architects to ensure structures withstand forces</p> <p>Be able to make triangles to form and join trusses</p> <p>Be able to identify the forces that affect structures</p>	
Year 5		
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<p>Theme: Food and Nutrition Food choices Why are our diets so different? Concept: Know some foods and key ingredients from other cultures Know how other cultures' foods can be nutritious Be able to make, roll and cook a flatbread Be able to prepare a range of vegetables Be able to present foods to a high standard</p> <p>Theme: Systems Using technology to design and control How can we keep ourselves safe on the road? Concept: Know technology can be used to program and control a product Be able to combine elements of their design knowledge to fulfil a brief</p>	<p>Theme: Textiles Durability of fabric Which fabric is ideal for creating a functional and hard wearing lunch bag? Concept: Know how to waterproof cotton fabric Know which fabrics are both functional and hard wearing Be able to use beeswax to waterproof fabric Be able to repurpose a pair of jeans</p> <p>Theme: Mechanisms Pulleys and gears-transferring rotational force How can you lift a car onto a roof? Concept: Know types of gears and terminology relating to gears Know common uses of pulleys and gears Know how pulleys and gears can change the direction of movement</p>	<p>Theme: Food and Nutrition Cultural influences on diet What can you learn from different cultures' diets? Concept: Know how foods can be used as medicines Know how eating foods from different countries can help us be healthy Be able to roll and shape ingredients Be able to slice and ribbon a range of vegetables.</p> <p>Theme: Structures Developing structures that are fit for purpose How are frames strengthened, reinforced and made rigid? Concept: Know engineers use a range of methods to strengthen and reinforce structures Be able to identify and describe ways that frames are strengthened and reinforced</p>

	Be able to design and make products that use pulleys and gears to lift loads	
Year 6		
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<p>Theme: Food and nutrition Multicultural influences on food Can street food save us? Concept: Know what street foods are Know how snacks can be good foods to eat Be able to make a burrito Be able to make and roll bread dough Be able to make a savoury pastry</p> <p>Theme: Mechanisms Pulleys and gears- rotary and linear movement How do pulleys and gears let you see the world? Concept: Know types of pulley systems and gears Know common uses of pulleys and gears Know how pulleys and gears can create simple mechanisms and change direction of m Be able to design and make a model Ferris wheel powered by gears- Be able to evaluate the success of their outcomes and recommend improvements</p>	<p>Theme: Food and nutrition Food and Mood Does food affect the way you feel? Concept: Know the difference between slow release and quick release carbohydrates Know how food can improve mood and energy levels Be able to dice, slice, peel, grate and cook a range of vegetables Be able to make a sauce and a stock Be able to use height and colour to improve the visual appeal of food</p> <p>Theme: Structures Designing structures revisited- combining skills and knowledge How strong is a piece of spaghetti? Concept: Know structures can be supported with guy lines and flying buttresses Know the shorter the piece of spaghetti, the stronger it will be Be able to construct a flying buttress to support a tower Be able to use appropriate lengths of spaghetti to increase strength and stability</p>	<p>Theme: Electrical Systems Complex switches and circuits Can switches perform more than one function? Concept: Know more than one switch can be used to change functionality of a product Be able to use switches to adapt a product in response to a design brief</p> <p>Theme: Textiles Sustainable materials How can you reduce, recycle, repurpose? Concept: Know plastic waste can be recycled and repurposed into practical, useful items Be able to make a crochet hook out of a chopstick Be able to use plastic bags and snack packets to create practical items</p>

