

Design and Technology Knowledge Progression 'At Worthington We Will Know...'

	Mechanisms	Food
Nursery	How can I make Jack climb up the beanstalk?	What do people eat at Chinese New Year?
	I know scissors are used to cut paper I know I can fold paper in different ways I can use glue to join paper together. I know how to make Jack move up the beanstalk with a folder mechanism	I can taste different foods I can talk about different foods I can say which foods I like and don't like
	Vocabulary Draw, design, move, connect, paint, join, mechanism	Vocabulary Taste, fortune cookies, like, dislike, sour, sweet, bitter
Reception	How can I help the baby owl get back to his mum?	How do we make vegetable soup?
	I know what a simple pulley is. I know that a pulley can be used to move objects.	I know vegetables are a plant we can eat. I know vegetables can be grown. I know the names the vegetables and equipment used - carrot, potato, leek, onion, knife chopping board, peeler.
	Vocabulary Pulley, pull and split pin	Vocabulary carrot, potato, leek, onion, knife chopping board and peeler
Year One	How can we make a picture move?	Which fruit make the best fruit kebabs?
	I know books and pictures can have moving parts. I know a slider mechanism can move the part in a horizontal or vertical straight line. I know a lever mechanism moves around a pivot and can move in a curved line.	I know fruits are a plant we can eat. I know we can grow fruits on a farm or at home. I know the names of the fruits – strawberry, melon, apple, banana. I know the equipment, we will need to use – knife, skewer, colander, chopping board.
	Vocabulary moving parts, mechanism, split pin, lever, slide, join, design, evaluate, movement, horizontal, vertical, circular, arc, hinge and pivot.	Vocabulary Fruit, strawberry, melon, apple, banana, knife, skewer, colander and chopping board.
Year Two	How do wheels and axles make a vehicle move?	What makes a healthy snack?
	I know that motorbikes, cars, lorries are types of vehicles. I know that windows, doors, wipers, mirrors, engines and seats are the main features of a vehicle. I know what wheels, axles and chassis are.	I know about foods from different food groups (Fruit and vegetables, Carbohydrates, Proteins, Dairy and Fats and oils). I know how to select and use kitchen equipment (knife, chopping board, spoon, scoop and fork) to suit a task.

	I know that wheels, axles and chassis the parts that make a vehicle move. I know 2 ways of attaching wheels to axles.	I know how to safely prepare ingredients.
	Vocabulary: Vehicle, bus, wheels, axles, chassis, evaluate and design.	Vocabulary Ingredients, dips, dippers, food groups, healthy, fruit and vegetables, Carbohydrates, Proteins, Dairy and Fats and oils
Year Three	How can moving mechanisms make a poster more appealing?	Which foods need to be included to make a healthy sandwich?
	I know why it is important to investigate and evaluate mechanical systems. I know how to make mechanical systems which use levers and linkages. I know how to develop design criteria to help me design innovative product. I know I need to use prototypes to develop my ideas. I know to Accurately measure and cut materials such a cardboard, paper and corrugated card. I know how to following instructions to join mechanisms accurately.	I know that food can be divided into different groups and that sandwiches can form part of a healthy diet. I know a range of healthy sandwiches to appeal to a wide target audience. I know how to develop a design criterion to help me design a product I know to use prototypes to develop my ideas. I know the correct tools and equipment to use to make my finished product I know how to evaluate a finished product.
	Vocabulary mechanism, levers, linkages, input, output, split-pins, design brief, design criteria and prototypes.	Vocabulary food groups, carbohydrates, protein, fats, fruit, vegetables, vitamins, minerals, design brief, design criteria and evaluate.
Year Four	Electronics Unit: Can you make an alarm system to guard a treasure?	Can you plan and make a Mexican dish?
	I know what an alarm system is and what they are used for. I know the components needed to make an alarm work successfully (wire, battery, bulb, buzzer and motor) I know how different types of switches are activated. I know how to create an alarm system. I know how to use the key vocabulary to evaluate a product.	<u>Knowledge</u> America's diverse climate regions affect the food they grow. Chillies have been used in cooking in Central and Southern America for thousands of years. Mexican food is heavily influenced by food from other cultures.
	Vocabulary Switches, components, activated	Vocabulary Diverse, climates, indigenous, staple foods, cultural, influenced, cuisine, regions, traditional, trade and significance.
Year Five	What features do I need to make a motorised moving vehicle?	Can you alter ingredients when making bread?

	I know a motorised vehicle needs to have a circuit and a pulley mechanism. I know a motorised vehicle must have: Motor Driving pulley Drive belt Driven pulley Wheels Axles Bearings I know circuits contain a motor, switch, battery and wires.	I know the names of some bread and their origins – Bagels (polish) soda bread (Ireland) Baguette (France) Naan and Chapatti (India) Pitta Bread (Middle East). I know why I need to wash my hands and have a clean area before handling food. I know that bread is a carbohydrate. I know Carbohydrates give us energy and are an important part of our diet. I know many people eat bread as part of a balanced diet. I know which ingredients are needed to make bread and how ingredients can be altered and mixed to create different effects. I know that flour, yeast, salt, warm water, butter are the ingredients to make a bread dough. I know that yeast makes the dough rise, a bread product without yeast is unleavened bread. I know that you can add sweet and savoury ingredients to alter to taste and texture.
	Vocabulary Prototype, motorised, circuit, design criteria, pulley, electric, Driving pulley, Drive belt, Driven pulley ,Wheels, Axles,Bearings, motor, switch, battery and wires.	Vocabulary safety, hygiene, evaluate, origin, balanced diet, carbohydrate, ingredients, aesthetics, texture, yeast, energy, alter and knead
Year Six		Can burgers be a healthy option?
	See Structures Unit.	I know what constitutes a burger (bread, protein, vegetables, sauce) and understand the origins. I know what are appropriate alternatives for various ingredients (meat replacement). I know what is meant by 'healthy' food and give reasons why. I know what nutrients and food groups are. I know how varying the cooking technique (SUCH AS) can alter nutritional value.
	Vocabulary	Vocabulary Carbohydrates, protein, vitamins, nutrients, adapt, alternative, nutrition, calories and joules.

	Structures	Textiles
Nursery	How are boats made?	What is a Diva lamp and how is it used?
	I can name the main features of a pirate ship such as mast, sail, deck. I know how choose the right materials to make a pirate ship. I can join materials together using junk modelling to create a pirate ship.	I can say what a Diva lamp is I can model clay into a ball I can use a simple tool to make a pattern I know how to mould a Diva lamp out of clay and make patterns in it using a modelling tool
	Vocabulary draw, paint, illustrator, Axel Scheffler, make, design, float, sink, join, stick	Vocabulary Diwali, Diva lamp, clay, mould, squeeze, poke, pattern, paint
Reception	How can I make a model of my house?	How can I make a clay poppy ?
	I know a house needs a roof, windows and a door.	I can talk about the colours and materials needed to make a poppy I can model clay into a ball of the right size I know how to mould a poppy out of clay and attach to a stick
	Vocabulary Roof, window, door, glue, scissors and tape	Vocabulary Poppy, mould, attach,
KS1 Year One Year Two	How can we make our photo frames stable?	How can we join fabric?
	I know how to make a free-standing structure stable. I know different attachment techniques – Flange, L-Brace, Tabs, Slot. I know I can decorate a picture frame using different materials (feathers, sequins, ribbon, buttons, paper). I know I can stick materials using glue.	I know there are different types of puppets (sock, hand, rod and finger). I know that puppets are controlled by someone. I know puppets can be made from different materials. I know that fabrics are joined together using different techniques - running stitch, glue, over stitch, stapling.
	Vocabulary	Vocabulary

	Stable, stiff, stiffer, stiffest, strong, stronger, strongest build, structure, stable, rigid, flange, LBrace, tabs, slot, feathers, sequins, ribbon, buttons and felt-tips.	Marionette, sock puppet, hand puppet, rod puppet, finger puppet, template, sew, stitch, join, thread, needle, running stitch, cutting, measure, over stitch.
LKS2 Year Three Year Four	What materials would be used to build a mini greenhouse?	Is appearance more important than function?
	A greenhouse is used for creating a microclimate, controlling the temperature and humidity to help plants grow. A structure is stable, if it is steady, strong and safe. It is not likely to collapse or fall over. By adding art straws, triangular corner pieces and adding card to weaker sections of a structure it will make a structure more stable.	I know how to name and identify the materials such as felt, fleece, cotton, hessian and cotton. I know the design features of different Christmas stockings such as sequins, shapes cut from felt and stitching. I know how to thread a needle, tie a knot and do a running stitch/over stitch./back stitch I know that adding different materials to my stocking will add decoration.
	Vocabulary Ventilate, stable, structure, transparent	Vocabulary cross stitch, running stitch, felt, fabric, function, visual appeal and trim.
UKS2 Year Five Year Six	How can you build a bridge and how make it move?	What type of stitching is suitable for a phone case?
	I know the difference between a pillar and beam (a pillar refers to any isolated, vertical structural member such as a pier, column, or post. A beam is a structural element that is capable of bearing load principally by resisting against bending). I know how to explore ways in which pillars and beams are used. I know what a span gap is (a gap is a space between two things or a hole in the middle of something solid how to span gaps). I know how to use span gaps. I know what a truss is (an assembly of members such as beams, connected by nodes, that creates a rigid structure). I know ways in which trusses can be used I know how to strengthen bridges. I know what an arch is (a curved symmetrical structure spanning an opening that supports the weight of the bridge above). I know how to explore ways in which arches are used I know how to strengthen bridges.	I know the purpose of a phone case is to protect a phone and to make it aesthetically pleasing. I know a phone case must be durable A seam is when two pieces of fabric are joined together and then folded apart. I know that a back stitch makes a join stronger. I know a blanket stitch is a decorative stitching.

I know what a suspension bridge is (a bridge in which the weight of the deck is supported by vertical cables suspended from further cables that run between towers and are anchored in abutments at each end).

I know how to understand how suspension bridges are able I know how to span long distances. I know how to use the key vocabulary to evaluate a product.

Vocabulary

Pillar, beam, span, truss, arch, suspension, prototype, deck, pier, abutment, compression and tension.

Vocabulary

Needle, thread, seam, blanket stitch, back stitch, durable,