Hunton C of E Primary School
Life in all its fullness - John 10:10

Progression of Knowledge in Design Technology

Topics			
Devas	**Bannerman**	**Porteous**	**Borton**
Textiles - Making Stockings Mechanisms – Moving Pictures Food – Fruit Aliens	**Cycle A** Construct a Windmill (structures) Making a Monster (mechanisms) Fruit and Vegetables (cooking & nutrition) **Cycle B** Making a Puppet (textiles) Wheels and Axles (mechanisms) A Balanced Diet (cooking & nutrition)	**Cycle A** Construct a Castle (structures) Pneumatic Toys (mechanisms) Eating Seasonally (cooking & nutrition) **Cycle B** Making a cushion (textiles) Slingshot Car (mechanisms) Adapting a Recipe (cooking & nutrition)	**Cycle A** Bridges (structures) Automata Toys (mechanisms) What Could Be Healthier? (cooking & nutrition) **Cycle B** Waistcoats (textiles) Make a Steady Hand Game (mechanisms) Come Dine With Me (cooking & nutrition)

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Technical Knowledge- Mechanisms

Devas	Bannerman		Porteous		Borton	
40-60+ months I know there are a range to different materials that can be used to make a product and that they are all slightly different. I know some simple suggestions that could fix my product. I know a mechanism is the part of an object that moves together. I know a slider mechanism moves an object side to side. **ELG** **Communication and Language; Listening, Attention and Understanding** - Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions - Make comments about what they have heard and ask questions to clarify their understanding	**Cycle A** I know that the shape of materials can be changed to improve the strength and stiffness of structures. I know that cylinders are a strong type of structure. I am beginning to know that different structures are used for different purposes. I know that a structure is something that has been made and put together. I know that a linkage mechanism is made up of a series of levers I know that an output is the movement that happens as a result of the input. I know that a lever is something that turns on a pivot. I know that mechanisms are a collection of moving parts that work together as a machine to produce movement. I know that there is always an input and output in a mechanism.	**Cycle B** I know that an input is the energy that is used to start something working. I know that axles are used in structures and mechanisms to make parts turn in a circle. I know that wheels need to be round to rotate and move. I know that for a wheel to move it must be attached to a rotating axle. I know that an axle moves within an axle holder which is fixed to the vehicle or toy. I know that the frame of a vehicle (chassis) needs to be balanced.	**Cycle A** I know that wide and flat based objects are more stable. I know the importance of strength and stiffness in structures. I know how pneumatic systems work. I know that pneumatic systems can be used as part of a mechanism. I know that pneumatic systems operate by drawing in, releasing and compressing air.	**Cycle B** I know that mechanisms control movement**.** I know that a slider mechanism moves an object from side to side and has a slider, slots, guides and an object. I know that bridges and guides are bits of card that purposefully restrict the movement of the slider. I know how to use sliders, pivots and folds to create paper-based mechanisms**.**	**Cycle A** I know that structures can be strengthened by manipulating materials and shapes I know that the mechanism in an automata uses a system of cams, axles and followers. I know that different shaped cams produce different outputs.	**Cycle B** I know that batteries contain acid, which can be dangerous if they leak. I know the names of the components in a basic series circuit, including a buzzer.

Joy Compassion Respect Perseverance

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Tool	**Mechanism, input, mechanical, lever, linkage, motion, output,**	**Axle, axle holder, chassis, mechanic, mechanism, model, wheel,**	**Diagram, evaluate Feedback, housing Linkage, mechanical system Mechanism, pivot pneumatic system thumbnail sketch**	**Chassis, energy Kinetic, mechanism air resistance design, structure graphics, research model, template**	**Gear, gear system, pulley, pulley system, teeth, linkage, structure, automata**	**Insulator, conductor, circuit symbol, buzzer (see links to science electricity)**

Cooking and Nutrition

Devas	Bannerman		Porteous		Borton	
40-60+ months - I know the difference between fruits and vegetables. - I know fruits grow on trees or vines. - I know vegetables can grow above or below the ground. - I know names of some common fruits. - I know that different fruits taste different. - I know that a fruit has seeds. - I know that eating fruit is good for me. - I know that vegetables can come from different parts of the plant. - I know why different packages might be used for different foods. **ELG** **Communication and Language;** **Listening, Attention and Understanding** - -Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions - Make comments about what they have heard and ask questions to clarify their understanding **Managing Self**	**Cycle A** I know the difference between fruits and vegetables. I know that some foods typically known as vegetables are actually fruits (e.g. cucumber). I know that a blender is a machine which mixes ingredients together into a smooth liquid. I know that a fruit has seeds and a vegetable does not. I know that fruits grow on trees or vines. I know that vegetables can grow either above or below ground. I know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).	**Cycle B** I know that 'diet' means the food and drink that a person usually eats. I know where to find the nutritional information on packaging. I know that the five main food groups are: carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. I know that I should eat a range of different foods from each food group. I know that nutrients are substances in food that all living things need to make energy, grow and develop. I know 'ingredients' are the items in a mixture or recipe.	**Cycle A** I know that not all fruits and vegetables can be grown in the UK. I know that climate affects food growth. I know that vegetables and fruit grow in certain seasons. I know that cooking instructions are known as a 'recipe'. I know imported food has been brought into the country. I know exported food has been sent to another country. I know that imported foods travel from far away which can negatively impact the environment.	**Cycle B** I know that the amount of an ingredient in a recipe is known as the 'quantity.' I know that it is important to use oven gloves when removing hot food from an oven. I know the following cooking techniques: sieving, creaming, rubbing method, cooling. I know the importance of budgeting while planning ingredients for biscuits.	**Cycle A** I know where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues. I know that I can adapt a recipe to make it healthier by substituting ingredients. I know that I can use a nutritional calculator to see how healthy a food option is. I know that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.	**Cycle B** I know that 'flavour' is how a food or drink tastes. I know that many countries have 'national dishes' which are recipes associated with that country. I know that 'processed food' means food that has been put through multiple changes in a factory. I know that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides.

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- Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.		I know I should only have a maximum of five teaspoons of sugar a day to stay healthy. I know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'.	I know that fruit and vegetables give us nutritional benefits because they contain vitamins, minerals and fibre. I know safety rules for using, storing and cleaning a knife safely.			I know what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).
Fruit, vegetables, tool, blade	**Healthy, ingredients, recipe, blender, blend, flavour, root, leaf, stem,**	**design brief, appearance, menu, prepare, diet, balanced, dairy, carbohydrates, proteins**	**Appearance, arid , climate , complementary, country Export, fruit, grate Import, ingredients Mediterranean**	**Adapt, addition ,appearance ,budget ,buttery, combine Comment, compare Construct, cream Crunchy, cuboid**	**Cross- contamination, balanced, abattoir, nutrition, nutritional value, process**	**Bridge method, complement, 'farm to fork', reared, umami**

Structures and Textiles

Devas	Bannerman		Porteous		Borton	
40-60+ months - I know in DT we call a plan a 'design.' I know that a design is a way of planning my idea before I start. - I know that threading is putting one material through an object. - I know that 'joining technique' means connecting two pieces of material together. **ELG** **Communication and Language;** **Listening, Attention and Understanding:** - Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions - Make comments about what they have heard and ask questions to clarify their understanding **Communication and Language; Speaking**: - Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary	**Cycle A** I know the importance of a clear design criteria. I know that a client is the person I am designing for. I know that design criteria is a list of points to ensure the product meets the clients' needs and wants. I know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity. I know that windmill turbines use wind to turn and make the machines inside work.	**Cycle B** I know that 'joining technique' means connecting two pieces of material together. I know that there are various temporary methods of joining fabric by using staples. glue or pins. I know that different techniques for joining materials can be used for different purposes. I know that a template (or fabric pattern) is used to cut out the same shape multiple times.	**Cycle A** I know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose. I know that a façade is the front of a structure. I know that a castle needed to be strong and stable to withstand enemy attack. I know that a paper net is a flat 2D shape that can become a 3D shape once assembled. I know that a design specification is a list of	**Cycle B** I know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. I know that when two edges of fabric have been joined together it is called a seam. I know that it is important to leave space on the fabric for the seam. I know that some products are turned inside out after sewing so the stitching is hidden. I know that a design brief is a description of what I am going to design and make.	**Cycle A** I know what a 'footprint plan' is. I know that in the real world, design, can impact users in positive and negative ways. I know that a prototype is a cheap model to test a design idea. I know that an automata is a hand powered mechanical toy. I know that a cross-sectional diagram shows the inner workings of a product.	**Cycle B** I know blanket stitch can reinforce the edges of a fabric material or join two pieces of fabric. I know that soft toys are often made by creating appendages separately and then attaching them to the main body. I know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely. I know that 'form' means the shape and appearance of an object.

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- Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate. **Expressive Arts and Design; Creating with Materials** - Share their creations, explaining the process they have used.	I know that a windmill is a structure with sails that are moved by the wind. I know the three main parts of a windmill are the turbine, axle and structure I know some real-life objects that contain mechanisms.	I know that drawing a design idea is useful to see how an idea will look.	success criteria for a product. I know how pneumatic systems work. I know that pneumatic systems can be used as part of a mechanism. I know that pneumatic systems operate by drawing in, releasing and compressing air.	I know that designers often want to hide mechanisms to make a product more aesthetically pleasing.	I know how to use a bench hook and saw safely. I know that a set square can be used to help mark 90° angles.	I know that 'fit for purpose' means that a product works how it should and is easy to use. I know that form over purpose means that a product looks good but does not work very well. I know the diagram perspectives 'top view', 'side view' and 'back'.
Needle, thread, pattern, materials	**Rotate, rotor blades, sails, structure, windmill, stable, equal, design, test, evaluate**	**Fabric, template, stencil, shape, sew, running stitch, knot, decorate**	**2D,3D, castle, Design, key features Net, scoring, shape Stable, stiff, strong Structure, tab**	**3D shapes, cladding, design criteria, innovative, natural, reinforce, structure**	**Right angles, set square, automata, configuration, bench hook, coping saw,**	**Appendage, blanket-stitch, stuffing, fabric, running stitch, knot**