

Design Technology Progression of Knowledge and Skills Document

<u>Subject Area</u>	<u>Concept/Aspect</u>	<u>Nursery</u>	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>
Humankind	Everyday Products	Skill -Name and explore a range of everyday products and explore how things work. Core Knowledge - Some books have moving parts.	Skill - Name and explore a range of everyday products and begin to talk about how they are used. Broad Knowledge -Everyday products are objects that we use every day. These objects have a specific use.	Skill - Name and explore a range of everyday products and describe how they are used. Core Knowledge - An axle is a rod that is connected to the centre of a wheel, which allows it to turn. -A chassis is the frame of a vehicle. -A shelter is a structure designed to give protection from weather or danger.	Skill - Explain how an everyday product could be improved. Core Knowledge - There are many home products made from fabric. -Examples of fabric based products in the home include cushions, curtains, blinds and carpets. -Products can be improved in different ways, such as making them easier to use, more hardwearing or more attractive.
Humankind	Staying Safe	Skill -Show an understanding that tools and equipment need to be used safely and collaborate with others when moving large equipment. Broad Knowledge -It is important to listen to adults and follow simple rules and procedures when using equipment and tools.	Skill -Follow rules and instructions to keep safe. Core Knowledge - Rules keep us safe when using equipment.	Skill - Follow the rules to keep safe during a practical task. Core Knowledge - Rules are made to keep people safe from danger. -Safety rules include always listening carefully, following instructions and using equipment only when told to.	Skill -Work safely and hygienically in construction and cooking activities. Core Knowledge - Hygiene rules include washing hands before handling food, cleaning surfaces, tying long hair back, storing food appropriately and wiping up spills.
Processes	Mechanisms and Movement	Skill -Explore, build and play with a range of resources and construction kits with wheels. Core Knowledge - Lots of vehicles have wheels to help them move.	Skill - Explore, build and play with a range of resources and construction kits with wheels and axles. Core Knowledge - Vehicles and machines have wheels and axles to help them move. -Wheels help vehicles move.	Skill -Use wheels and axles to make a simple moving model. Core Knowledge - Most vehicles that move on land have axles and wheels that are fixed to a chassis. -An axle fixed to a chassis has freely moving wheels. -A freely moving axle has fixed wheels.	Skill -Use a range of mechanisms (levers, sliders, wheels and axles) in models or products. Core Knowledge - People build machines to make their work easier. -A machine is made up of different parts that all work together to perform a task. -Individual parts of a machine are

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			An axle is a rod that goes through the middle of the wheel to help it stay in place. -Vehicles have wheels and axels to help them move.		called components. -The part of a machine that brings about movement is called the mechanism. -A slider mechanism moves in a straight line. -Real-life examples of slider mechanisms include door bolts and drawers. -A lever mechanism is a bar that moves around a fixed point called a pivot. -Real-life uses of levers include scissors and seesaws. -A linkage mechanism combines levers and sliders. -Real-life uses of linkages include toolboxes and scissor lifts.
Processes	Electricity	Skill -Explore battery-powered objects using switches to turn them off and on. Broad Knowledge - Batteries power some objects. A switch turns them off and on.	Skill -Identify products that use electricity to make them work. Core Knowledge - Microwaves, toasters and blenders are machines. Machines need power to make them work.	Skill - Identify products that use electricity to make them work and describe how to switch them on and off. Broad Knowledge - Electricity is a form of energy. Many household appliances use electricity, such as kettles, televisions and washing machines. They can be switched on by completing the circuit to allow the flow of electricity or off by breaking the circuit to prevent electricity from flowing. This can be a switch on the appliance or a wall socket switch.	Skill - Create an operational, simple series circuit. Broad Knowledge - A series circuit is made up of an energy source, such as a battery or cell, wires and a bulb. The circuit must be complete for the electricity to flow.
Creativity	Generation of Ideas	Skill - Develop their own ideas and explore a variety of resources, including blocks and construction	Skill - Create collaboratively, share ideas and use a variety of resources to make products inspired by existing	Skill - Create a design to meet simple design criteria.	Skill - Generate and communicate their ideas through a range of different methods.

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		kits to create 'small worlds' and objects linked to their interests.	products, stories or their own ideas, interests or experiences. Core Knowledge - It is important to share resources and communicate our ideas in order to get on with others.	Core Knowledge - A product or project is usually guided by a set of design criteria. -The project or product must meet the design criteria to be successful.	Broad Knowledge - Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.
Creativity	Structures	Skill - Make simple structures using a range of materials. Core Knowledge - A bridge is a structure that crosses a space. -There are lots of different materials. Wood, stone and pebbles are hard strong.	Skill - Construct simple structures and models using a range of materials. Core Knowledge - A bridge is a structure that allows people and vehicles to cross over an open space. -There are lots of different types of puppets. Some puppets have moving parts. -There are lots of different types of puppets including finger puppets.	Skill - Construct simple structures, models or other products using a range of materials. Core Knowledge - Different materials can be used for different purposes, depending on their properties.	Skill - Explore how a structure can be made stronger, stiffer and more stable. Core Knowledge - Structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares.
Creativity	Use of ICT	Skill - Seek support from adults to use digital devices to create a digital record of their creations. Core Knowledge - A camera or tablet can be used to take photographs.	Skill - Use digital devices to take digital images or recordings of their creations to share with others. Broad Knowledge - Digital devices can be used to share information about creations with others.	Skill - Use design software to create a simple plan for a design. Broad Knowledge - Computer-aided design is when computers are used to help design products. It has advantages over paper design in that it will show how finished products will look. Different colours and textures can also be trialled.	Skill - Use design software to create a simple labelled design or plan. Broad Knowledge - Computer software can be used to help design or plan a product. Advantages include identifying and solving problems before the product is made and experimenting with different materials and colours. Labels can be added to designs for clarity.
Investigation	Investigation	Skill - Explore simple tools within practical tasks and experiment with joining materials.	Skill - Choose and explore appropriate tools for simple practical tasks.	Skill - Select the appropriate tool for a simple practical task.	Skill - Select the appropriate tool for a task and explain their choice.

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		Broad Knowledge - Tools have different purposes. For example, scissors are used for cutting and glue is used for sticking.	Core Knowledge - There are different ways to join materials together. -Sewing is stitching things using a needle and thread.	Core Knowledge - Some foods need to be prepared before eating. -Peeling, slicing, chopping, grating, tearing or mashing are different methods of preparing foods.	Core Knowledge - Tools have characteristics that make them suitable for specific purposes. For example, a knife is good for cutting food because it has a sharp metal edge.
Investigation	Evaluation	Skill - Share their creations with others and respond to questions and suggestions about how it was made. Broad Knowledge - Different aspects of designing and making can be discussed with others.	Skill - Adapt and refine their work as they are constructing and making. Broad Knowledge - Recognise that it is possible to change and alter their designs and ideas as they are making them.	Skill - Talk about their own and each other's work, identifying strengths or weaknesses and offering support. Core Knowledge - A strength is something that is good about a piece of work. -A weakness is an area that could be improved.	Skill - Explain how closely their finished products meet their design criteria and say what they could do better in the future. Core Knowledge - A finished product can be checked against design criteria to see how successfully it has been made or to evaluate how well it works. -Improvements can then be planned.
Materials	Cutting and Joining Textiles			Skill - Cut and join textiles using glue and simple stitches. Core Knowledge -A running stitch is made by passing a needle in and out of fabric. -Running stitches are made at equal distances apart.	Skill - Use different methods of joining fabrics, including glue and running stitch. Core Knowledge - A running stitch is a basic stitch used to join two pieces of fabric.
Materials	Materials for Purpose	Skill - Explore and choose freely from a variety of materials when making.	Skill - Select appropriate materials when constructing and making. Broad Knowledge -Different materials are suitable for different purposes, such as construction kits for modelling and ingredients for baking.	Skill - Select and use a range of materials, beginning to explain their choices. Broad Knowledge -Different materials are suitable for different purposes, depending on their specific properties. For example, glass is transparent, so it is suitable to be used for windows.	Skill - Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect. Core Knowledge - Properties of components and materials determine how they can and cannot be used.

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Materials	Decorating and Embellishing Textiles			Skill - Use gluing, stapling or tying to decorate fabric, including buttons and sequins. Core Knowledge - Decorations can be attached to fabric by gluing, stapling or tying.	Skill - Add simple decorative embellishments, such as buttons, prints, sequins and appliqué. Core Knowledge - Embellishment is a decorative detail or feature added to something to make it more attractive.
Nature	Food Preparation and Cooking		Skill - Follow instructions, including simple recipes, that include measures and ingredients. Core Knowledge - When people celebrate they sometimes eat special food. -A recipe is a set of instructions that tells us how to make food. -Recipes show us how to make meals and snacks.	Skill - Measure and weigh food items using non-standard measures, such as spoons and cups. Core Knowledge - Fruits and vegetables can be mixed to make a healthy salad. -Salad dressings can improve the flavour of salads.	Skill - Prepare ingredients by peeling, grating, chopping and slicing. Core Knowledge - A recipe is a set of instructions for preparing and cooking a meal.
Nature	Nutrition	Skill - Help to prepare a range of healthy snacks. Core Knowledge - Fruit and vegetables are healthy foods.	Skill - Suggest healthy ingredients that can be used to make simple snacks. Core Knowledge - Fruit and vegetables are healthy foods. -We need to eat at least five portions of fruit and vegetables a day. -Heating food can change its appearance, taste, texture and colour. -Fruit and vegetables are healthy food.	Skill - Select healthy ingredients for a fruit or vegetable salad. Core Knowledge - Fruit and vegetables are an important part of a healthy diet. -It is recommended that people eat at least five portions of fruit and vegetables every day.	Skill - Describe the types of food needed for a healthy and varied diet and apply the principles to make a simple, healthy meal. Core Knowledge - A healthy diet should include meat or fish, starchy foods (such as potatoes or rice), some dairy foods, a small amount of fat and plenty of fruit and vegetables.

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Nature	Origins of Food	Skill - Explore and try a range of foods and suggest where they come from. Core Knowledge - A recipe is a set of instructions that tells us how to make food.	Skill - Begin to identify the origins of some foods. Core Knowledge - Food can be from plants such as fruit, vegetables, nuts and seeds. -Animals provide meat and also produce food such as milk, eggs and honey.	Skill - Sort foods into groups by whether they are from an animal or plant source. Core Knowledge - Some foods come from animals, such as meat, fish and dairy products. -Some come from plants, such as fruit and vegetables.	Skill - Identify the origin of some common foods (milk, eggs, some meats, common fruit and vegetables). Core Knowledge -Food comes from two main sources: animals and plants. -Milk comes mainly from cows but also from goats and sheep. -Eggs belong to the animal product category. -They are laid by female animals. The most common types eaten by humans include chicken and duck eggs. -Honey is made by bees. -Most edible oils are made from plant parts. -Olive oil, vegetable oil and coconut oil are all made from plant sources. -Sugar is made from plants called sugar cane and sugar beet. -Plants also give us nuts, such as almonds, walnuts and hazelnuts.
Comparison	Compare and Contrast	Skill - Share their creations with others and begin to notice how the work of others is the same or different to their own.	Skill - Describe what, why and how something was made and compare with others. Broad Knowledge - Aspects of designing and making can be compared with others, including inspiration for making a product and the tools and techniques used.	Skill - Describe the similarities and differences between two products. Core Knowledge - Two products can be compared by looking at a set of criteria and scoring both products against each one.	Skill - Compare different or the same products from the same or different brands. Core Knowledge - A brand is a name, term, design, or symbol identifying a seller's products or services.

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Significance	Significant People	Skill - Begin to talk about important products. Broad Knowledge - Important products are those that help people.	Skill - Explore significant products. Core Knowledge - A scarecrow is a model of a person dressed in old clothes and put in a field of growing crops to frighten birds away.	Skill - Describe why a product is important. Broad Knowledge - The importance of a product may be that it fulfils its goals and performs a useful purpose.	Skill - Explain why a designer or inventor is important. Core Knowledge - School kitchen staff are important people because they design and provide healthy meals. -The Cath Kidston brand was an important British brand which began in the 1990s. -It was easily recognisable for its floral patterned fabric and use of classic British iconography including the Red London Bus and London black cab.
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