

Avonwood Primary School

DT Curriculum Policy



September 2023

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Avonwood Primary School

The best in everyone™

Part of United Learning

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1.0 Our School Vision

At Avonwood we see it as our moral imperative for all children, regardless of background, to achieve their very best. Our children all read classic literature, study modern foreign languages, experience the science of dissecting organs and even learn a new musical instrument every year as a right, not a privilege. These high expectations enable us to develop and deliver a curriculum rich in carefully sequenced and embedded powerful knowledge. We expect teachers to deliver lessons with that fulfil this expectation whilst living up to our ambition of inspiring wonder and intellectual curiosity.

Our curriculum is at the centre of every education decision we take at Avonwood. We do not see the curriculum as a finished product, far from it. On a weekly, termly and annual basis we review plans, consider our intent and make sure we deliver the very best academic and enrichment diet to our children. All curriculum areas have a subject lead that is responsible for the design, implementation and ongoing monitoring and evaluation of this area.

Avonwood has moved away from tokenistic topics towards knowledge rich experiences in discrete subjects, with deliberate cross curricular links only when appropriate. For example, in Year 2 we teach the Great Fire of London when children have already learnt in Geography where London is and its status within the United Kingdom. The awe and wonder of learning continues to characterise the Avonwood curriculum but in a purposeful, sequenced and deliberate manner.

If 'powerful knowledge' is the head of our school, then reading for pleasure and progress is its heart. Our school environment and curriculum crystallises reading for pleasure as a valued and purposeful part of our curriculum. We agree with the view of Thompson (2020) when she states the importance of becoming a reader who teachers and a teacher who reads is a pedagogy with far reaching consequences. Reading progression is carefully mapped to provide opportunities for exposure to a wide variety of genres, authors of different backgrounds and a mixture of classic and contemporary texts. Every afternoon we 'Drop Everything and Read' to end our school day with a high quality whole class reading session. We wholeheartedly believe reading is the golden key to unlocking the potential of every child's success.

We are honoured to be the only United Nations Earth Charter Primary School in Europe. We believe it is vital that all children have an understanding of their responsibility as global citizens and our eight Earth Charter principals are referenced throughout our curriculum and daily life. From the importance of peace and respect for all living creatures through to the consideration of the past and future of our planet, this ethos gives our Avonwood curriculum a very current and relevant perspective that all stakeholders within our community hold strong. This runs deep within our "Avonwood DNA" and is optimised by our school mantra... it starts with one!



1.1 How our whole school vision links with DT

At Avonwood primary school, the United Curriculum for Design and Technology and Food provides all children, regardless of their background with:

Substantive knowledge:

Ensuring pupils **master** core content through the development of **conceptual knowledge** of structures, mechanisms, materials and programming in small steps, and the timely revisiting of this key knowledge.

Ensuring that pupils are explicitly taught and have time to master **procedural knowledge**, including craftsmanship of cutting, shaping, joining and finishing as well as engineering in focused practical tasks.

Making explicit and deliberate links to other curriculum subjects – particularly science – to ensure that pupils use and apply scientific concepts in a Design & Technology setting at the appropriate time. Pupils also draw on and further develop knowledge and skills first taught in Mathematics, History, Computing and Art & Design, due to the multi-disciplinary nature of Design & Technology.

Disciplinary knowledge:

Reinforcing the **iterative design process** in the heart of every unit, and allowing pupils to build their understanding and ability to apply design values gradually from EYFS to Key Stage 2 and beyond.

Ensuring that pupils know **they are designers and engineers**, who design a solution to fit a specific user and need; they are not led by outcomes. Pupils should be encouraged to design products using all of the knowledge they have developed across the curriculum.

Explicitly teaching ways of designing, ways of generating ideas and ways of identifying user needs, to give pupils the tools they need to thrive as designers of the future.

Curiosity and excitement about the possibilities offered by Design & Technology:

Ensuring that all pupils **can see themselves reflected** in the Design & Technology curriculum, by exploring the contributions made by a wide range of designers, past and present.

Opportunities to **develop character** by understanding the difficulties faced by those designers and seeing how characteristics such as resilience and risk taking contributed towards success.

Understanding the contribution that design and technology makes to creativity, culture, wealth and the well-being of a nation and that **more opportunities exist** than ever before due to technological advances.

At Avonwood primary school, the United Curriculum for Food provides all children, regardless of their background with:

Substantive knowledge:

Ensuring pupils **master** core content through the development of **conceptual knowledge** of food sources, safety, hygiene and nutrition in small steps, and the timely revisiting of this key knowledge.

Ensuring that pupils are explicitly taught and have time to master **procedural knowledge**, including cooking skills of chopping, preparing, combining and heating in focused practical tasks.

Making explicit and deliberate links to other curriculum subjects – particularly science – to ensure that pupils use and apply scientific concepts, such as nutrition and food chains, in a Food setting at the appropriate time.

Disciplinary knowledge:

Ensuring that pupils are taught how to make **food choices** based on qualities like nutritional value; dietary requirements; cost; seasonality; food miles and carbon footprint of production; time to prepare; and quantities. These qualities are introduced in small steps but applied cumulatively so that by Year 6, pupils are able to make decisions based on a selection of them.

The ability, and desire, to cook balanced, sustainable meals for themselves and their family:

Ensuring that the recipes and foods chosen reflect relevant cuisines from the local context, the UK and around the world.

Providing recipes that are balanced and sustainable, which can be cooked after school in a family context.

2.0 Subject Intent, Implementation & Impact

2.1 Subject Intent

At Avonwood, Design and Technology aims to inspire children through a broad range of practical experiences to create innovative designs which solve real and relevant problems within a variety of different contexts. The United Curriculum for Food and Design Technology has three strands: Conceptual knowledge; Procedural knowledge and Disciplinary knowledge. As they progress through the curriculum, pupils build their understanding of conceptual concepts like nutrition and food sources as well as mechanisms; they revisit and add layers to their understanding throughout the curriculum. Opportunities are provided for children to evaluate key events and individuals who have helped shape the world, showing the real impact of design and technology on the wider environment and helping to inspire children to become the next generation of innovators. Design and Technology is taught through coherently planned sequences of lessons, ensuring progression and coverage of the knowledge, understanding and skills required in the National Curriculum.

2.2 Subject Implementation

Within the Subject

The United Curriculum for Design & Technology has been very carefully sequenced to ensure coverage and appropriate progression through substantive (conceptual and procedural) and disciplinary knowledge and ensuring that pupils create a balanced range of outcomes and are exposed to a broad range of designers. Each unit clearly sets out the knowledge that should be taught and reviewed in the sequence of lessons. Designers for each unit are provided but the implementation of knowledge also recommends that local designers are studied where appropriate. Each unit is planned to cover six 1-hour lessons; this allows time before and after the unit to fill gaps or address misconceptions as required. A sequence of four 1-hour lessons is also provided for each unit to allow for core, non-negotiable knowledge for the unit while allowing additional time to fill gaps if required. Within each lesson, content is broken down into small steps using the 'I', 'We', 'you' approach to allow for modelling, guided and independent practice.

2.3 Subject Impact

Assessing impact is assessing how well pupils have learned the required knowledge from the implemented curriculum. It is not about lots of tests, or meticulously comparing pupils' outcomes at the start and end of each unit. At Avonwood, we believe that if pupils can keep up with a well-sequenced curriculum that has progression built in, they are making progress. The United Curriculum has this progression built in, and so teachers and subject leads just need to be confident that pupils are keeping up with it.

This can be done through:

Books/products/floor books and pupil-conferencing

Talking to pupils about their work allowing teachers to assess how much of the curriculum content is secure. These conversations are used most effectively to determine whether pupils have a good understanding of the vertical concepts, and if they can link recently taught content to learning from previous units.

Formative assessment in lessons

There are opportunities for formative assessment to be implemented as part of sequences of lessons, and teachers should continually adapt their lesson delivery to address misconceptions and ensure that pupils are keeping up with the content.

3.0 Sequencing of the Avonwood DT Curriculum

3.1 EYFS

Term & Focus	National Curriculum Objectives	Knowledge	Skills	Diversity and Inclusion
<p>Autumn</p> <p>Area: Structures</p> <p>Project: Playgrounds</p>	<p>Design purposeful, functional, appealing products for themselves and others using a design criteria</p> <p>Clarify their ideas through discussion</p> <p>Learn basic joining techniques for 3D modelling using glues and masking tape</p>	<p>I know the features of a playground.</p> <p>I know what materials could be successfully used to create these features.</p> <p>I know that I need to use some sort of adhesive to create my project.</p>	<p>Design:</p> <p>I can create a design to include the different features I enjoy in a playground.</p> <p>I can discuss my design ideas with others and listen to theirs.</p> <p>Make:</p> <p>I can select different materials based on how they feel and how they can be used.</p> <p>I can join two materials/ parts together using glue or masking tape.</p> <p>I can listen and follow support and guidance.</p>	<p>Look at and discuss a range of ideas for ensuring that the playground design is inclusive, not just about being accessible but about engaging and catering for people of all ages and abilities and making sure they can all enjoy the same experiences together.</p> <p>Elements to consider:</p> <ul style="list-style-type: none"> • Multi-sensory • Accessibility • Play for all • Opportunity for calm, social environments <p>Guide to designing inclusive playground - What is an inclusive Playground? - YouTube</p>
<p>Spring</p> <p>Area: Cooking and nutrition</p> <p>Project: Fruit kebab</p>	<p>Design purposeful, functional, appealing products for themselves and other users based on design criteria</p>	<p>I know how to use a knife safely in order to cut my fruit.</p>	<p>Design:</p> <p>I can design a healthy product using ingredients that I have selected.</p> <p>Make:</p>	

	<p>Generate, develop, model and communicate their ideas through talking and drawing</p> <p>Select from and use a range of tools and equipment to perform practical tasks e.g. cutting</p> <p>Use the basic principles of a healthy and varied diet to prepare dishes</p> <p>Understand where food comes from.</p>	<p>I know about food safety and hygiene.</p> <p>I know how to hold my fruit and kebab carefully and use the bridge method to cut my fruit safely.</p> <p>I know about the importance of a balanced diet.</p>	<p>I can use kitchen equipment carefully and safely.</p> <p><u>Evaluate:</u> I can try different fruits to see if I would like to include them in my final design.</p> <p><u>Technical knowledge:</u> I can explain where different foods come from. I can use the basic principles of a healthy and varied diet.</p>	
<p>Summer</p> <p>Area: Mechanisms - wheels and axis</p> <p>Project: Construct a moving vehicle-</p>	<p>Design purposeful, functional, appealing products for themselves and others using a design criteria</p> <p>Clarify their ideas through discussion</p> <p>Select and use appropriate materials and components</p> <p>Explore and use mechanisms [e.g wheels and axles], in their products.</p>	<p>I know that a moving vehicle requires parts that move.</p> <p>I know I will need to explore different materials in order to find one suitable for this project.</p>	<p><u>Design:</u> I can explore different materials and select one most appropriate for the project. I can create a design which fits the criteria and can discuss my ideas with others.</p> <p><u>Make:</u> I can apply my knowledge of wheels and axis to create my moving vehicle.</p> <p><u>Evaluate:</u></p>	

			<p>I can look at moving vehicles on a smaller scale and see how they move along.</p> <p><u>Technical knowledge:</u></p> <p>I can use wheels and axles in my final product.</p>	
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3.2 Year 1

Term & Focus	Prior Learning	Knowledge to be explicitly taught.		Building on knowledge
<p>Autumn 2</p> <p>Area: Food</p> <p>Project: Eat a Rainbow</p> <p>Preparing a colourful fruit salad and crudites.</p>	<p>Science: A plant is a living thing that grows in one place. A tree is a type of plant. (Y1 Aut1)</p> <p>Science: The basic parts of plant include leaves, flowers, roots, stem (or trunk). (Y1 Aut1)</p> <p>Eating a range of fruits and vegetables. (EYFS)</p>	<p style="text-align: center;">Conceptual</p> <p>Food Sources: Fruits and vegetables come from plants (including trees). Fruits contain a plant's seeds. Vegetables are part of the plant. Food can come from farms, allotments and gardens. Fruits and vegetables are usually harvested in a particular season. Different foods are in season at different times of the year.</p> <p>Nutrition & Eating: We should eat 5 portions of fruit or vegetables each day. 'Eating a rainbow' means to different types of fruits and vegetables, that might have lots of different colours. Fruits and vegetables both contain lots of good things for our bodies. Fruits contain more sugar, so we should eat less of them.</p> <p>Food Safety & Hygiene: Store dairy products in the fridge. Wash hands and tie hair back to stop the tiny living things on our hands getting onto the food and into our bodies. Wear an apron to protect our clothes and stop the tiny living things on them getting into food and into our bodies.</p>	<p style="text-align: center;">Procedural</p> <p>Prepare: Wash and drain fruits. Chop using the claw technique. Chop a range of foods, including bananas, grapes, strawberries, cucumber and prepared pears, pineapple, peppers and carrots. Peel bananas, satsumas. Measure dry foods and liquids using a teaspoon and tablespoon.</p> <p>Combine & Assemble: Stir with wooden spoon. Use fruit juice to prevent browning.</p> <p>Work in the Kitchen: Follow simple recipes. Wash up items by removing excess food, washing, rinsing and drying.</p>	<p style="text-align: center;">Conceptual</p> <ul style="list-style-type: none"> • Food Sources: Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat and dairy products). (Y2) • Nutrition & Eating: Humans need to eat a healthy and balanced diet. This should include all the nutrients that we need, should be high in fruits and vegetables and low in fats, salt and sugars. (Y2) • Food Safety & Hygiene: Tie hair back and wash hands after sneezing, coughing and going to the toilet to stop the tiny living things on our hands getting into our bodies. (Y2) <p style="text-align: center;">Procedural</p> <ul style="list-style-type: none"> • Prepare: Chop a wider range of foods, using the bridge technique. (Y2) • Combine & Assemble: Dress a salad using utensils. (Y2) • Work in the Kitchen: Wash up items in the most appropriate order, starting with least dirty, and change washing up water as required. (Y4)

Term & Focus	Prior Learning	Knowledge to be explicitly taught.		Building on knowledge
<p>Spring</p> <p>Area: Mechanisms</p> <p>Project: Moving Pictures</p> <p>Using simple linkages (levers) to make a moving picture for someone at home.</p>	<p>Science: Materials can be artificial (man-made) or natural. (Y1 Spr1)</p> <p>Science: Materials include woods, paper, rubber, plastics, metals, fabrics, glass, rock, water. (Y1 Spr1)</p> <p>Science: Materials have different properties and are used to make different objects. (Y1 Spr1)</p> <p>Science: Physical properties of materials include hard/soft, dull/shiny, rough/smooth. (Y1 Spr1)</p> <p>Marking out: Use a pencil and ruler to mark out the position of holes and straight lines before shaping them. (Y1 Spr)</p> <p>Shaping: Shape paper and card with scissors. (Y1 Spr)</p> <p>Joining: Use glue sticks and folding to join materials. (Y1 Spr)</p> <p>Design Values: Use shared design criteria based on the values of Visual Appeal; Materials; Function. (Y1 Spr)</p> <p>Evaluate: Evaluate products according to the design criteria. (Y1 Spr)</p> <p>Make, Test, Iterate: Designing is about trying something and seeing what works, and then trying again. (Y1 Spr)</p>	Conceptual	Procedural	<p>Conceptual</p> <p>Mechanisms: A buggy has a body, wheels, axles, axle holders and chassis. Axles can be fixed or free. (Y2 Spr1)</p> <p>Science: Mechanisms can change the direction of the force or reduce the amount of force required to do work. (Y5 Sum1)</p> <p>Mechanisms: A pulley is a simple mechanism with a grooved wheel that spins on an axle. A drive belt transfers movement from one pulley to another. (Y5 Sum2)</p> <p>Mechanisms: A cam changes the direction of movement from rotary to reciprocal. (Y5 Sum2)</p> <p>Disciplinary</p> <p>Design Values: Use design criteria based on the values of Inclusivity and Accessibility. (Y1 Sum)</p> <p>Identify User Needs: Use interviews to identify user needs. (Y1 Sum)</p> <p>Communicate Designs: Draw simple design ideas and label them. (Y2 Sum)</p>
		<p>Mechanisms: A mechanism makes changes movement or makes movement easier. A mechanism has an input and an output. A lever is a simple mechanism. It is a rigid beam that pivots (turns). A slider is a simple mechanism. It is a rigid beam that moves back and forth on a straight line. A linkage is a system of links that are joined together to control movement. A lever is an example of a linkage.</p> <p>D&T Shaping the World: Examples of levers in everyday life include see-saws, wheelbarrows, door handles and scissors. Artists often create art for its own sake. Designers create things that are useful and have a purpose.</p>	<p>Marking out: Use a pencil and ruler to mark out the position of holes and straight lines before shaping them. Shaping: Make holes using a hole punch, and by using a sharp pencil and adhesive putty (Blu Tack). Shaping: Shape paper, card and aluminium foil with scissors. Joining: Use a split pin, glue sticks and folding to join materials, and adhesive putty to temporarily join materials. Finishing: Finish products with decorations using colouring pencils and decorations made or sources from a computer.</p> <p>Disciplinary</p> <p>Design Values: Use shared design criteria based on the values of Visual Appeal; Materials; Function. Identify User Needs: Make choices about the specific users and purpose of a product. Evaluate: Evaluate products according to the design criteria. Make, Test, Iterate: Designing is about trying something and seeing what works, and then trying again. Communicate Designs: Contribute to a class storyboard that shows a process for making.</p>	

Term & Focus	Prior Learning	Knowledge to be explicitly taught.		Building on knowledge
Summer Area: Structures Project: Outdoor Space Designing an outdoor space and creating a 3D model to share the design.	Science: Materials can be artificial (man-made) or natural. (Y1 Spr1) Science: Materials include woods, paper, rubber, plastics, metals, fabrics, glass, rock, water. (Y1 Spr1) Science: Materials have different properties and are used to make different objects. (Y1 Spr1) Science: Physical properties of materials include hard/soft, dull/shiny, rough/smooth. (Y1 Spr1) Marking out: Use a pencil and ruler to mark out the position of holes and	Conceptual	Procedural	<u>Conceptual</u> Making structures more stable and stronger (Y2 Spr1, Y3 Aut1) Shell structures and frame structures (Y4 Spr) <u>Disciplinary</u>
		Structures: 2D shapes have a length and width. 3D shapes have a length and width and height. Free-standing structures can be made stronger with stiffer materials, thicker materials, or with more layers of material (laminating). Free-standing structures can be made more stable by having a wider base or a heavier base.	Shaping: Shape plasticine using rolling pins and basic craft tools. Shaping: Shape plastic sheets, pipe cleaners and art straws. Joining: Use PVA glue, sellotape and masking tape to join materials.	

	<p>straight lines before shaping them. (Y1 Spr)</p> <p>Shaping: Shape paper and card with scissors. (Y1 Spr)</p> <p>Joining: Use glue sticks and folding to join materials. (Y1 Spr)</p> <p>Design Values: Use shared design criteria based on the values of Visual Appeal; Materials; Function. (Y1 Spr)</p> <p>Evaluate: Evaluate products according to the design criteria. (Y1 Spr)</p> <p>Make, Test, Iterate: Designing is about trying something and seeing what works, and then trying again. (Y1 Spr)</p>	<p>Materials: Materials include woods, paper, card, rubber, plastics, metals, fabrics, glass, rock, water, plasticine/clay.</p> <p>D&T Shaping the World: Architects are artists and designers who design buildings. Architects make models of spaces like towns to help them plan them. (Link to local area if possible).</p>	<p>Design Values: Use design criteria based on the values of Inclusivity and Accessibility.</p> <p>Identify User Needs: Use interviews to identify user needs.</p> <p>Generate Ideas: Take photographs and use these as inspiration.</p> <p>Communicate Designs: A model is a way of showing a design idea in 3D.</p> <p>Communicate Designs: When designers communicate their ideas, they need to be drawn at the right size.</p> <p>Communicate Designs: Talk about simple design ideas with others.</p>	<p>Design Values: Use design criteria based on the value of the Making Process.</p> <p>Identify User Needs: Identify a user's needs in a specific context when they have a problem, through observing and through a 'user trip'. (Y3 Spr)</p> <p>Generate Ideas: Use a wider range of techniques to generate ideas.</p> <p>Communicate Designs: Draw simple design ideas and label them. (Y2 Sum)</p>
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3.3 Year 2

Term & Focus	Prior Learning	Knowledge to be explicitly taught.		Building on Knowledge
<p>Autumn</p> <p>Area: Food</p> <p>Project: Salads</p> <p>Preparing healthy, balanced salads that include proteins.</p>	<p>Science: Some plants grow from bulbs. A bulb is a resting stage for certain plants. (Y2 Aut1)</p> <p>Food Sources: Fruits and vegetables come from plants (including trees). Fruits contain a plant's seeds. Vegetables are part of the plant. (Y1)</p> <p>Food Sources: Food can come from farms, allotments and gardens. (Y1)</p> <p>Food Sources: Fruits and vegetables are usually harvested in a particular season. (Y1)</p> <p>Nutrition & Eating: Fruits and vegetables both contain lots of good things for our bodies. Fruits contain more sugar, so we should eat less of them. (Y1)</p> <p>Science: Humans need to eat a healthy and balanced diet. This should include all the nutrients that we need, should be high in fruits and vegetables and low in fats, salt and sugars. (Y2 Aut2)</p> <p>Food Safety & Hygiene: Wash hands, tie hair back and wear an apron to stop the tiny living things on our hands and clothes getting onto the food and into our bodies. (Y1)</p> <p>Prepare: Chop a range of foods using the claw technique.</p> <p>Work in the Kitchen: Follow simple recipes and wash up items by removing excess food, washing, rinsing and drying. Make food choices based on colour and quantity of sugar.</p>	<p style="text-align: center;"><u>Conceptual</u></p> <p>Food Sources: Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat and dairy products). Milk comes from animals like cows, sheep, and goats. Foods made from animal milks are called dairy products. Some foods are eaten as they are (e.g. milk; fruits and vegetables). Some foods are processed in some way before we eat them (e.g. cheese is made from milk).</p> <p>Nutrition & Eating: Vegetarians choose not eat animal meat. Vegans do not eat any animal product. They eat milks and cheeses made from plants. Some foods are sweet, and some are salty. Texture is about how food feels in our mouths. Food textures include hard, soft, rough, smooth, crunchy, crispy, chewy, creamy. Food is more interesting to eat if it has more than one texture at a time.</p> <p>Food Safety & Hygiene: Tie hair back and wash hands after sneezing, coughing and going to the toilet to stop the tiny living things on our hands getting into our bodies.</p>	<p style="text-align: center;"><u>Procedural</u></p> <p>Prepare: Remove the outer leaves of lettuce and wash and drain them. Use senses (sight, smell and touch) to check foods for any bits that should not be eaten. Use a colander or sieve to drain canned foods. Chop using the claw and bridge technique. Chop a range of foods, including the above plus tomatoes, lettuce, feta and prepared cheddar. Peel and grate carrots.</p> <p>Combine & Assemble: Dress salad using two utensils and layer food on a bed of salad.</p> <p style="text-align: center;"><u>Disciplinary</u></p> <p>Make food choices based on colour and quantity of sugar, plus quantities of fat and salt, and dietary requirements (vegans and vegetarians).</p>	<p style="text-align: center;"><u>Conceptual</u></p> <p>Food Sources: Foods can be minimally processed (like fresh fruit and vegetables); moderately processed (like cheese and flour); significantly processed (like baked beans); or ultra-processed (like ready meals; sugary cereals and crisps). (Y6)</p> <p>Nutrition & Eating: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. (Sci Y3 Spr1)</p> <p>Food Safety & Hygiene: The difference between 'best before' and 'use by' (Y3)</p> <p style="text-align: center;"><u>Procedural</u></p> <p>Prepare: Chop an increasingly complicated selection of foods (e.g. onions, peppers).</p> <p style="text-align: center;"><u>Disciplinary</u></p> <p>Make food choices based on Y1-2 plus knowledge of food allergies. (Y3)</p>

<p>Spring</p> <p>Area: Mechanisms</p> <p>Project: Wheels and Axles</p> <p>An engineering project to design a buggy that rolls straight and smoothly.</p>	<p>Science: Materials have different properties and are used to make different objects. (Y1 Spr1)</p> <p>Science: Physical properties of materials include hard/soft (Y1 Spr1), malleable/not malleable, windproof/not windproof. (Y2 Spr1)</p> <p>History: The wheel was an important invention in the development of transport. (Y1 Spr)</p> <p>Materials: Materials include woods, paper, card, rubber, plastics, metals, fabrics, glass, rock, water, plasticine. (Y1 Sum)</p> <p>Mechanisms: A mechanism has an input and an output and changes movement or makes it easier (Y1 Spr)</p> <p>D&T Shaping the World: Artists often create art for its own sake. Designers create things that are useful and have a purpose. (Y1 Spr).</p> <p>Marking out: Use a pencil and ruler to mark out the position of holes and straight lines before shaping them. (Y1 Spr)</p> <p>Shaping: Shape paper and card (Y1 Spr) and pipe cleaners and art straws with scissors. (Y1 Sum)</p> <p>Shaping: Make holes using a hole punch, and by using a sharp pencil and adhesive putty. (Y1 Spr)</p> <p>Joining: Use glue sticks (Y1 Spr), PVA glue, sellotape and masking tape to join materials. (Y1 Sum)</p> <p>Design Values: Use shared design criteria based on the values of Visual Appeal; Materials; Function (Y1 Spr) Inclusivity and Accessibility. (Y1 Sum)</p> <p>Evaluate: Evaluate products according to the design criteria. (Y1 Spr)</p> <p>Make, Test, iterate: Designing is about trying something and seeing what works, and then trying again. (Y1 Spr)</p>	<p style="text-align: center;"><u>Conceptual</u></p> <p>Mechanisms: A moving buggy will include the body, wheels, axles, axle holders, and chassis. There are two types of axle: fixed and free. Fixed axles attach to the chassis. Free axles are not attached to the chassis and can spin within the chassis.</p> <p>Structures: Triangulation makes structures stronger and more stable.</p> <p>D&T Shaping the World: Artists often create art for its own sake. Designers create things that are useful and have a purpose. Engineers are scientists who use their knowledge to make things that work like bridges and cars.</p>	<p style="text-align: center;"><u>Procedural</u></p> <p>Shaping: Shape wooden lollipop sticks. Joining: Use pre-drilled push fit items to join them, and sticky pads to join materials.</p> <p style="text-align: center;"><u>Disciplinary</u></p> <p>Generate Ideas: Use ‘what if’ questions to generate ideas. Make, Test, Iterate: Designers and engineers build prototypes to test and improve their products.</p>	<p style="text-align: center;"><u>Conceptual</u></p> <p>Science: Mechanisms can change the direction of the force or reduce the amount of force required to do work. (Y5 Sum1)</p> <p>Mechanisms: A pulley is a simple mechanism with a grooved wheel that spins on an axle. A drive belt transfers movement from one pulley to another. (Y5 Sum2)</p> <p>Mechanisms: A cam changes the direction of movement from rotary to reciprocal. (Y5 Sum2)</p> <p style="text-align: center;"><u>Procedural</u></p> <p>Shaping and joining using a wider range of materials and techniques.</p> <p style="text-align: center;"><u>Disciplinary</u></p> <p>Generate Ideas: Use premade templates, ‘draw and fold’, story books and personal photographs to inspire designs and creative ideas. (Y2 Sum)</p> <p>Make, Test, Iterate: When using textiles, designers make a pattern from paper to test before making the final product. (Y2 Sum)</p>
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	<p>Science: It is important that we keep as much as we can the same, apart from the thing we measure and the one thing we change. (Y2 Spr1)</p>			
<p>Summer</p> <p>Area: Materials</p> <p>Project: Glove Puppets</p> <p>Creating props to tell a story to children in EYFS.</p>	<p>Science: Materials can be artificial (man-made) or natural. (Y1 Spr1)</p> <p>Science: One way to use materials more sustainably is to reduce, reuse and recycle wherever possible. (Y2 Spr1)</p> <p>Science: Sustainability means meeting the needs of the people today while meeting the needs of people in the future. (Y2 Spr1)</p> <p>Science: Physical properties of materials include rough/smooth. (Y2 Spr1)</p> <p>Shaping: Make holes using a hole punch and shaping paper and card with scissors. (Y1 Spr)</p> <p>Design Values: Use shared design criteria based on the values of Visual Appeal; Materials; Function (Y1 Spr) Inclusivity and Accessibility. (Y1 Sum)</p> <p>Identify User Needs: Make choices about the specific users of a product. (Y1 Spr)</p> <p>Evaluate: Evaluate products according to the design criteria. (Y1 Spr)</p> <p>Make, Test, Iterate: Designing something, see what works, and then try again. (Y1 Spr)</p>	<p>Mechanisms:</p> <p>Materials:</p> <p>Materials - including different types of fabric - have different properties and are used to make different objects.</p>	<p>Conceptual</p> <p>Marking out: Temporarily fix a template or pattern to a material using pins and paperclips, and use chalk to mark out shapes before cutting them.</p> <p>Marking out: Position patterns on fabrics in a way that reduces waste.</p> <p>Shaping: Shape fabric using scissors, and use rubber bands to shape materials.</p> <p>Joining: Use stapes and fabric glue to join materials.</p> <p>Joining: Thread a needle and join fabrics using a running stitch.</p> <p>Joining: Use a seam allowance to make sure that the patterns keep their shape.</p> <p>Joining: Hide a seam by joining 'right sides together'.</p> <p>Finishing: Finish fabrics by decorating with buttons, pipe cleaners or other pieces of fabric.</p> <p>Disciplinary</p> <p>Design Values: Use design criteria based on the value of the Making Process.</p> <p>Identify User Needs: Contribute to design criteria by using approximate measurements (of the hand).</p> <p>Generate Ideas: Use premade templates, 'draw and fold', story books and personal</p>	<p>Conceptual</p> <p>Science: Materials have chemical and physical properties. (Y4 Sum2)</p> <p>Procedural</p> <p>Joining: Sew using a back stitch, and use press studs, hook-and-eyes, buttons and tying with ribbon to join fabrics. (Y3 Spr)</p> <p>Finishing: Finish fabrics using a blanket stitch. (Y3 Spr)</p> <p>Disciplinary</p> <p>Design Values: Use shared design criteria based on the value of Sustainability (and the whole life cycle of the product). (Y3 Aut)</p> <p>Identify User Needs: Identify a user's needs in a specific context when they have a problem, through observing and through a 'user trip'). (Y3 Spr)</p> <p>Generate Ideas: Use a wider range of techniques to generate ideas.</p>

			<p>photographs to inspire designs and creative ideas.</p> <p>Make, Test, Iterate: When using textiles, designers make a pattern from paper to test before making the final product.</p> <p>Communicate Designs: Draw simple design ideas and label them.</p>	
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3.4 Year 3

Term & Focus	Prior Learning	Knowledge to be explicitly taught.		Building on Knowledge
<p>Autumn</p> <p>Area: Structures</p> <p>Project: Picture Frames</p> <p>Picture frames that would be made and sold in a commercial context</p>	<p>Materials: Materials - including different types of fabric - have different properties and are used to make different objects.</p> <p>Science: Physical properties of materials include hard/soft, dull/shiny, rough/smooth, waterproof/not waterproof, heatproof/not heatproof, windproof/not windproof, absorbent/not absorbent. (Y2 Spr1)</p> <p>Marking out: Temporarily fix a pattern to a material using pins (positioning them to reduce waste), and mark out using chalk. (Y2 Sum)</p> <p>Shaping: Shape lollipop sticks, pipe cleaners and fabric using hole punch and scissors. (Y1 Spr)</p> <p>Joining: Use glue, stapes, running stitch to join fabrics, using a seam allowance and sewing 'right sides together'. (Y2 Sum)</p> <p>Finishing: Finish fabrics by decorating with buttons, pipe cleaners or other pieces of fabric. (Y2 Sum)</p> <p>Design Values: Use shared design criteria based on the values of Visual Appeal; Materials; Function (Y1 Spr); Inclusivity and Accessibility (Y1 Sum); Making Process (Y2 Sum); and Sustainability. (Y3 Aut)</p> <p>Identify User Needs: Identify design criteria through approximate measurements. (Y2 Sum)</p> <p>Evaluate: Evaluate products according to the design criteria. (Y1 Spr)</p> <p>Generate Ideas: Use photographs, 'what if' questions and storybooks to inspire ideas.</p>	<p style="text-align: center;"><u>Conceptual</u></p> <p>Design Values: Develop own, individual design criteria based on design values.</p> <p>Identify User Needs: Identify a user's needs in a specific context, when they have a specific problem, through observations.</p> <p>Identify User Needs: Identify a user's needs through a 'user trip' (doing the task that the user needs to do).</p> <p>Generate Ideas: Use constraints (e.g. max A5 page), Zwicky tables, and inspiration from nature to generate ideas.</p>	<p style="text-align: center;"><u>Procedural</u></p> <p>Mechanisms:</p> <p>Joining: Sew using a back stitch, and use press studs, hook-and-eyes, buttons and tying with ribbon to join fabrics.</p> <p>Finishing: Finish fabrics using a blanket stitch.</p>	<p style="text-align: center;"><u>Procedural</u></p> <p>Joining: Join fabrics using an over stitch. (Y6 Aut)</p> <p>Finishing: Release tension by snipping along a curved seam. (Y6 Aut)</p> <p>Finishing: Make minor adjustments to ensure a good fit. (Y6 Aut)</p> <p style="text-align: center;"><u>Disciplinary</u></p> <p>Design Values: Develop own design criteria based on the value of</p> <p>Necessity: do we really <i>need</i> to design this product? (Y6 Spr1)</p> <p>Identify User Needs: Develop design criteria with exact measurements. (Y6 Aut)</p> <p>Generate Ideas: Use 'quick draw eights' to generate ideas. (Y4 Sum2)</p>

	<p>Make, Test, Iterate: Designing something, see what works with the pattern, and then try again. (Y1 Spr)</p> <p>Communicate Designs: Draw simple design ideas and label them. (Y2 Sum)</p>			
<p>Spring</p> <p>Area: Materials</p> <p>Project: Keeping it Contained</p> <p>Picture frames that would be made and sold in a commercial context</p>	<p>Materials: Materials - including different types of fabric - have different properties and are used to make different objects.</p> <p>Science: Physical properties of materials include hard/soft, dull/shiny, rough/smooth, waterproof/not waterproof, heatproof/not heatproof, windproof/not windproof, absorbent/not absorbent. (Y2 Spr1)</p> <p>Marking out: Temporarily fix a pattern to a material using pins (positioning them to reduce waste), and mark out using chalk. (Y2 Sum)</p> <p>Shaping: Shape lollipop sticks, pipe cleaners and fabric using hole punch and scissors. (Y1 Spr)</p> <p>Joining: Use glue, stapes, running stitch to join fabrics, using a seam allowance and sewing 'right sides together'. (Y2 Sum)</p> <p>Finishing: Finish fabrics by decorating with buttons, pipe cleaners or other pieces of fabric. (Y2 Sum)</p> <p>Design Values: Use shared design criteria based on the values of Visual Appeal; Materials; Function (Y1 Spr); Inclusivity and Accessibility (Y1 Sum); Making Process (Y2 Sum); and Sustainability. (Y3 Aut)</p> <p>Identify User Needs: Identify design criteria through approximate measurements. (Y2 Sum)</p>	<p><u>Conceptual</u></p>	<p><u>Procedural</u></p> <p>Joining: Sew using a back stitch, and use press studs, hook-and-eyes, buttons and tying with ribbon to join fabrics.</p> <p>Finishing: Finish fabrics using a blanket stitch.</p> <p><u>Disciplinary</u></p> <p>Design Values: Develop own, individual design criteria based on design values.</p> <p>Identify User Needs: Identify a user's needs in a specific context, when they have a specific problem, through observations.</p> <p>Identify User Needs: Identify a user's needs through a 'user trip' (doing the task that the user needs to do).</p> <p>Generate Ideas: Use constraints (e.g. max A5 page), Zwicky tables, and inspiration from nature to generate ideas.</p>	<p><u>Procedural</u></p> <p>Joining: Join fabrics using an over stitch. (Y6 Aut)</p> <p>Finishing: Release tension by snipping along a curved seam. (Y6 Aut)</p> <p>Finishing: Make minor adjustments to ensure a good fit. (Y6 Aut)</p> <p><u>Disciplinary</u></p> <p>Design Values: Develop own design criteria based on the value of</p> <p>Necessity: do we really <i>need</i> to design this product? (Y6 Spr1)</p> <p>Identify User Needs: Develop design criteria with exact measurements. (Y6 Aut)</p> <p>Generate Ideas: Use 'quick draw eights' to generate ideas. (Y4 Sum2)</p>

	<p>Evaluate: Evaluate products according to the design criteria. (Y1 Spr)</p> <p>Generate Ideas: Use photographs, 'what if' questions and storybooks to inspire ideas.</p> <p>Make, Test, Iterate: Designing something, see what works with the pattern, and then try again. (Y1 Spr)</p> <p>Communicate Designs: Draw simple design ideas and label them. (Y2 Sum)</p>			
<p>Summer</p> <p>Area: Food</p> <p>Project: Sandwiches and Packed Lunches</p> <p>Making sandwiches with a balance of proteins fats & carbohydrates.</p>	<p>Food Sources: Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat and dairy products).</p> <p>Nutrition & Eating: Vegetarians choose not eat animal meat. Vegans do not eat any animal product. (Y2)</p> <p>Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. (Y3 Spr1)</p> <p>Food Safety & Hygiene: Wear an apron and tie hair back (Y1) and wash hands after sneezing, coughing and going to the toilet to stop the tiny living things on our hands getting into our bodies. (Y2)</p> <p>Prepare: Chop a range of foods using the claw (Y1) and bridge (Y2) technique. Use senses (sight, smell and touch) to check foods for any bits that should not be eaten. (Y2)</p> <p>Work in the Kitchen: Follow simple recipes and wash up items by removing excess food, washing, rinsing and drying.</p> <p>Make food choices based on colour and quantity of sugar, plus quantities of fat and salt, and dietary requirements (vegans and vegetarians).</p>	<p>Conceptual</p> <p>Food Sources: Bread is made from flour, which is ground seeds of the wheat plant. Sources of meat include chicken, sheep (lamb), pigs (pork products), tuna and other fish.</p> <p>Nutrition & Eating: Some people are allergic to certain types of food, like nuts or gluten. This means their body reacts when the eat or are in contact with these foods. Some food allergies are mild, and some can be very serious.</p> <p>Food Safety & Hygiene: Food should not be eaten after the 'use by' date. Foods can be eaten after the 'best before' date, but we should check them first. High risk foods with a 'use by' date should be kept in the fridge. Hands should be washed after handling raw eggs to stop the tiny things living in there getting into our bodies, because they can make us unwell.</p>	<p>Procedural</p> <p>Prepare: Chop a range of foods, including the above plus hard-boiled eggs and cheddar. Peel hard-boiled eggs.</p> <p>Combine & Assemble: Stir with a teaspoon or tablespoon. Spread butter / margarine with a knife.</p> <p>Cook: Use a hob to boil (an egg).</p> <p>Work in the Kitchen: Independently maintain a clean and organised workspace.</p> <p>Disciplinary</p> <p>Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; plus, knowledge of food allergies.</p>	<p>Conceptual</p> <p>Food Sources: Knowledge of where other foods come from, such as pasta is made from wheat flour and water (and sometimes egg). (Y5)</p> <p>Nutrition & Eating: Some people are intolerant to certain types of food, like gluten or dairy products. This means their bodies cannot digest the foods. It can cause discomfort. (Y4)</p> <p>Food Safety & Hygiene: The tiny living things that we need to stop getting into food are bacteria and viruses. They can sometimes make us unwell. (Sci Y6 Spr2)</p> <p>Procedural</p> <p>Prepare: Chop an increasingly complicated selection of foods (e.g. onions, peppers).</p> <p>Cook: Use a hob to boil other foods (vegetables and pasta) and to sauté and simmer.</p> <p>Work in the Kitchen: Wash up items in the most appropriate order, starting with least dirty, and change washing up water as required. (Y4)</p>

				<p style="text-align: center;"><u>Disciplinary</u></p> <p>Make food choices based on Y1-3 plus knowledge of food miles. (Y4)</p>
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3.5 Year 4

Term & Focus	Prior Learning	Knowledge to be explicitly taught.		Building on knowledge
<p>Autumn 2</p> <p>Area: Food</p> <p>Project: Soup</p> <p>Cooking vegetables and grains and combining into healthy soups.</p>	<p>Food Sources: Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat and dairy products).</p> <p>Nutrition & Eating: Vegetarians choose not eat animal meat. Vegans do not eat any animal product. (Y2) Some people are allergic to foods, which means their body as a reaction when they eat them. (Y3)</p> <p>Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. (Y3)</p> <p>Food Safety & Hygiene: Wear an apron and tie hair back (Y1) and wash hands after sneezing, coughing and going to the toilet to stop the tiny living things on our hands getting into our bodies (Y2). Food should not be eaten after the 'use by' date. Foods can be eaten after the 'best before' date, but we should check them first. (Y3)</p> <p>Prepare: Chop a range of foods using the claw (Y1) and bridge (Y2) technique. Use senses (sight, smell and touch) to check</p>	<p style="text-align: center;">Conceptual</p> <p>Food Sources: Beans and lentils are edible seeds from plants. Seasoning adds to the taste of food. Seasoning can include salt, spices (like pepper), herbs, and sugar. Spices are usually made from the seeds, roots, stem or fruits of a plant and add flavour to food. Herbs are usually the leaves of a plant and add flavour to food. Mushrooms are not plants nor animals. They are a type of fungus.</p> <p>Nutrition & Eating: Some people are intolerant to certain types of food, like gluten or dairy products. This means their bodies cannot digest the foods. It can cause discomfort.</p> <p>Food Safety & Hygiene: Hobs and hand blenders need to be used with care, keeping our fingers away. When blending hot liquids, the blender should be on and/or it is kept well away from the user. Food preparation sources should be wiped down before and after use to stop the tiny living things on the surfaces getting onto food.</p>	<p style="text-align: center;">Procedural</p> <p>Prepare: Chop a range of foods, including the above plus hard-boiled eggs and cheddar. Peel hard-boiled eggs. Combine & Assemble: Stir with a teaspoon or tablespoon. Spread butter / margarine with a knife. Cook: Use a hob to boil (an egg). Work in the Kitchen: Independently maintain a clean and organised workspace.</p>	<p>Conceptual</p> <p>Food Sources: Knowledge of where other foods come from, and how they can be minimally, moderately, significantly or ultra processed. (Y6)</p> <p>Nutrition & Eating: A healthy diet is made up of mostly minimally and moderately processed foods. Too many ultra-processed foods should be avoided. (Y6)</p> <p>Food Safety & Hygiene: The tiny living things that we need to stop getting into food are bacteria and viruses. They can sometimes make us unwell. (Sci Y6 Spr2)</p>
			<p style="text-align: center;">Disciplinary</p> <p>Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; knowledge of food allergies; plus food miles.</p>	

	<p>foods for any bits that should not be eaten. (Y2)</p> <p>Mathematics: Measure and compare volume/capacity (ml/l). (Y3)</p> <p>Cook: Use a hob to boil (an egg). (Y3)</p> <p>Work in the Kitchen: Follow simple recipes and wash up items by removing excess food, washing, rinsing and drying (Y2), and independently maintain a clean and organised workspace (Y3).</p> <p>Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; and knowledge of food allergies</p>	<p>Food preparation areas should be left clean so that food pests are not attracted</p>		<p><u>Procedural</u> Prepare: Chop an increasingly complicated selection of foods (e.g. onions), and incorporate estimation skills into measurements. Combine & Assemble: Use a blender or hand-held blender. (Y5) Cook: Use an oven to roast vegetables. (Y5)</p>
<p>Spring</p> <p>Area: Mechanisms</p> <p>Project: Pulleys</p> <p>Using pulleys and levers to create a video that shares a message.</p>	<p>Mechanisms: A mechanism has an input and an output and changes movement or makes it easier (Y1 Spr)</p> <p>Mechanisms: A lever is a simple mechanism. It is a rigid beam that pivots (turns). A slider is a simple mechanism. It is a rigid beam that moves back and forth on a straight line. (Y1 Spr)</p> <p>Mechanisms: A linkage is a system of links that are joined together to control movement. (Y1 Spr)</p> <p>Mechanisms: There are two types of axle: fixed and free. (Y2)</p> <p>Mathematics: Use a ruler to measure and mark lengths in centimeters. (Y4)</p> <p>Shaping: Make a hole using a bradawl and cut materials using a junior hacksaw. (Y3 Aut)</p>	<p>Mechanisms: A pulley is a simple mechanism. It is a grooved wheel that spins on an axle.</p> <p>A drive belt transfers movement from one pulley to another.</p> <p>A cam changes the direction of movement from rotary to reciprocal.</p> <p>A spring is an energy store. It stores energy that can be transferred to a different energy store (link to Y5 Sci Aut)</p> <p>Pulleys can redirect forces, or reduce the force required to lift heavy objects.</p> <p>Structures:</p> <p>A shell structure has a continuous outer 'shell' and do not have a frame, like an egg shell or a dome in a building.</p> <p>A frame structure is made from separate pieces of material called members that form a frame, like climbing frames or houses.</p>	<p>Shaping: Cut modelling wire with pliers and shape wooden dowel with a junior hacksaw.</p>	<p>Science: Energy stores are needed for something to happen. Energy can be transferred from one store to another, but it cannot be created or destroyed. (Y5 Aut)</p> <p>Science: Force is measured in Newtons (N). (Y5 Sum1)</p> <p>Shaping with increasingly sophisticated tools. (KS3)</p>

	<p>Joining: Use a range of glues, tapes and pre-drilled push fit items to join materials.</p> <p>Finishing: Finish by using decorations/information created or sourced from a computer and/or paint.</p> <p>Finishing: File or sand to smooth. (Y4 Spr)</p> <p>Design Values: Develop own design criteria based on the values of Visual Appeal; Materials; Function; Inclusivity and Accessibility; Making Process; and Sustainability.</p> <p>Identify User Needs: Identify a user's needs in a specific context, when they have a specific problem.</p> <p>Generate Ideas: Use Zwicky tables, 'what if' questions, story books and ideas from nature to generate ideas.</p>	<p>D&T Shaping the World: Prehistoric Britons, Ancient Egyptians, Ancient Greeks, Ancient Maya, Early Islamic Civilisation used knowledge of mechanisms to make levers and pulleys. (Link to History).</p>		
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<p>Summer</p> <p>Area: Structures Programming and Control</p> <p>Project: Mood Lighting</p> <p>Using nets and circuits to program lighting</p>	<p>Structures: 2D shapes have a length and width. 3D shapes have a length and width and height. (Y1 Sum)</p> <p>Structures: Free-standing structures can be made stronger with stiffer materials, thicker materials, or laminating. Free-standing structures can be made more stable by having a wider base or a heavier base. (Y1 Sum)</p> <p>Structures: Triangulation makes structures and joints stronger and more stable (Y3 Aut)</p> <p>Structures: Shell and frame structures (Y4 Spr)</p> <p>Science: Physical properties of materials include hard/soft, dull/shiny, rough/smooth, transparent/translucent/opaque, good electrical conductor/poor electrical conductor (insulator). (Y1 to Y4 Sum1)</p> <p>Science: A complete circuit has at least one cell and at least one functioning component connected in a continuous loop. A short circuit is a circuit with just a cell and no other components. They can be dangerous. Electrical components include: wire, lamp, buzzer, motor and switch. Electrical appliances should be</p>	<p>Structures: Frame and shell structures can be made by folding 2D nets.</p> <p>Programming (if not taught in Computing): Electronic control systems have inputs, outputs and a central processor. A process flow chart drives a programmable system. Flow charts use key words of 'if', 'then', 'stop', 'start', 'repeat' and other command words (depending on software) Programmes can run for a given number of loops or a set amount of time, or until something is no longer true. A variable is something that be changed.</p>	<p>Shaping: Score with scissors to get a sharp crease</p>	<p>Mathematics: Nets and 3D visualisation (KS3)</p> <p>Shaping with increasingly sophisticated tools. (KS3)</p> <p>Generate Ideas: Develop additional ways of generating ideas, and become confident in deciding which works best in different situations. (KS3)</p>
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	<p>switched off when not in use. Switches complete or break a circuit. (Y4 Sum1)</p> <p>Marking out: Use a pencil, ruler and set square to mark out shapes before cutting them. (Y3 Aut)</p> <p>Shaping: Shape paper, card, aluminium foil and wooden lollipop sticks using scissors. (Y2 Sum)</p> <p>Shaping: Make holes with hole punch or a sharp pencil/putty.</p> <p>Joining: Use glue sticks to join materials. (Y1 Spr)</p> <p>Finishing: Finish products using colouring pencils and decorations made or sourced using a computer. (Y1 Spr)</p> <p>Design Values: Develop own design criteria based on the values of Visual Appeal; Materials; Function; Inclusivity and Accessibility; Making Process; and Sustainability.</p> <p>Identify User Needs: Make choices about the specific users of a product and identify needs through interviews. (Y1 Sum)</p> <p>Generate Ideas: Use Zwicky tables, 'what if' questions, story books and ideas from nature to generate ideas.</p> <p>Communicate Designs: Draw simple design ideas. (Y2 Sum)</p>	<p>Disciplinary</p> <p>Generate Ideas: Use 'quick draw eights' to generate ideas.</p> <p>Make, Test, Iterate: Design process is iterative, and includes generating ideas; evaluating; testing and refining.</p>		
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3.6 Year 5

Term & Focus	Prior Knowledge	Knowledge to be explicitly taught.		Building on Knowledge
<p>Autumn</p> <p>Area: Structures Programming and Control</p> <p>Project: Interactive Display</p> <p>Interactive information display for a context decided by pupils.</p>	<p>Structures: Free-standing structures can be made stronger with stiffer materials, thicker materials, or with more layers of material (laminating). Free-standing structures can be made more stable by having a wider base or a heavier base. (Y1 Sum) Triangulation makes structures and joints stronger and more stable. (Y3 Aut)</p> <p>Programming: Electronic control systems have inputs, outputs and a central processor. A process flow chart drives a programmable system. Flow charts use command words like 'if', 'then', 'stop', 'start', 'repeat'. Programmes can run for a given number of loops or a set amount of time, or until something is no longer true. A variable is something that be changed.</p> <p>Science: A complete circuit has at least one cell and at least one functioning component connected in a continuous loop. A short circuit is a circuit with just a cell and no other components. They can be dangerous. Electrical components include: wire, lamp, buzzer, motor and switch. Electrical appliances should be switched off when not in use. Switches complete or break a circuit. (Y4 Sum1)</p> <p>Marking out: Use a set square to keep right angles (Y3).</p> <p>Mathematics: Use a ruler to measure and mark lengths in centimetres. (Y4)</p>	<p>Conceptual</p> <p>D&T Shaping the World:</p> <ul style="list-style-type: none"> Technology – and programmable technology – has had a huge impact on the world in living memory. <p>Also review from Y4 Spr Mechanisms:</p> <ul style="list-style-type: none"> A pulley is a simple mechanism. It is a grooved wheel that spins on an axle. A drive belt transfers movement from one pulley to another. A cam changes the direction of movement from rotary to reciprocal. A spring is an energy store. It stores energy that can be transferred to a different energy store (link to Y5 Sci Aut) Pulleys can redirect forces, or reduce the force required to lift heavy objects. 		<p>Science: Understanding how mechanisms relate to work done (KS3).</p>

	<p>Shaping: Make a hole using a bradawl. (Y3 Aut)</p> <p>Finishing: Finish the product by using decorations/information created or sourced from a computer and/or paint.</p> <p>Design Values: Develop own design criteria based on the values of Visual Appeal; Materials; Function; Inclusivity and Accessibility; Making Process; and Sustainability.</p> <p>Identify User Needs: Identify user needs through observations and a 'user trip'. (Y3 Spr)</p> <p>Evaluate: Evaluate products according to the design criteria. (Y1 Spr)</p> <p>Communicate Designs: Draw an exploded diagram (Y4 Spr)</p>			
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<p>Spring</p> <p>Area: Food</p> <p>Project: Sauces</p> <p>Building foundational cooking skills with a range of staple sauces.</p>	<p>Food Sources: Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat and dairy products) (Y2). Seasoning adds to the flavour of food. We can season with spices and herbs. (Y4)</p> <p>Nutrition & Eating: Vegetarians choose not eat animal meat. Vegans do not eat any animal product. (Y2) Some people are allergic to foods, which means their body as a reaction when they eat them (Y3). Some people are intolerant to foods, which means they cannot digest them. (Y4)</p> <p>Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. (Y3)</p> <p>Food Safety & Hygiene: Wear an apron and tie hair back (Y1) and wash hands after sneezing, coughing and going to the toilet to stop the tiny living things on our hands getting into our bodies (Y2). Food</p>	<p>Conceptual</p> <p>Food Sources: Pasta is made from wheat flour and water (and sometimes egg). Couscous is a type of pasta.</p> <p>Food Safety & Hygiene: High risk foods that are cooked and ready to eat should be served immediately or kept in the fridge for 2-4 days. Use a material that is a poor thermal conductor (thermal insulator) when stirring hot food or removing food from the oven.</p>	<p>Procedural</p> <p>Prepare: Use a can opener. Chop a range of foods, including the above plus onions and cauliflower. Measure mass in grams and kilograms using a balance. Knowing when to measure (estimation)</p> <p>Combine & Assemble: Use a blender or hand-held blender. Whisk (to make roux and Bechamel sauce).</p> <p>Cook: Use a hob to boil (pasta). Use an oven to roast vegetables and brown cheese.</p>	<p>Food Sources: Knowledge of where other foods come from, and how they can be minimally, moderately, significantly or ultra processed. (Y6)</p> <p>Nutrition & Eating: A healthy diet is made up of mostly minimally and moderately processed foods. Too many ultra-processed foods should be avoided. (Y6)</p> <p>Food Safety & Hygiene: The tiny living things that we need to stop getting into food are bacteria and viruses. They can sometimes make us unwell. (Sci Y6 Spr2)</p> <p>Prepare: Chop an increasingly complicated selection of foods.</p> <p>Cook: Use an oven to bake. (Y6)</p> <p>Make food choices based on Y1-5 plus carbon footprint of production and transport; occasion; and cost. (Y6)</p>
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	<p>should not be eaten after the 'use by' date. Foods can be eaten after the 'best before' date, but we should check them first. (Y3)</p> <p>Science: Poor thermal conductors (thermal insulators) do not allow energy to be transferred through them easily when heated. (Y4 Sum2)</p> <p>Prepare: Chop a range of foods using the claw (Y1) and bridge (Y2) technique. Use senses (sight, smell and touch) to check foods for any bits that should not be eaten. (Y2) Measure volumes in millilitres and litres using a measuring jug. (Y4)</p> <p>Mathematics: Measure and compare mass (g/kg). (Y3)</p> <p>Cook: Use a hob to sauté and simmer food, and to boil (vegetables). (Y4)</p> <p>Work in the Kitchen: Follow simple recipes and wash up items in the most appropriate order (Y4) by removing excess food, washing, rinsing and drying (Y2), and independently maintain a clean and organised workspace (Y3).</p>	<p>Disciplinary Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; knowledge of food allergies; food miles; plus time taken to prepare</p>		
<p>Summer</p> <p>Area: Structures Shaping the World (DT)</p> <p>Project: Flat Pack</p> <p>Designing a flat pack toy or model that can be sold for construction by users.</p>	<p>Structures: 2D shapes have a length and width. 3D shapes have a length and width and height. (Y1 Sum)</p> <p>Structures: Free-standing structures can be made stronger with stiffer materials, thicker materials, or with more layers of material (laminating). Free-standing structures can be made more stable by having a wider base or a heavier base. (Y1 Sum)</p> <p>Structures: Triangulation makes structures and joints stronger and more stable (Y3 Aut)</p>	<p>Conceptual</p> <p>Structures: Structures can be made by slotting items together.</p> <p>D&T Shaping the World: Flat pack furniture has made it easier for people to buy and transport furniture to their home.</p>	<p>Procedural</p> <p>Joining: Join pieces by slotting. Finishing: File or sand to smooth edges.</p>	<p>Conceptual</p> <p>Wider application of slotting to create and join structures (KS3)</p> <p>Disciplinary</p> <p>Communicate Designs: Draw designs with measurements in centimeters. (Y6 Aut1)</p>

	<p>Science: Physical properties of materials include hard/soft, dull/shiny, rough/smooth. (Y2 Spr1)</p> <p>History: Prehistoric Britons, Ancient Egyptians, Ancient Greeks , Ancient Maya, Romans and Early Islamic Civilisation used knowledge of strong structures to build Stonehenge, pyramids and temples a very long time ago. (Y3 to Y5 Spr)</p> <p>Shaping: Cut paper using scissors. (Y1 Spr)</p> <p>Finishing: Finish using decorations sourced or made using a computer. (Y1 Aut)</p> <p>Design Values: Develop own design criteria based on the values of Visual Appeal; Materials; Function (Y1 Spr); Inclusivity and Accessibility (Y1 Sum); Making Process (Y2 Sum); and Sustainability. (Y3 Aut)</p> <p>Identify User Needs: Make choices about the specific users of a product (Y1 Spr)</p> <p>Generate Ideas: Use premade templates as inspiration for creating own patterns. (Y2 Sum)</p> <p>Communicate Designs: A model is a way of showing a design idea in 3D (Y1 Sum)</p>		<p>Disciplinary</p> <p>Make, Test, Iterate: Use Computed-Aided design to test models quickly and effectively.</p> <p>Communicate Designs: Create a flow chart for the process of making (the model/toy from the flat pack).</p> <p>Communicate Designs: Draw an exploded diagram.</p>	
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Term & Focus	Prior Knowledge	Knowledge to be explicitly taught.		Building on Knowledge
<p>Autumn</p> <p>Area: Materials</p> <p>Project: Head Coverings</p> <p>Made to measure hats and head coverings for a context decided by pupils.</p>	<p>Structures: Free-standing structures can be made stronger with stiffer materials, thicker materials, or with more layers of material (laminating). (Y1 Sum)</p> <p>Structures: Frame and shell structures. (Y4 Sum)</p> <p>Science: Physical properties of materials include hard/soft, waterproof/not waterproof, windproof/not windproof, absorbent/not absorbent, good thermal conductor/poor thermal conductor (insulator). (Y1-Y4)</p> <p>Marking out: Temporarily fix a pattern to a material using pins (positioning them to reduce waste), and mark out using chalk. (Y2 Sum)</p> <p>Shaping: Shape lollipop sticks, pipe cleaners and fabric using hole punch and scissors. (Y1 Spr)</p> <p>Joining: Use glue, stapes, running stitch to join fabrics, using a seam allowance and sewing 'right sides together' (Y2 Sum); sew using a back stitch, and use press studs, hook-and-eyes, buttons and tying with ribbon to join fabrics. (Y3 Spr)</p> <p>Finishing: Finish fabrics by decorating with buttons, pipe cleaners or other pieces of fabric (Y2 Sum) and by using a blanket stitch. (Y3 Spr)</p> <p>Design Values: Develop own design criteria based on the values of Visual Appeal; Materials; Function; Inclusivity and Accessibility; Making Process; and Sustainability.</p> <p>Identify User Needs: Make choices about users and purpose.</p>	<p style="text-align: center;"><u>Disciplinary</u></p> <p>Identify User Needs: Develop design criteria with exact measurements.</p> <p>Evaluate: Evaluate products though secondary research and evaluate the sources of this secondary information.</p> <p>Communicate Designs: Draw designs with measurements in centimetres.</p>	<p style="text-align: center;"><u>Procedural</u></p> <p>Joining: Join fabrics using an over stitch.</p> <p>Finishing: Release tension by snipping along a curved seam.</p> <p>Finishing: Make minor adjustments to ensure a good fit.</p>	<p style="text-align: center;"><u>Procedural</u></p> <p>Wider range of joining and finishing stitches (KS3).</p> <p style="text-align: center;"><u>Disciplinary</u></p> <p>Identify User Needs: Recognise the difference between user needs and user wants in an interview; and how there may different users and needs within one product. (Y6 Spr)</p> <p>Evaluate: Evaluate products against a growing list of design values. (KS3)</p> <p>Communicate Designs: Complete scale and isometric drawings of designs. (KS3)</p>

	<p>Evaluate: Evaluate products according to the design criteria. (Y1 Spr) Generate Ideas: Use a range of preferred techniques to generate ideas. Communicate Designs: Draw simple diagrams</p>			
<p>Spring</p> <p>Area: Shaping the World (DT) Programming and control</p> <p>Project: Sustainable Systems</p> <p>Identifying a need and designing a sustainable solution at a system level.</p>	<p>Science: Sustainability means meeting the needs of the people today while meeting the needs of people in the future. (Y2 Spr1) Geography: There are a range of ways that we can mitigate and adapt to climate change. (Y6 Aut2) Geography: Plastics take hundreds of years to break down. They threaten biodiversity and can kill organisms directly or indirectly by destroying habitats. Creating plastics requires fossil fuels and releases greenhouses gases into the atmosphere. (Y6 Aut2) [See the Sustainability Curriculum for more prior knowledge that pupils could draw upon] Required prior knowledge will depend on the problem that pupils aim to solve and the potential solutions they design.]</p> <p>Design Values: Develop own design criteria based on the values of Visual Appeal; Materials; Function; Inclusivity and Accessibility; Making Process; and Sustainability. Identify User Needs: Identify user needs through interviews and observations and carrying out ‘user trips’. Generate Ideas: Use a range of techniques to generate ideas.</p>	<p style="text-align: center;"><u>Conceptual</u></p> <p>D&T Shaping the World: Designers and engineers have developed sustainable systems in agriculture, waste and electricity generation.</p>	<p style="text-align: center;"><u>Disciplinary</u></p> <p>Design Values: Develop own design criteria based on the value of Necessity: do we really <i>need</i> to design this product? Identify User Needs: Recognise the difference between user needs and user wants in an interview. Identify User Needs: Identify different users who may use a service, and how their needs may be different. Generate Ideas: Identify a problem or issue in a system, and design to help solve this problem.</p>	<p style="text-align: center;"><u>Disciplinary</u></p> <p>Design Values: Develop design criteria based on additional values such as cost and specific measures like emissions of CO₂ or equivalent. (KS3) Identify User Needs: Identify user needs from wants through user interviews and workshops. (KS3) Generate Ideas: Develop additional ways of generating ideas, and become confident in deciding which works best in different situations. (KS3)</p>

<p>Summer</p> <p>Area: Food</p> <p>Project: Savoury Snacks</p> <p>Cooking and baking filled pastries and other balanced picnic snacks.</p>	<p>Food Sources: Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat and dairy products) (Y2). Seasoning adds to the flavour of food. We can season with spices and herbs. (Y4)</p> <p>Nutrition & Eating: Vegetarians choose not eat animal meat. Vegans do not eat any animal product. (Y2) Some people are allergic to foods, which means their body as a reaction when they eat them (Y3). Some people are intolerant to foods, which means they cannot digest them. (Y4)</p> <p>Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. (Y3)</p> <p>Food Safety & Hygiene: Wear an apron and tie hair back (Y1) and wash hands after sneezing, coughing and going to the toilet to stop the tiny living things on our hands getting into our bodies (Y2). Food should not be eaten after the 'use by' date. Foods can be eaten after the 'best before' date, but we should check them first (Y3). Use a material that is a poor thermal conductor when stirring hot food or removing food from the oven. (Y5)</p> <p>Science: Bacteria and viruses are microorganisms. Some bacteria are helpful, and others can cause diseases in other organisms. (Y6 Spr2)</p> <p>Prepare: Chop a range of foods using the claw (Y1) and bridge (Y2) technique. Use senses (sight, smell and touch) to check foods for any bits that should not be eaten. (Y2) Measure volumes (ml/l) using a measuring jug (Y4) and mass (g/kg) using a balance. (Y5)</p>	<p style="text-align: center;"><u>Conceptual</u></p> <p>Food Sources: Foods can be minimally processed (like fresh fruit and vegetables); moderately processed (like cheese and flour); significantly processed (like baked beans); or ultra-processed (like ready meals; sugary cereals and crisps).</p> <p>Nutrition & Eating: A healthy diet is made up of mostly minimally and moderately processed foods. Too many ultra-processed foods should be avoided.</p> <p>Food Safety & Hygiene: The tiny living things that we need to stop getting into food are bacteria and viruses. They can sometimes make us unwell.</p>	<p style="text-align: center;"><u>Procedural</u></p> <p>Prepare: Crack eggs.</p> <p>Combine & Assemble: Rub flour into butter. Shape and cut using cutters.</p> <p>Cook: Use an oven to bake food.</p> <p style="text-align: center;"><u>Disciplinary</u></p> <p>Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; knowledge of food allergies; food miles; time taken to prepare; plus carbon footprint of production and transport; occasion; and cost.</p>	<p style="text-align: center;"><u>Conceptual</u></p> <p>Food Sources: Knowledge of where other foods come from.</p> <p>Nutrition & Eating: Understanding recommended daily intakes of various foods, and how physical activity affects this. (KS3)</p> <p>Food Safety & Hygiene: The different microorganisms that can cause diseases; what harm they cause and how. (KS3)</p> <p style="text-align: center;"><u>Procedural</u></p> <p>Prepare: Chop an increasingly complicated selection of foods.</p> <p>Cook: Use a growing range of appliances to cook (e.g. slow cooker; grill; air fryer).</p> <p style="text-align: center;"><u>Disciplinary</u></p> <p>Make food choices based on Y1-6 plus meal planning to ensure waste is minimised. (KS3)</p>
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<p>Mathematics: Measure and compare mass (g/kg). (Y3)</p> <p>Cook: Use a hob to sauté/simmer (Y4) and an oven to roast. (Y5)</p> <p>Work in the Kitchen: Follow simple recipes and wash up items in the most appropriate order (Y4) by removing excess food, washing, rinsing and drying (Y2), and independently maintain a clean and organised workspace (Y3).</p> <p>Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; knowledge of food allergies; food miles; and time taken to prepare.</p>			
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4.0 Whole School Overview: Long Term Plan

	N3-4	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	To be added		Food Eat a Rainbow [Aut2] Preparing a colourful fruit salad and crudites.	Food Salads [Aut2] Preparing healthy, balanced salads that include proteins.	Picture Frames [Aut1] Picture frames that would be made and sold in a commercial context.	Food Soups [Aut2] Cooking vegetables and grains and combining into healthy soups.	Interactive Display [Aut2] Interactive information display for a context decided by pupils.	Head Coverings [Aut1] Made to measure hats and head coverings for a context decided by pupils.
Spring			Moving Pictures Using simple linkages (levers) to make a moving picture for someone at home.	Wheels & Axles [Spr2] An engineering project to design a buggy that rolls straight and smoothly.	Keeping it Contained A solution for users who struggle to keep possessions safe in their bag.	Pulleys Using pulleys and levers to create a video that shares a message.	Food Sauces [Spr2] Building foundational cooking skills with a range of staple sauces.	Sustainable Systems [Spr1] Identifying a need and designing a sustainable solution at a system level.
Summer			Outdoor Space Designing an outdoor space and creating a 3D model to share the design.	Glove Puppets Creating props to tell a story to children in EYFS.	Food Sandwiches and Packed Lunches [Sum1] Making sandwiches with a balance of proteins fats & carbohydrates.	Mood Lighting [Sum2] Using nets and circuits to programme lighting.	Flat Pack Designing a flat pack toy or model that can be sold for construction by users.	Food Savoury Snacks [Sum1] Cooking and baking filled pastries and other balanced picnic snacks.

4.1 Knowledge and Skills Overview - EYFS

Design Technology content in EYFS


The new EYFS Framework makes some specific links to learning about design and technology, and one of the Key Learning Objective strands from Expressive Arts and Design is about creating with materials. There are links to DT in ELG: Fine Motor Skills and ELG: Creating with Materials.

The children will need to have a basic understanding of the how to explore a variety of materials, tools and techniques. To help frame these opportunities, here are the six EYFS Key

Objectives for DT:

1. Use a variety of materials with increased independence.
2. Explore a range of ways to attach and join materials.
3. To use tools with care, increased precision and accuracy.
4. To think about what they want to make and build on previous learning to refine ideas.
5. Discuss problems and how they may be solved.
6. To reflect and evaluate how well they have achieved their aims.

4.2 Knowledge and Skills Overview - Procedural Knowledge

D&T Procedural Knowledge					
		Marking Out	Shaping	Joining	Finishing
EYFS	To be added				
Year 1	<ul style="list-style-type: none"> Use a pencil or chalk to decide on the location of holes prior to making them. Use a ruler to mark out the position of a straight line. 	<ul style="list-style-type: none"> Make a hole using a hole punch. Make a hole using a sharp pencil and blue tack. Cut materials with scissors. Shape plasticine using rolling pins and basic craft tools. Shape paper, card, aluminium foil, plastic sheets, pipe cleaners, plasticine, art straws. 	<ul style="list-style-type: none"> Use a split pin to join materials. Use folding to secure pieces in place. Use glue sticks to join materials. Use Blu-Tac to (temporarily) join materials. Use PVA glue to join materials. Use sellotape to join materials. Use masking tape to join materials. 	<ul style="list-style-type: none"> Finish products with decorations using colouring pencils. Finish products with decorations made or sources from a computer. 	
Year 2	<ul style="list-style-type: none"> Temporarily fix a template or pattern to a material using pins and paperclips and mark out shapes before cutting them. Position patterns to reduce waste (link to Science and Sustainability). 	<ul style="list-style-type: none"> Shape wooden lollipop sticks, rubber bands and fabrics. 	<ul style="list-style-type: none"> Use pre-drilled push fit items to join them. Use sticky pads to join materials. Use a seam allowance to join fabrics. Hide a seam by joining fabrics 'right sides together'. Use staples to join fabric and other materials. Use pins to (temporarily) join materials. Use fabric glue to join fabrics. Join fabrics using a running stitch. Thread a needle and start a stitch. 	<ul style="list-style-type: none"> Finish fabrics by decorating with buttons, pipe cleaners or other pieces of fabric. 	
Y3	<ul style="list-style-type: none"> Use a set square to keep right angles. 	<ul style="list-style-type: none"> Make a hole using a bradawl. Cut hard materials using a junior hacksaw and clamps. 	<ul style="list-style-type: none"> Join fabrics using a back stitch. Join fabrics using press studs, hooks and eyes, buttons, and tying with ribbon. Join pieces by slotting. 	<ul style="list-style-type: none"> Finish products with decorations using paints. Finish fabrics using a blanket stitch 	
Y4	<ul style="list-style-type: none"> Review of the above. 	<ul style="list-style-type: none"> Score with scissors to get a sharp crease. 	<ul style="list-style-type: none"> Review of the above. 	<ul style="list-style-type: none"> File or sand to shape and smooth. 	
Y5	<ul style="list-style-type: none"> Use a ruler to measure lengths in centimetres (Y4 Mathematics). 	<ul style="list-style-type: none"> Cut very hard materials, such as modelling wire with pliers. 	<ul style="list-style-type: none"> Review of the above. 	<ul style="list-style-type: none"> Review of the above. 	
Y6	<ul style="list-style-type: none"> Review of the above. 	<ul style="list-style-type: none"> Review of the above. 	<ul style="list-style-type: none"> Fasten fabrics using a toggle. Join fabrics using an over stitch. 	<ul style="list-style-type: none"> Release tension by snipping along a curved seam. 	

D&T Disciplinary Knowledge



Part 1 of 2

	Designing in Different Contexts	Design Values	Identifying User Needs	Evaluating Products
EYFS	To be added			
Y1	<ul style="list-style-type: none"> Design a product for users in a home environment. Design a product for users in a local community environment. 	<ul style="list-style-type: none"> Design and evaluate based on: <ul style="list-style-type: none"> Visual appeal; Materials; Function; Inclusivity and accessibility. 	<ul style="list-style-type: none"> Identify the specific users that products have been made for and the purpose they have. Make choices about user(s) to design for. Identify user needs through interviews (qualitative). 	<ul style="list-style-type: none"> Evaluate products according to the design criteria, which grows in complexity as the list of design values grow.
Y2	<ul style="list-style-type: none"> Design a product for users in a school environment. 	<ul style="list-style-type: none"> Design and evaluate based on: <ul style="list-style-type: none"> The above values The making process. 	<ul style="list-style-type: none"> Identify design criteria through approximate measurements. 	
Y3	<ul style="list-style-type: none"> Design a product for users in a commercial environment. 	<ul style="list-style-type: none"> Design and evaluate based on: <ul style="list-style-type: none"> The above values Sustainability (of the whole product life cycle). 	<ul style="list-style-type: none"> Identify user needs through observations (qualitative). Identify user needs through a 'user trip' (doing the thing that users do). Identify a user's needs in a specific context, when they have a specific problem. 	
Y4	<ul style="list-style-type: none"> Design a product for users in an enterprise environment. Design a product for users in a leisure environment. 	<ul style="list-style-type: none"> Design and evaluate based on the above values. 	<ul style="list-style-type: none"> Explicit review of the above. 	
Y5	<ul style="list-style-type: none"> Design a product for users in a wider environment. 	<ul style="list-style-type: none"> Design and evaluate based on the above values. 	<ul style="list-style-type: none"> Explicit review of the above. 	
Y6		<ul style="list-style-type: none"> Design and evaluate based on: <ul style="list-style-type: none"> The above values Necessity (do we really need this product?). 	<ul style="list-style-type: none"> Identify design criteria through exact measurements (cm). Recognise the difference between needs and wants in user interviews. Identify different users who may use a service, and how their needs may differ. 	

4.4 Knowledge and Skills Overview – Disciplinary Knowledge

D&T Disciplinary Knowledge



Part 2 of 2

	Generating Ideas	Making, Testing, Iterating	Communicating Designs
EYFS	To be added		
Y1	<ul style="list-style-type: none"> Generate ideas in a range of ways, including: <ul style="list-style-type: none"> taking photographs and using these as inspiration. 	<ul style="list-style-type: none"> Designing is about trying something and seeing what <u>works</u>, and trying again. 	<ul style="list-style-type: none"> Contribute to a class storyboard to show the process for making. A model is a way of showing a design idea in 3D. When we communicate our design ideas they need to be drawn at the right size. Talk about simple design ideas with others.
Y2	<ul style="list-style-type: none"> Generate ideas in a range of ways, including: <ul style="list-style-type: none"> The above. 'What if' questions. Premade templates. 'Draw and fold'. Using story books. Using personal photographs. 	<ul style="list-style-type: none"> Designers build prototypes to test their products. When using textiles, designers make a pattern from paper to test before making the final product. 	<ul style="list-style-type: none"> Draw simple design ideas and labelling them.
Y3	<ul style="list-style-type: none"> Generate ideas in a range of ways, including: <ul style="list-style-type: none"> The above. Disassembling existing products. Using design constraints. Using Zwicky tables. Using nature to get inspiration. 	<ul style="list-style-type: none"> Explicit review of the above. 	<ul style="list-style-type: none"> Explicit review of the above.
Y4	<ul style="list-style-type: none"> Generate ideas in a range of ways, including: <ul style="list-style-type: none"> The above. 'Quick Draw Eights' 	<ul style="list-style-type: none"> Use CAD to test models quickly and effectively. Design process is <u>iterative</u>, and includes generating ideas; evaluating; testing and refining. 	<ul style="list-style-type: none"> Create a flow chart for process for making. Draw an exploded diagram.
Y5	<ul style="list-style-type: none"> Review of the above, selecting best strategies for the given context. 	<ul style="list-style-type: none"> Explicit review of the above. 	<ul style="list-style-type: none"> Explicit review of the above.
Y6	<ul style="list-style-type: none"> Review of the above, selecting best strategies for the given context. 	<ul style="list-style-type: none"> Explicit review of the above. 	<ul style="list-style-type: none"> Draw designs that show measurements.

4.5 Knowledge and Skills Overview – Conceptual Knowledge - Food

Food Conceptual Knowledge



Part 1 of 2

	Food Sources	Nutrition & Eating
EYFS	To be added	
Y1	<ul style="list-style-type: none"> • Science: A plant is a living thing that grows in one place. A tree is a type of plant. • Science: The basic parts of plant include leaves, flowers, roots, stem (or trunk). • Fruits and vegetables come from plants (including trees). • Fruits contain a plant's seeds. Vegetables are part of the plant. • Food can come from farms, allotments and gardens. • Fruits and vegetables are usually harvested in a particular season. Different foods are in season at different times of the year. 	<ul style="list-style-type: none"> • We should eat 5 portions of fruit or vegetables each day. • 'Eating a rainbow' means to eat different types of fruits and vegetables, that might have lots of different colours. • Fruits and vegetables both contain lots of good things for our bodies. Fruits contain more sugar, so we should eat less of them
Y2	<ul style="list-style-type: none"> • Science: Many plants make fruits or vegetables. Some of these grow below ground. • Science: Some plants grow from bulbs. A bulb is a resting stage for certain plants. • Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat). • Milk comes from animals like cows, sheep, and goats. • Foods made from animal milks are called dairy products. • Some foods are eaten as they are (e.g. milk; fruits and vegetables). Some foods are processed in some way before we eat them (e.g. cheese is made from milk). 	<ul style="list-style-type: none"> • Science: Humans need to eat a healthy and balanced diet. This should include all the nutrients that we need, should be high in fruits and vegetables and low in fats, salt and sugars. • Vegetarians choose not eat animal meat. • Vegans do not eat any animal product. They eat milks/cheeses made from plants. • Some foods are sweet, and some are salty. • Texture is about how food feels in our mouths. Food textures include hard, soft, rough, smooth, crunchy, crispy, chewy and creamy. • Food is more interesting to eat if it has more than one texture at a time.
Y3	<ul style="list-style-type: none"> • Bread is made from flour, which is ground seeds of the wheat plant. • Sources of meat include chicken, sheep (lamb), pigs (pork products), tuna and other fish. 	<ul style="list-style-type: none"> • Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. • Some people are allergic to certain types of food, like nuts or gluten. This means their body reacts when they eat or are in contact with these foods. Some food allergies are mild, and some can be very serious.
Y4	<ul style="list-style-type: none"> • Beans and lentils are edible seeds from plants. • Seasoning adds to the taste of food. Seasoning can include salt, spices (like pepper), herbs, and sugar. • Spices are usually made from the seeds, roots, stem or fruits of a plant and add flavour to food. • Herbs are usually the leaves of a plant and add flavour to food. • Mushrooms are not plants nor animals. They are a type of fungus. 	<ul style="list-style-type: none"> • Some people are intolerant to certain types of food, like gluten or dairy products. This means their bodies cannot digest the foods. It can cause discomfort.
Y5	<ul style="list-style-type: none"> • Pasta is made from wheat flour and water (and sometimes egg). • Couscous is a type of pasta. 	<ul style="list-style-type: none"> • Explicit review and application of the above.
Y6	<ul style="list-style-type: none"> • Foods can be minimally processed (like fresh fruit and vegetables); moderately processed (like cheese and flour); significantly processed (like baked beans); or ultra-processed (like ready meals; sugary cereals and crisps). 	<ul style="list-style-type: none"> • A healthy diet is made up of mostly minimally and moderately processed foods. Too many ultra-processed foods should be avoided.



Food Conceptual Knowledge

Part 2 of 2

Food Safety & Hygiene	
EFYS	To be added
Y1	<ul style="list-style-type: none"> • Store dairy products in the fridge. • Wash hands and tie hair back to stop the tiny living things on our hands getting onto the food and into our bodies. • Wear an apron to protect our clothes and stop the tiny living things on them getting into food and into our bodies.
Y2	<ul style="list-style-type: none"> • Tie hair back and wash hands after sneezing, coughing and going to the toilet to stop the tiny living things on our hands getting into our bodies.
Y3	<ul style="list-style-type: none"> • Food should not be eaten after the 'use by' date. Foods can be eaten after the 'best before' date, but we should check them first. • High risk foods with a 'use by' date should be kept in the fridge. • Hands should be washed after handling raw eggs to stop the tiny things living in there getting into our bodies, because they can make us unwell.
Y4	<ul style="list-style-type: none"> • Hobs and hand blenders need to be used with care, keeping our fingers away. • When blending hot liquids, the blender should be on and/or it is kept well away from the user. • Food preparation sources should be wiped down before and after use to stop the tiny living things on the surfaces getting onto food. • Food preparation areas should be left clean so that food pests are not attracted.
Y5	<ul style="list-style-type: none"> • High risk foods that are cooked and ready to eat should be served immediately or kept in the fridge for 2-4 days. • Science: Use a material that is a poor thermal conductor (thermal insulator) when stirring hot food or removing food from the oven.
Y6	<ul style="list-style-type: none"> • Science: The tiny living things that we need to stop getting into food are bacteria and viruses. They can sometimes make us unwell.

4.7 Knowledge and Skills Overview – Conceptual Knowledge – Food

Food Procedural Knowledge



	Preparation	Combining & Assembling	Cooking	Working in the Kitchen
EYFS	To be added			
Y1	<ul style="list-style-type: none"> Wash and drain fruits. Chop using the claw technique. Chop a range of foods, including bananas, grapes, strawberries, cucumber and prepared pears, pineapple, peppers and carrots. Peel bananas, satsumas. Measure dry foods and liquids using a teaspoon and tablespoon. 	<ul style="list-style-type: none"> Stir with wooden spoon. Use fruit juice to prevent browning. 		<ul style="list-style-type: none"> Follow simple recipes. Wash up items by removing excess food, washing, rinsing and drying.
Y2	<ul style="list-style-type: none"> Remove the outer leaves of vegetables (e.g. lettuce) and wash and drain them. Use senses (sight, smell and touch) to check foods for any bits that should not be eaten. Use a colander or sieve to drain canned foods Chop using the claw and bridge technique. Chop a range of foods, including the above plus tomatoes, lettuce, feta and prepared cheddar. Peel carrots. Grate carrots. 	<ul style="list-style-type: none"> Dress salad using two utensils. Layer food on a bed of salad. 		<ul style="list-style-type: none"> Application of the above.
Y3	<ul style="list-style-type: none"> Chop a range of foods, including the above plus hard-boiled eggs and cheddar. Peel hard-boiled eggs. 	<ul style="list-style-type: none"> Stir with a teaspoon or tablespoon. Spread butter / margarine with a knife. 	<ul style="list-style-type: none"> Use a hob to boil (an egg). 	<ul style="list-style-type: none"> Application of the above. Independently maintain a clean and organised workspace.
Y4	<ul style="list-style-type: none"> Chop a range of foods, including the above plus mushrooms, carrots, and peppers. Crush garlic. Mathematics: Measure volumes in millilitres and litres using a measuring jug. 	<ul style="list-style-type: none"> Use a food processor or hand mixer. 	<ul style="list-style-type: none"> Use a hob to sauté food. Use a hob to simmer food. Use a hob to boil (vegetables). 	<ul style="list-style-type: none"> Application of the above. Wash up items in the most appropriate order, starting with least dirty, and change washing up water as required.
Y5	<ul style="list-style-type: none"> Use a can opener. Chop a range of foods, including the above plus onions and cauliflower. Mathematics: Measure mass in grams and kilograms using a balance. Knowing when to measure (estimation) 	<ul style="list-style-type: none"> Use a blender or hand-held blender. Whisk (to make roux and Bechamel sauce). 	<ul style="list-style-type: none"> Use a hob to boil (pasta). Use an oven to roast vegetables. Use an oven to brown cheese. 	<ul style="list-style-type: none"> Application of the above.
Y6	<ul style="list-style-type: none"> Crack eggs. 	<ul style="list-style-type: none"> Rub flour into butter. Shape and cut using cutters. 	<ul style="list-style-type: none"> Use an oven to bake food. 	<ul style="list-style-type: none"> Application of the above.

Sequence of Lessons



	Lesson Title	Knowledge to be Taught	Lesson Summary
1	Disassemble picture frames	<ul style="list-style-type: none"> • D&T Shaping the World: Engineers have shaped our world • Structures: Triangulation is used in many different structures for strength and stability • Generate Ideas: Disassemble different products and use these as inspiration for creating your own ideas • D&T Shaping the World: Free-standing structures in the world around us have been made strong and stable with triangulation, using strong materials and having a wide base 	<ul style="list-style-type: none"> • This lesson reviews the ways that structures can be made strong and stable, using Gustave Eiffel and the Eiffel Tower as an example. • Pupils disassemble a collection of real picture frames so that they can gather first hand ideas for their own designs.
2	Use a range of woodworking tools safely	<ul style="list-style-type: none"> • Marking out: Use a set square to keep right angles • Shaping: Cut hard materials like wood with a junior hacksaw and clamps • Shaping: Use small hand-tools to make a hole safely 	<ul style="list-style-type: none"> • There are three skills to be demonstrated by the teacher and then practised by pupils in this lesson. See the notes provided in this pack and in the lesson slides.
3	Use a range of materials to make structures	<ul style="list-style-type: none"> • Structures: Free-standing structures can be made more stable by adding a stand. • Structures: Ties can make structures more stable. 	<ul style="list-style-type: none"> • In this lesson pupils explore ways to create a triangular stand for a picture frame, as well as the use of ties to make structures more stable
4	Develop design criteria for a picture frame	<ul style="list-style-type: none"> • Use a set of shared design criteria for a commercial context, based on the value of Sustainability (and the whole life cycle of the product) – <i>Reduce, Reuse, Recycle. [And everything else: Use shared design criteria based on the values of Visual Appeal; Materials; Function (Y1 Sp); Inclusivity and Accessibility (Y1 Sum); the Making Process. (Y2 Sum)]</i> 	<ul style="list-style-type: none"> • After reviewing the importance of designing for a purpose, this lesson focuses on creating a product to sell, with pupils considering a range of commercial settings for their picture frames. • In particular, the value of “sustainability” is explored in the context of this project, and pupils use shared criteria draw up an initial design for their frame.
5	Make and decorate a picture frame	<ul style="list-style-type: none"> • [Making] • Finishing: Finish products with paper and cardboard decorations and paints 	<ul style="list-style-type: none"> • Pupils use a variety of tools and materials to make a picture frame.
6	Evaluate a picture frame	<ul style="list-style-type: none"> • Evaluate products using shared design criteria based on the value of Sustainability (and the whole life cycle of the product) 	<ul style="list-style-type: none"> • Pupils review their own work and that of their peers, discussing the ideas and designs that have been generated, with emphasis on the value of “sustainability” and on considering how their frames may be marketed as a commercial product.

6.0 Roles and Responsibilities

6.1 Class Teacher

It is the teachers' role to be aware of and follow the guidance contained within this policy. They should seek advice from the subject leader if they are unsure of knowledge content or how best to tackle a unit of work.

6.2 Subject Leader

The roles of the subject leader are to:

- Plan a progressive Long-Term Plan using the National Curriculum as a base and using the School Curriculum Intents to tailor their subject provision to suit our pupils, which is chunked into units for each year group.
- Produce Medium Term Plans to frame the teaching and learning for each unit. - Promote their subject through signposting staff to up-to-date resources and subject specific evidence-based research.
- Support staff through planned CPD events and ad-hoc requests for assistance with knowledge or planning.
- Oversee the delivery of the subject through:
 - learning walks
 - book looks
 - pupil voice
 - subject audits
- Meet with their SLT link to update them with current developments in research and thinking.
- Create an annual action plan.
- Ensure there are sufficient resources for the subject to be taught effectively and efficiently.
- Ensure this policy is up to date.

6.3 Senior Leadership Team

Each subject will have an SLT link/ Their roles are to:

- Support the subject leader to:
 - Be an advocate for the subject
 - Oversee the delivery of their subject through assisting with learning walks, book looks and pupil voice
 - Enable their subject leader to have sufficient CPD opportunities to develop staff knowledge.
 - Implement their action plan. - Work together so that school priorities can be identified, and prevent all subjects from being promoted and developed at the same time