



Design and Technology Progression Map

This progression map outlines how pupils develop both **substantive knowledge** and **disciplinary knowledge** from Early Years to the end of Key Stage 2. It ensures that learning is sequenced logically so that knowledge builds securely over time. At Ordsall, we define these types of knowledge as:

Substantive knowledge: The core, established facts and information within a specific subject or field of study.

Disciplinary knowledge: An understanding of the methods, theories, concepts, and perspectives that are unique to a specific subject. Developing the ability to think like someone who works within a particular discipline.

Threads

In DT, key threads run throughout the curriculum, providing continuity and coherence as pupils move through each year group. These recurring ideas help children make connections between different components of learning, deepen their understanding over time, and build a secure foundation of both substantive and disciplinary knowledge. We have identified the following threads within our curriculum.

Using tools safely	Combining & Joining	Existing Products	Planning to Make
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Using tools safely: Use of an external object to alter the form, condition or position of another object

Combining & Joining: Merging or connecting multiple components into a single entity

Existing products: Established products that that have already been developed for use and have been subject to feedback and testing.

Planning to make: Thinking about the steps, resources and methods needed to achieve a specific objective.

Health & safety: Guidelines and procedures intended to prevent accident or injury.

Disciplinary Knowledge

Within our Design & Technology curriculum, we have identified the following core disciplinary areas that shape how pupils learn to think, design, create, and evaluate like skilled designers and makers

Design	Researching, planning and developing design ideas considering users' needs and real-world contexts
Make	Using tools, materials and equipment safely and effectively to produce products.
Evaluate	Assessing products based on their function, durability and aesthetics. Knowing how to improve designs through modification and adaptation.
Technical Knowledge	Knowledge specific to an area of DT e.g. mechanisms/food



Coverage Map

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Structures	x		x	x	x	x	
Mechanisms	x	x	x			x	
Cooking & Nutrition	x	x		x			x
Textiles	x	x	x		x		x
Electrical Systems (KS2)					x		x
Digital World (KS2)				x		x	

Progression in Disciplinary Knowledge

Discipline	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	<p>Know how to draw to help me imagine what something might look like.</p> <p>Know how to talk about my ideas before I start making something.</p>	<p>Know how to think about my ideas before I start making.</p> <p>Know how to change my ideas as I work.</p>	<p>Know how to explore a range of existing products.</p> <p>Know how to use simple drawings and words to plan what I want to make.</p> <p>Know how to talk about a design as a plan for what I want to make.</p> <p>Know how to talk about what a product is and explain why it has been made.</p>	<p>Know how to use templates to explore design ideas.</p> <p>Know how to produce designs that are functional and appealing for the intended user.</p> <p>Know how to produce a design criterion that tells you what a product should do and look like.</p> <p>Know how to use templates to explore design ideas.</p>	<p>Know how to present ideas clearly using sketches and diagrams.</p> <p>Know how to research information to inform design criteria.</p> <p>Know how to produce a design that considers function and user.</p> <p>Know how to use existing products to create ideas for our own designs.</p>	<p>Know how to write a clear design brief and specification.</p> <p>Know how to choose materials and techniques to meet functional and aesthetic requirements.</p>	<p>Know how to develop and communicate design ideas using detailed drawings and digital tools.</p> <p>Know how to produce designs that balance function, aesthetics and purpose.</p> <p>Know how to justify design choices based on research.</p>	<p>Know how to conduct market research to inform design decisions.</p> <p>Know how to present a design clearly using annotated sketches, recipes and planning sheets.</p> <p>Know how to use my design to evaluate the final outcome.</p>



Discipline	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Make	<p>Know how to join different materials together.</p> <p>Know how to put materials together to make something tall.</p> <p>Know how to use tape and glue to join things together.</p> <p>Know how to use different tools for different jobs.</p> <p>Know how to use different materials build things.</p> <p>Know how to explain which food I like and dislike.</p> <p>Know how to explain what I am doing.</p>	<p>Know how to use recyclable materials to make something.</p> <p>Know how some tools, such as scissors, can cut things safely.</p> <p>Know how to choose and use different tools to make my ideas.</p> <p>Know how to join materials using tape and glue.</p>	<p>Know how to use simple tools.</p> <p>Know how to join materials.</p> <p>Know how to combine different materials to make a product.</p>	<p>Know how to choose the correct tools to cut or join the materials I am using.</p> <p>Know how to measure and mark out and cut materials.</p> <p>Know how to use joining techniques.</p> <p>Know how to assemble a product following a design criterion.</p> <p>Know how to choose suitable tools, materials and techniques.</p>	<p>Know how to use a wider range of tools and materials and techniques.</p> <p>Know how to use different cutting and joining techniques suitable for the material I am using.</p> <p>Know how to assemble and finish a product</p> <p>Know how to program a digital device to achieve an outcome.</p>	<p>Know how to measure, cut and assemble materials with increasing accuracy.</p> <p>Know how to choose and apply finishing techniques to improve function and appearance.</p>	<p>Know how to use a variety of tools and materials safely and independently.</p> <p>Know how to produce a well-finished product that meets the design criteria.</p> <p>Know how to overcome problems when making a product.</p> <p>Know how to assemble components to achieve a desired outcome.</p>	<p>Know how to work both in dependently and collaboratively to create complex products.</p>



Discipline	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluate	Know how to explain what I like about something I have built.	Know how to look at my work and decide what I would do to make it better. Know how to explain how and why I chose certain materials.	Know how to evaluate the product against the design criteria.	Know how to evaluate a product against the original design brief or criteria. Know how to compare their product to others and suggest changes. Know how to design products that are useful and suitable for the user.	Know how to evaluate a product against its design criteria explaining what works well and what could be improved. Know how to evaluate someone else's work constructively. Know how to give clear reasons for strengths and improvements.	Know how to analyse how well a product meets the user's needs, referring to the design criteria and specification. Know how to modify design and make changes based on evaluation and testing.	Know how to test and evaluate a product for durability, function and appeal. Know how to modify design and make changes based on evaluation and testing.	Know how to evaluate their final product comprehensively against design specifications, user needs and market research. Know how to compare a product with real life designs to assess quality. Know how to refine and improve product through multiple iterations.



Knowledge by Year Group

Nursery	
Disciplinary Knowledge	Substantive Knowledge <i>(statements taken from the Early Years progression document)</i>
<p>Know how to join different materials together. Know how to put materials together to make something tall. Know how to draw to help me imagine what something might look like. Know how to talk about my ideas before I start making something. Know how to use tape and glue to join things together. Know how to use different tools for different jobs. Know how to use different materials build things. Know how to explain which food I like and dislike. Know how to explain what I am doing. Know how to explain what I like about something I have built.</p>	<p>I can build with blocks. <i>I am finding out what I can make in the creative area.</i> I can tell you something about what I am doing. <i>I am learning how to use glue or tape to stick join things.</i> I can build with a purpose. I can use a range of creative materials to make pictures and models. <i>I am beginning to develop my own ideas of what to make/draw and how to make/draw it.</i> <i>I can join things together with glue or tape.</i> I can make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. I can explore different materials freely, in order to develop my ideas about how to use them and what to make. <i>I can develop my own ideas and then decide which materials to use to express them.</i> <i>I can join different materials and explore different textures.</i></p>
Vocabulary	
<p>Make Build Put together Stick Enjoy Like Don't like Feel Touch</p>	



Reception	
Disciplinary Knowledge	Substantive Knowledge <i>(statements taken from the Early Years progression document)</i>
Know how to use recyclable materials to make something. Know how some tools, such as scissors, can cut things safely. Know how to think about my ideas before I start making. Know how to change my ideas as I work. Know how to choose and use different tools to make my ideas. Know how to join materials using tape and glue. Know how to look at my work and decide what I would do to make it better. Know how to explain how and why I chose certain materials.	I can return to and build on my previous learning, refining ideas and developing my ability to represent them. I can safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
Vocabulary	
Idea Try Cut Join Mix Improve Change Fix Material	



Year I		
Mechanisms		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in mechanisms.	Know that sliders move in a straight line and levers pivot to create movement.
Design	Know how to use simple drawings and words to plan what I want to make.	Know that design ideas can come from talking, drawing and exploring. Know that pictures and words can show my design ideas.
Make	Know how to use simple tools. Know how to join materials. Know how to combine different materials to make a product.	Know that paper and card can be cut and joined using tools such as scissors and glue. Know that split pins can be used to allow parts move. Know that moving mechanisms, such as sliders and levers, are made by following a sequence of steps.
Evaluate	Know how to evaluate the product against a design criterion.	Know that people can talk about what they have made and explain what it is and how it works. Know that people can say what they like or dislike about a food product they have made.
Disciplinary Vocabulary		Substantive Vocabulary
Explore – discuss in detail Design – decide on the look and function Join – where two or more things are fastened together Evaluate – assess the results		Lever Slider Mechanism Pivot
Cooking & Nutrition		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in cooking and nutrition.	Know that food needs to be washed and prepared before it is eaten to make it safe and clean. Know that some foods need to be cut into smaller pieces and this should be done safely with adult help. Know that there are simple hygiene rules to follow when preparing food, such as washing hands before cooking. Know that food comes from plants or animals, and that different foods come from different sources.
Design	Know how to explore a range of existing products. Know how to use simple drawings and words to plan what to make.	Know that food can be designed for a specific person or purpose. Know that a food design can be shown using simple drawings or words to explain what the dish will look like. Know that fruits and vegetables are types of food, and that some fruits and vegetables can be used to make a healthy dish.
Make	Know how to use simple tools. Know how different materials can be combined to make a product.	Know that fruit and vegetables can be cut into smaller pieces using knives safely when an adult helps or supervises. Know that washing hands and keeping food areas clean helps to keep food safe to eat. Know that ingredients can be put together to make a finished food product, such as a fruit salad or a vegetable wrap.
Evaluate	Know how to evaluate the product against a design criterion.	Know that people can have different likes and dislikes about food products. Know that a design can be changed based on what someone likes or dislikes, and that designs can be improved if they are made again.
Disciplinary Vocabulary		Substantive Vocabulary
Processes – the series of steps taken Techniques – way of doing a particular task Plan – a detailed outline of the process Combine – to join or merge together		Hygiene Peel Cut Ingredients Healthy Preparation
Textiles		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in textiles.	Know that textiles have different properties, such as texture (e.g. soft or rough) and flexibility.



Design	<p>Know how to talk about what a product is and explain why it has been made.</p> <p>Know how to use simple drawings and words to plan what to make.</p>	<p>Know that different textile products are made from different materials, such as fabric or wool.</p> <p>Know that pictures and simple drawings can be used to show design ideas for a textile product.</p>
Make	<p>Know how to use simple tools.</p> <p>Know how to join materials.</p> <p>Know how to combine different materials to make a product.</p>	<p>Know that textiles and paper can be cut into shapes using tools such as scissors.</p> <p>Know that materials can be joined together using methods such as glue, tape or staples.</p> <p>Know that folding, overlapping and joining materials can change the shape of a textile product.</p>
Evaluate	<p>Know how to evaluate a product against the design criteria.</p>	<p>Know that people can say what they like or do not like about a textile product.</p> <p>Know that designs can be improved by making changes after thinking about what works well and what could be better.</p> <p>Know that listening to feedback from others can help improve a design.</p>
Disciplinary Vocabulary		Substantive Vocabulary
<p>Processes – the series of steps taken</p> <p>Techniques – way of doing a particular task</p> <p>Plan – a detailed outline of the process</p> <p>Combine – to join or merge together</p>		<p>Textile</p> <p>Material</p> <p>Fabric</p> <p>Manipulate</p> <p>Assemble</p> <p>Texture</p>



Year 2		
Textiles		
Disciplinary Knowledge	Substantive Knowledge	
Technical Knowledge	Know how to explore materials, processes and techniques in textiles.	Know that a seam is where two pieces of fabric are joined together, and that seams help hold textile products together. Know that some materials are better suited to certain textile products because of their properties, such as being strong, soft, flexible or smooth.
Design	Know how to use templates to explore design ideas. Know how to produce designs that are functional and appealing for the intended user. Know how to produce a design that tells you what a product should do and look like.	Know that textile products are planned before they are made, and that drawings or templates can be used to show what the product will look like. Know that every textile product has a purpose and is designed for a particular user. Know that designers choose materials by thinking about how they look and how well they will work for the product's purpose.
Make	Know how to choose the correct tools to cut or join the materials I am using.	Know that fabric can be measured and cut accurately using templates or patterns. Know that fabric can be joined using stitching, such as running stitch, to make a textile product.
Evaluate	Know how to evaluate a product against the original design brief or criteria. Know how to compare their product to others and suggest changes. Know how to design and produce products that are useful and suitable for the user.	Know that finished textile products have strengths and weaknesses, depending on how they were designed and made. Know that feedback from users or peers can help designers think about improvements to a textile product. Know that a product can be judged on how well it works and how well it meets its intended purpose.
Disciplinary Vocabulary		Substantive Vocabulary
Template – a pattern or model to copy Functional – having a specific purpose Appealing – attractive or interesting Compare – discuss or record the similarities and differences		Thread Template Properties Stitch Template Function
Mechanisms		
Disciplinary Knowledge	Substantive Knowledge	
Technical Knowledge	Know how to explore materials, processes and techniques in mechanisms.	Know that wheels and axles allow an object to move. Know that there are different types of axle such as a fixed axle and a free-moving axle.
Design	Know how to produce a design that tells you what a product should do and look like.	Know that drawings, labels and annotations of my design can be used to show how my product will work.
Make	Know how to measure, mark out and cut materials Know how to use joining techniques. Know how to assemble a product following a design criterion.	Know that a ruler must be used to measure accurately. Know that materials need to be cut neatly using the correct tools like scissors or cardboard saws. Know that components can be joined together using glue or tape. Know that wheels are attached to a chassis using axles and axle holders.
Evaluate	Know how to evaluate a product against the original design brief or criteria. Know how to compare their product to others and suggest changes.	Know that people can say what they like or do not like about a mechanism. Know that designs can be improved by making changes after thinking about what works well and what could be better. Know that listening to feedback from others is valuable and can be used to modify a final design.
Disciplinary Vocabulary		Substantive Vocabulary
Assemble – fit together separate components Original – the earliest version Compare – discuss or record the similarities or differences		Component Wheels Axle/ Axle holder Chassis Join
Structures		
Disciplinary Knowledge	Substantive Knowledge	



Technical Knowledge	Know how to explore materials, processes and techniques in structures.	Know that some structures are stronger or more stable than others and identify reasons for this e.g. because they have a wider base or have used stronger materials.
Design	Know how to produce a design that tells you what a product should do and look like. Know how to use templates to explore design ideas.	Know that research can be used to develop a design criterion and create a plan for what they are going to make. Know that design ideas use drawings, labels and annotation to show how a product will work. Know that different materials can be used for different purposes
Make	Know how to choose suitable tools, materials and techniques.	Know that materials can be folded, cut and stuck using glue and tape materials to make a model. Know that a model can be strengthened by folding or layering materials.
Evaluate	Know how to compare their product with others and suggest changes Know how to evaluate a product against the original brief or criteria.	Know that people can say what they like or do not like about a structure. Know that making small changes can improve a product.
Disciplinary Vocabulary		Substantive Vocabulary
Design – decide on the look and function Compare – discuss or record the similarities or differences Explain – describe in detail Change – to make something different		Structure Weak Strong Fold Join Stick



Year 3		
Cooking & Nutrition		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in cooking and nutrition.	Know that food comes from different places around the world.
Design	Know how to research information to inform design criteria. Know how to present ideas clearly using sketches and diagrams.	Know that I can improve a design by researching or asking questions about what people like. Know that seasonal ingredients can be selected as part of designing a dish. Know that I must consider taste, texture, smell and appearance of the dish.
Make	Know how to use a wider range of tools and materials. Know how to assemble and finish product.	Know that fruit and vegetable can be prepared in different ways including cutting, peeling and grating. Know that instructions must be followed in a step-by-step recipe including measuring, washing and portioning ingredients. Know that there are different ways of cooking foods including boiling, baking and griddling.
Evaluate	Know how to evaluate a product against its design criteria explaining what works well and what could be improved.	Know that people can give reasons for liking or disliking dishes they have tested. Know that making small changes to a recipe can change the taste or appearance of a product.
Disciplinary Vocabulary		Substantive Vocabulary
Nutrition – the food necessary for health and growth Research – investigate in detail Diagram – a drawing, image or sketch Tools – an implement use to carry out a particular function		Grate Seasonal Boiling Portioning Measuring
Structures		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in structures.	Know that wide and flat based objects are more stable. Know that reinforcing a frame can make it more stable and durable.
Design	Know how to present ideas clearly using sketches and diagrams. Know how to produce a design that considers function and user.	Know that sketching, labelling and describing a product helps to show how the structure will work. Know that designs can be compared to real-life structures.
Make	Know how to use a wider range of tools, materials and techniques. Know how to use different cutting and joining techniques suitable for the material I am using. Know how to assemble and finish a product.	Know that materials can be cut using different tools including cardboard scissors. Know that materials can be joined in different ways including using tabs and slots to build a strong frame.
Evaluate	Know how to evaluate a product against its design criteria explaining what works well and what could be improved.	Know that evaluations allow for the tester to identify what has and has not been met. Know that simple testing can be used to find out if a product is strong or stable. Know that testing can be used to modify the design and make improvements.
Disciplinary Vocabulary		Substantive Vocabulary
Construct – to build or make Assemble – fit together separate components Reinforce – strengthen or support		Tab Slot Frame Stable Stiffness Strength Mark/Score
Digital World		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in digital world.	Know that input devices (e.g., buttons) control output devices (e.g., lights, buzzers). Know that loops and conditions are used to control actions in a program.
Design	Know how to produce a design that considers function and user.	Know that we can talk about existing products to find out what they are used for.



	Know how to use existing products to create ideas for our own designs.	Know that the intended user and purpose of a product is important in the design process.
Make	Know how to programme a digital device to achieve an outcome.	Know that simple programming platforms like Scratch or Micro: bit MakeCode are used to create a sequences and loops. Know that digital systems can be tested and adjusted to make sure it works as planned.
Evaluate	Know how to evaluate someone else's work constructively. Know how to give clear reasons for strengths and improvements.	Know that people can say what worked well or didn't work well when using a digital product (e.g. "the button works" or "the sound plays too late"). Know that testing a digital product helps you to find out if it works as intended. Know that digital products should be designed for the intended purpose and user.
Disciplinary Vocabulary		Substantive Vocabulary
Devices – electronic equipment made for a specific purpose Improve – make better Test – establish the quality, performance or reliability Digital – using electronic signal to transmit information		Input Output Device Sequence Platform Loops Condition Processing



Year 4		
Textiles		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in textiles.	Know that embroidery and appliqué are techniques used to decorate textile products.
Design	Know how to write a clear design brief and specification. Know how to choose materials and techniques to meet functional and aesthetic requirements.	Know that annotated sketches show design details which explain why certain textiles are suitable for their design.
Make	Know how to measure, cut and assemble materials with increasing accuracy. Know how to choose and apply finishing techniques to improve function and appearance.	Know that when sewing a seam allowance is used to ensure neat joins. Know that fabrics can be joined or secured using stitching (backstitch, blanket stitch) and/or fastenings (buttons, Velcro).
Evaluate	Know how to analyse how well a product meets the user's needs referring to the design criteria and specification. Know how to modify design and make changes based on evaluation and testing.	Know that products can be tested to check quality and durability. Know that making small changes to a design can improve the final product.
Disciplinary Vocabulary		Substantive Vocabulary
Embroidery – decorating fabric using other materials or sewing techniques Specification – a detailed description of the design and materials Modify – make partial or minor changes		Seam Fastening Hem Applique
Electrical Systems		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in electrical systems.	Know that electrical components including conductors and insulators are important in electrical systems.
Design	Know how to write a clear design brief and specification. Know how to choose materials and techniques to meet functional and aesthetic requirements.	Know that simple electrical circuits can be used in basic products (e.g., a light-up card). Know that electronic products can be controlled by switches.
Make	Know how to measure, cut and assemble materials with increasing accuracy. Know how to choose and apply finishing techniques to improve function and appearance.	Know that batteries are needed to complete a simple circuit. Know that electrical circuits can be tested to make sure it works. Know that electrical circuits can be used in different products.
Evaluate	Know how to analyse how well a product meets the user's needs referring to the design criteria and specification. Know how to modify design and make changes based on evaluation and testing.	Know that people can say whether they think an electrical product is working correctly. Know that making small changes to an electrical system can change the way it works.
Disciplinary Vocabulary		Substantive Vocabulary
System – a set of things working together Circuit – a route that starts and finishes at the same place Current – the flow of electricity		Components Conductor Insulator Circuit Switch Wire Bulb Electrical current
Structures		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in structures.	Know that structures can be strengthened by using reinforcing or cladding.
Design	Know how to write a clear design brief and specification. Know how to choose materials and techniques to meet functional and aesthetic requirements.	Know that a clear design brief explains how a structure will stay stable and strong. Know that frame structures are designed to support weight.
Make	Know how to measure, cut and assemble materials with increasing accuracy. Know how to choose and apply finishing techniques to improve function and appearance.	Know that a model can be used to inform design ideas. Know that structures can be reinforced by using different techniques like corners.
Evaluate	Know how to analyse how well a product meets the user's needs referring to the design criteria and specification.	Know that talking about a product helps to identify the parts of the design that worked well and those that didn't.



	Know how to modify design and make changes based on evaluation and testing.	Know that a structure can be tested to find out if it performs well.
Disciplinary Vocabulary		Substantive Vocabulary
Analyse – examine in detail Identify – establish or find out Reinforce – strengthen and support		Cladding Reinforcing Test Corner



Year 5		
Structures		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in structures.	Know that design features should be chosen based on what might affect the structure (tension, compression, load).
Design	Know how to develop and communicate design ideas using detailed drawings and digital tools. Know how to produce designs that balance function, aesthetics and purpose.	Know that detailed drawings and templates can be used explain their design. Know that strength, size and materials should be considered when planning and designing structures.
Make	Know how to use a variety of tools and materials safely and independently. Know how to produce a well finished product that meets the design criteria. Know how to overcome problems when making a product.	Know that materials and tools should be selected how to select materials based on suitability for the product. Know that triangulation and bracing can be used to strengthen a structure.
Evaluate	Know how to test and evaluate a product for durability, function and appeal.	Know that structures can be tested to find out what worked well and what could be improved.
Disciplinary Vocabulary		Substantive Vocabulary
Communicate – share or exchange ideas Balance – consider equally Durability – to withstand wear, pressure or damage Select – carefully choose Improve – make better		Template Triangulation Bracing Tension Compression Load
Digital World		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in digital world.	Know that algorithms are used in digital products.
Design	Know how to justify design choices based on research.	Know that digital designs have variables and triggers. Know that using diagrams help to show data flow and logic (e.g., input > process > output).
Make	Know how to assemble components to achieve a desired outcome.	Know that digital products can include components including clip circuits, BBC Micro: bit, or tablets. Know that variables and conditions are used to manage outputs.
Evaluate	Know how to modify design and make changes based on evaluation and testing.	Know that user feedback (through questioning or observation) informs further development. Know that digital products can be tested and modified (e.g., how many times a button is pressed or a light flashes).
Disciplinary Vocabulary		Substantive Vocabulary
Justify – giving a good reason for your choices Incorporate – include as part of the whole Variables – the features that are likely to change		Variable Simulate Software Data flow Algorithm Hardware Signal
Mechanisms		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in mechanisms.	Know that gears and pulleys transfer motion and change speed or direction in mechanisms. Know that gears mesh together to increase or reduce speed or torque.
Design	Know how to develop design ideas using detailed drawing and digital tools. Know that designs should balance function, aesthetics and purpose.	Know that designs include diagrams of parts and materials.
Make	Know how to use a variety of tools and materials safely and independently. Know how to produce a well finished product that meets the design criteria.	Know that components can be joined in different ways. Know that testing a product helps to refine working parts to ensure functionality.



	Know how to overcome problems when making a product.	
Evaluate	Know how to test and evaluate a product for durability, function and appeal.	Know that a product should be accurate, functional, and appealing. Know that making changes to a product can improve functionality.
Disciplinary Vocabulary		Substantive Vocabulary
Transfer – move from one place to another Motion – the process of movement Aesthetics – the way an item looks Precision – being exact and accurate		Gears Pulleys Transfer motion Mechanical



Year 6		
Cooking & Nutrition		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in cooking and nutrition.	Know that different coloured chopping boards are used for different foods to avoid cross-contamination.
Design	Know how to conduct basic market research to inform design decisions. Know how to present a design clearly using annotated sketches, recipes, and planning sheets. Know that design decisions affect the final outcome.	Know that ingredients can be combined to create a dish which meets the brief. Know that adapting a recipe affects nutritional value if you remove, substitute or add ingredients.
Make	Know how to work both independently and collaboratively to create complex products.	Know that a recipe needs to be followed. Know that different equipment is used in cooking including pans, hobs, hot pans and knives.
Evaluate	Know how to evaluate their final product comprehensively against design specifications, user needs, and market research. Know how to compare a product with real life designs to assess quality. Know how to refine and improve a product through multiple iterations.	Know that different methods and ways of presenting foods effect user satisfaction. Know that making changes based on feedback or testing can improve a product.
Disciplinary Vocabulary		Substantive Vocabulary
Research – investigate in detail Annotate – add notes to a diagram Outcome – the result of an action or process Refine – make minor changes to improve		Nutritional Substitute Adapt Cross-contamination Recipe
Electrical Systems		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in electrical systems.	Know that electrical systems can be integrated with mechanisms (e.g. motor and gears). Know that people need to work safely and responsibly with electrical components and tools.
Design	Know how to present a design clearly using annotated sketches, recipes, and planning sheets. Know how to use my design to evaluate the final outcome.	Know that innovative and functional electrical products can be made by combining circuits with other materials or mechanisms.
Make	Know how to work both independently and collaboratively to create complex products.	Know that more complex circuits include series and parallel components.
Evaluate	Know how to evaluate their final product comprehensively against design specifications, user needs, and market research. Know how to compare a product with real life designs to assess quality. Know how to refine and improve a product through multiple iterations.	Know that good electrical circuits function well. Know that evaluating and testing products informs design changes.
Disciplinary Vocabulary		Substantive Vocabulary
Functional – designed for a specific purpose Component – a part of the whole Justify – giving a good reason for your choices		Series Parallel Motor Gears
Textiles		
Disciplinary Knowledge		Substantive Knowledge
Technical Knowledge	Know how to explore materials, processes and techniques in textiles.	Know that textiles have different characteristics including being waterproof or fire resistant. Know that a range of stitches can be used to join fabric including running stitch, back stitch, cross stitch.
Design	Know how to conduct basic market research to inform design decisions. Know how to present a design clearly using annotated sketches, recipes, and planning sheets.	Know that functional fastenings can be added to textiles products including zips and press studs.



	Know that design decisions affect the final outcome.	
Make	Know how to work both independently and collaboratively to create complex products.	Know that textiles products use patterns and include seam allowances. Know that embellishments can be added to textile products to enhance visual appeal including embroidery, beads and applique.
Evaluate	Know how to evaluate their final product comprehensively against design specifications, user needs, and market research. Know how to compare a product with real life designs to assess quality.	Know that people can say what they like or dislike about a product. Know that modifications can be made to textile products to improve functionality or appeal.
Disciplinary Vocabulary		Substantive Vocabulary
Modify – make partial or minor changes Alter – change in a small but significant way Technique – way of doing a particular task Influence – the thing that shapes or affects the decisions		Seam allowance Sustainable Durability