Grange Primary Academy
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D&T and Food Expectations 2025-2026

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Grange Curriculum: D&T and Food 2024

	N3-4	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	Create Christmas Decorations for a gift	**Food** **Vegetable Soup/biscuits**	**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	**Food** **Prepare fruits and vegetables**	Exploring different joins and different ways to fold the material. Design focus	**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	Design and create textured House for Three Little Pigs that can survive the Big Bad Wolf	How to transport water across the outside area without spilling. Pulley System	**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.

Year 1: Autumn 2

Food: Eat a Rainbow

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive Knowledge	Conceptual	• **Science:** A plant is a living thing that grows in one place. A tree is a type of plant. (Y1 Aut1) • **Science:** The basic parts of plant include leaves, flowers, roots, stem (or trunk). (Y1 Aut1) • **Science:** There are four seasons: spring, summer, autumn and winter (Y1 Aut2) • **Science:** The weather changes gradually as we move from season to season (Y1 Aut2)	**Food Sources:** • Fruits and vegetables come from plants (including trees). • Fruits contain a plant's seeds. Vegetables are other parts 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. **Nutrition & Eating:** • 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. **Food Safety & Hygiene:** • 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.	• **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)
	Procedural	• Eating a range of fruits and vegetables. (EYFS)	**Prepare:** • Wash and drain fruits. • Chop using the claw technique. • Chop a range of foods, including bananas, cucumber and prepared pears, pineapple, peppers and celery. • Peel bananas, satsumas. **Combine & Assemble:** • Stir with wooden spoon. • Use fruit juice to prevent browning. **Work in the Kitchen:** • Follow simple recipes. • Wash up items by removing excess food, washing, rinsing and drying.	• **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)
DK			• Make food choices based on colour and quantity of sugar.	• Make food choices based on Y1 plus quantities of fat and salt and dietary requirements (vegans and vegetarians). (Y2)

Year 1: Spring

Mechanisms: Moving Pictures

Pupils will identify someone in their **home environment** that they would like to send a card or message to, and will design and make a card with moving words or pictures. In focused practical tasks, pupils will make simple linkages like levers.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **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)	**Mechanisms:** • A **mechanism** produced movement in a product. • 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. **D&T Shaping the World:** • Examples of levers in everyday life include door handles, see-saws, windscreen wipers. Examples of slides in everyday life include drawers/runners and some ladders. • **Artists** often create art for its own sake. **Designers** create things that are useful and have a purpose.	• **Mechanisms:** A buggy has a body, wheels, axles, axle holders and chassis. Axles can be fixed or free. (Y2 Spr1) • **Science:** Mechanisms can change the direction of the force or reduce the amount of force required to do work. (Y5 Sum1) • **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) • **Mechanisms:** A cam changes the direction of movement from rotary to reciprocal. (Y5 Sum2)
	Procedural	• Making marks and simple shaping and joining techniques (EYFS)	• **Shaping:** Make holes using a sharp pencil and adhesive putty (Blu Tac). • **Shaping:** Shape card with scissors. • **Joining:** Use a split pin, sticky fixers, Sellotape and folding to join materials, and adhesive putty (Blut Tac) to temporarily join materials. • **Finishing:** Finish products with decorations using colouring pencils and decorations made or sourced from a computer.	• **Marking out:** Use a pencil and ruler to mark out the position of holes and straight lines. (Yr 4 Spr) • **Shaping:** Shape paper dowel with snippers and by bending. (Yr 4 Spr) • **Joining:** Use a wider variety of push fit components such as rubber washers, cams and paper clips used as modelling wire. (Yr 4 Spr)
Disciplinary			• **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.	• **Design Values:** Use design criteria based on the values of **Inclusivity and Accessibility**. (Y1 Sum) • **Identify User Needs:** Use interviews to identify user needs. (Y1 Sum) • **Communicate Designs:** Draw simple design ideas and label them. (Y2 Sum)

Year 1: Summer

Structures: Outdoor Space

Pupils will interview the key stakeholder (e.g. head teacher) who is redesigning an outdoor space **in the local community** to understand their needs. They will then create a model to communicate their designs. In the focused practical tasks, pupils create structures using card, paper, straws, wood and plasticine/clay.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **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)	**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. **Materials:** • Materials include woods, paper, card, rubber, plastics, metals, fabrics, glass, rock, water, plasticine/clay. **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).	• Making structures more stable and stronger (Y2 Spr1, Y3 Aut1) • Shell structures and frame structures (Y4 Spr)
	Procedural	• **Marking out:** Use a pencil and ruler to mark out the position of holes and straight lines before shaping them. (Y1 Spr) • **Shaping:** Shape paper and card with scissors. (Y1 Spr) • **Joining:** Use glue sticks and folding to join materials. (Y1 Spr)	• **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.	• Shaping and joining using a wider range of materials and techniques.
Disciplinary		• **Design Values:** Use shared design criteria based on the values of **Visual Appeal**; **Materials**; **Function**. (Y1 Spr) • **Evaluate:** Evaluate products according to the design criteria. (Y1 Spr) • **Make, Test, Iterate:** Designing is about trying something and seeing what works, and then trying again. (Y1 Spr)	• **Design Values:** Use design criteria based on the values of **Inclusivity and Accessibility**. • **Identify User Needs:** Use interviews to identify user needs. • **Generate Ideas:** Take photographs and use these as inspiration. • **Communicate Designs:** A model is a way of showing a design idea in 3D. • **Communicate Designs:** When designers communicate their ideas, they need to be drawn at the right size. • **Communicate Designs:** Talk about simple design ideas with others.	• **Design Values:** Use design criteria based on the value of the **Making Process**. • **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) • **Generate Ideas:** Use a wider range of techniques to generate ideas. • **Communicate Designs:** Draw simple design ideas and label them. (Y2 Sum)

Year 2: Autumn 2

Food: Salads

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive Knowledge	Conceptual	• **Food Sources**: Fruits and vegetables come from plants (including trees). Fruits contain a plant's seeds. Vegetables are part of the plant. (Y1) • **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) • 'Eating a rainbow' means to different types of fruits and vegetables, that might have lots of different colours. (Y1) • **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) • **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) • **Science:** Humans have five senses, smell, taste, touch, sight and hearing. (Y1 Sum2) • **Science:** The five senses are each associated with different body parts (eyes, ears, nose, tongue) (Y1 Sum2) • **Science:** Materials have different physical properties, some materials are hard whilst others are soft, some can be described as rough whilst others are smooth. (Y1 Spr)	**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). **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. **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.	• **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) • **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) • **Food Safety & Hygiene**: The difference between 'best before' and 'use by' (Y3)
	Procedural	• **Prepare**: Chop a range of foods using the claw technique. (Y1) • **Work in the Kitchen**: Follow simple recipes and wash up items by removing excess food, washing, rinsing and drying.	**Prepare:** • Use senses (sight, smell and touch) to check foods for any bits that should not be eaten. • Remove the outer leaves of lettuce and wash and drain them. • 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. **Combine & Assemble:** • Dress salad using two utensils and layer food on a salad bed.	• **Prepare**: Chop an increasingly complicated selection of foods (e.g. onions, peppers).
Disc.		• Make food choices based on colour and quantity of sugar.	• Make food choices based on colour and quantity of sugar, plus quantities of fat and salt, and dietary requirements (vegans and vegetarians).	• Make food choices based on Y1-2 plus knowledge of food allergies. (Y3)

Year 2: Spring 2

Mechanisms: Wheels & Axles

In this engineering project, pupils design a buggy that will travel down a ramp and roll the furthest possible distance from its starting point. In the focused practical tasks, pupils will make and test different configurations of buggy, including fixed and free axles and wheels of different sizes and thickness.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **Science:** Materials have different properties and are used to make different objects. (Y1 Spr1) • **Science:** Physical properties of materials include hard/soft (Y1 Spr1), malleable/not malleable, windproof/not windproof. (Y2 Spr1) • **History:** The wheel was an important invention in the development of transport. (Y1 Spr) • **Materials:** Materials include woods, paper, card, rubber, plastics, metals, fabrics, glass, rock, water, plasticine. (Y1 Sum) • **Mechanisms:** A mechanism has an input and an output and changes movement or makes it easier (Y1 Spr) • **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).	**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. **Structures:** • **Triangulation** makes structures stronger and more stable. **D&T Shaping the World:** • **Engineers** are scientists who use their knowledge to make things that work like bridges and cars.	• **Science:** Mechanisms can change the direction of the force or reduce the amount of force required to do work. (Y5 Sum1) • **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) • **Mechanisms:** A cam changes the direction of movement from rotary to reciprocal. (Y5 Sum2)
	Procedural	• **Marking out:** Use a pencil and ruler to mark out the position of holes and straight lines before shaping them. (Y1 Spr) • **Shaping:** Shape paper and card (Y1 Spr) and pipe cleaners and art straws with scissors. (Y1 Sum) • **Shaping:** Make holes using a hole punch, and by using a sharp pencil and adhesive putty. (Y1 Spr) • **Joining:** Use glue sticks (Y1 Spr), PVA glue, sellotape and masking tape to join materials. (Y1 Sum)	• **Shaping:** Shape wooden lollipop sticks. • **Joining:** Use pre-drilled push fit items to join them, and sticky pads to join materials.	• Shaping and joining using a wider range of materials and techniques.
Disciplinary		• **Design Values:** Use shared design criteria based on the values of **Visual Appeal**; **Materials**; **Function** (Y1 Spr) **Inclusivity and Accessibility**. (Y1 Sum) • **Evaluate:** Evaluate products according to the design criteria. (Y1 Spr) • **Make, Test, Iterate:** Designing is about trying something and seeing what works, and then trying again. (Y1 Spr) • **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)	• **Generate Ideas:** Use 'what if' questions to generate ideas. • **Make, Test, Iterate:** Designers and engineers build **prototypes** to test and improve their products.	• **Generate Ideas:** Use premade templates, 'draw and fold', story books and personal photographs to inspire designs and creative ideas. (Y2 Sum) • **Make, Test, Iterate:** When using textiles, designers make a pattern from paper to test before making the final product. (Y2 Sum)

Year 2: Summer

Textiles: Glove Puppets

Pupils will design and make a glove puppet, made to fit the size of their hand, which will help to tell a story to children in EYFS (or other people) in the **school environment**. In the focused practical tasks, pupils practise joining fabrics in different ways, including a running stitch with needle and thread, glue and staples.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **Science:** Materials can be artificial (man-made) or natural. (Y1 Spr1) • **Science:** One way to use materials more sustainably is to reduce, reuse and recycle wherever possible. (Y2 Spr1) • **Science:** Sustainability means meeting the needs of the people today while meeting the needs of people in the future. (Y2 Spr1) • **Science:** Physical properties of materials include rough/smooth. (Y2 Spr1)	**Materials:** • Materials - including different types of fabric - have different properties and are used to make different objects.	• **Science**: Materials have chemical and physical properties. (Y4 Sum2)
	Procedural	• **Shaping:** Make holes using a hole punch and shaping paper and card with scissors. (Y1 Spr)	• **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. • **Marking out:** Position **patterns** on fabrics in a way that reduces waste. • **Shaping:** Shape fabric using scissors, and use rubber bands to shape materials. • **Joining:** Use staples and fabric glue to join materials. • **Joining:** Thread a needle and join fabrics using a **running stitch**. • **Joining:** Use a **seam allowance** to make sure that the patterns keep their shape. • **Finishing:** Finish fabrics by decorating with pipe cleaners or other pieces of fabric.	• **Joining:** Sew using a back stitch, and use press studs, buttons and tying with ribbon to join fabrics. (Y3 Spr)
Disciplinary		• **Design Values:** Use shared design criteria based on the values of **Visual Appeal**; **Materials**; **Function** (Y1 Spr) **Inclusivity and Accessibility**. (Y1 Sum) • **Identify User Needs:** Make choices about the specific users of a product. (Y1 Spr) • **Evaluate:** Evaluate products according to the design criteria. (Y1 Spr) • **Make, Test, Iterate:** Designing something, see what works, and then try again. (Y1 Spr)	• **Design Values:** Use design criteria based on the value of the **Making Process**. • **Identify User Needs:** Contribute to design criteria by using approximate measurements (of the hand). • **Generate Ideas:** Use premade templates, 'draw and fold', story books and personal photographs to inspire designs and creative ideas. • **Make, Test, Iterate:** When using textiles, designers make a pattern from paper to test before making the final product. • **Communicate Designs:** Draw simple design ideas and label them.	• **Design Values:** Use shared design criteria based on the value of **Sustainability** (and the whole life cycle of the product). (Y3 Aut) • **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) • **Generate Ideas:** Use a wider range of techniques to generate ideas.

Year 3: Autumn 1

Structures: Picture Frames

Pupils will build knowledge of frame and shell structures by designing and creating structures that can serve as picture frames that would be sold in a **commercial context**. In the focused practical tasks, pupils will make and test different ways of making their structures stand (with a stand and ties) or hang on a wall.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **Science:** Physical properties of materials include hard/soft, dull/shiny, rough/smooth, malleable/not malleable, waterproof/not waterproof. (Y2 Spr1) • **Science:** Sustainability means meeting the needs of the people today, whilst meeting the needs of people of the future. One way to use materials more sustainably is to reduce, reuse and recycle wherever possible. (Y2 Spr1) • **Structures:** Free-standing structures can be made **stronger** with stiffer materials, thicker materials, or with more layers of material (laminating). (Y1 Sum) • **Structures:** Free-standing structures can be made more **stable** by having a wider base or a heavier base. (Y1 Sum) • **Structures:** Triangulation makes structures stronger and more stable. (Y2 Spr)	**Structures:** • Triangulation makes structures and **joints** stronger and more stable. • Free-standing structures can be made more stable by adding a **stand**. • **Ties** can make structures more stable. **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.	• **Structures:** A shell structure has a continuous outer 'shell' and do not have a frame, like an egg shell or a dome in a building. (Y4 Spr) • A frame structure is made from separate pieces of material called members that form a frame, like a climbing frame or most houses. (Y4 Spr)
	Procedural	• **Marking out:** Use a pencil and ruler to mark out the position of holes and straight lines before shaping them. (Y1 Spr) • **Shaping:** Shape paper and card; (Y1 Spr), plastic sheets and lollipop sticks. (Y2 Spr) • **Joining:** Use glue sticks (Y1 Spr), PVA glue, masking tape (Y1 Sum) and sticky pads (Y2 Spr). • **Finishing:** Finish using decorations sourced or made using a computer (Y1 Aut).	• **Marking out:** Use a set square to keep right angles. • **Shaping:** Use a bradawl to make a hole. • **Shaping:** Cut hard materials like wood with a junior hacksaw and clamps. • **Finishing:** Finish products with decorations using paints.	
Disciplinary		• **Design Values:** Use shared design criteria based on the values of **Visual Appeal**; **Materials**; **Function** (Y1 Spr); **Inclusivity and Accessibility** (Y1 Sum); the **Making Process.** (Y2 Sum) • **Identify User Needs:** Make choices about the specific users of a product (Y1 Aut) • **Evaluate:** Evaluate products according to the design criteria. (Y1 Spr) • **Generate Ideas:** Use photographs, 'what if' questions and storybooks to inspire ideas. • **Make, Test, Iterate:** Designing something, see what works, and then try again. (Y1 Spr) • **Communicate Designs:** Draw simple design ideas and label them. (Y2 Sum)	• **Design Values:** Use shared design criteria based on the value of **Sustainability** (and the whole life cycle of the product). • **Generate Ideas:** Disassemble different products and use these as inspiration for creating own ideas.	• **Design Values:** Develop own, individual design criteria based on design values. (Y3 Spr) • **Generate Ideas:** Use constraints (e.g. max A5 page), Zwicky tables, and inspiration from nature to generate ideas. (Y3 Spr)

Year 3: Spring

Textiles: Keeping it Contained

Pupils will design a product with a specific user and problem in mind (e.g. teacher keeps breaking sunglasses that are loose in their backpack), in a **school** or **home** context. In the focused practical tasks, pupils will practise ways of joining fabrics, including over stitch and using press studs, buttons and ribbons.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **Materials:** Materials - including different types of fabric - have different properties and are used to make different objects. • **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)		• **Science**: Materials have chemical and physical properties. (Y4 Sum2)
	Procedural	• **Marking out:** Temporarily fix a pattern to a material using pins, staples (positioning them to reduce waste), and mark out using chalk. (Y2 Sum) • **Marking out:** Position **patterns** on fabrics in a way that reduces waste (Y2 Sum) • **Shaping:** Shape fabric using scissors and use rubber bands to shape materials (Y2 Sum) • **Joining:** Use staples and fabric glue to join materials (Y2 Sum) • **Joining:** Thread a needle and join fabrics using a **running stitch** (Y2 Sum) • **Joining:** Use a **seam allowance** to make sure that the patterns keep their shape (Y2 Sum) • **Finishing:** Finish fabrics by decorating with buttons, pipe cleaners or other pieces of fabric (Y2 Sum)	• **Joining:** Join fabrics using an over stitch. • **Joining:** Use press studs, buttons and tying with ribbon to join fabrics. .	• **Joining:** Join fabrics using a back stitch. (Y6 Aut) • **Finishing:** Release tension by snipping along a curved seam. (Y6 Aut) • **Finishing**: Finish using a blanket stitch (Y6 Aut). • **Finishing**: Make minor adjustments to ensure a good fit. (Y6 Aut)

Year 3: Spring

Textiles: Keeping it Contained

Pupils will design a product with a specific user and problem in mind (e.g. teacher keeps breaking sunglasses that are loose in their backpack), in a **school** or **home** context. In the focused practical tasks, pupils will practise ways of joining fabrics, including over stitch and using press studs, buttons and ribbons.

	Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Disciplinary	• **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) • **Identify User Needs:** Identify design criteria through approximate measurements. (Y2 Sum) • **Evaluate:** Evaluate products according to the design criteria. (Y1 Spr) • **Generate Ideas:** Use photographs, 'what if' questions and storybooks to inspire ideas (Yr 3 Aut 1) • **Make, Test, Iterate:** Designing something, see what works with the pattern, and then try again. (Y1 Spr) • **Communicate Designs:** Draw simple design ideas and label them. (Y2 Sum)	• **Design Values:** Develop own, individual design criteria based on design values. • **Identify User Needs:** Identify a user's needs in a specific context, when they have a specific problem, through observations. • **Identify User Needs:** Identify a user's needs through a 'user trip' (doing the task that the user needs to do). • **Generate Ideas:** Use prototyping and constraints (size and colour).	• **Design Values:** Develop own design criteria based on the value of **Necessity**: do we really *need* to design this product? (Y6 Spr1) • **Identify User Needs:** Develop design criteria with exact measurements. (Y6 Aut) • **Generate Ideas:** Use 'quick draw eights' to generate ideas. (Y4 Sum2)

Year 3: Summer 1

Food: Sandwiches

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive Knowledge	Conceptual	• **Food Sources**: Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat and dairy products). • **Nutrition & Eating**: Vegetarians choose not eat animal meat. Vegans do not eat any animal product. (Y2) • Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. (Y3 Spr1) • **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 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. **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. **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.	• **Food Sources**: Knowledge of where other foods come from, such as pasta is made from wheat flour and water (and sometimes egg). (Y5) • **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) • **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)
	Procedural	• **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) • **Work in the Kitchen**: Follow simple recipes and wash up items by removing excess food, washing, rinsing and drying.	**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.	• **Prepare**: Chop an increasingly complicated selection of foods (e.g. onions, peppers). • **Cook**: Use a hob to boil other foods (vegetables and pasta) and to sauté and simmer. • **Work in the Kitchen**: Wash up items in the most appropriate order, starting with least dirty, and change washing up water as required. (Y4)
DK		• Make food choices based on colour and quantity of sugar, plus quantities of fat and salt, and dietary requirements (vegans and vegetarians).	• Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; plus knowledge of food allergies.	• Make food choices based on Y1-3 plus knowledge of food miles. (Y4)

Year 4: Autumn 2

Food: Soups

Pupils will learn the sources of beans and lentils, mushrooms and herbs and spices and about food intolerances. They will learn to safely use a blender and a hob to sauté, simmer and boil food. Pupils get the opportunity to prepare a variety of ingredients, make a soup base, tomato soup and other soups.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive Knowledge	Conceptual	• **Ingredients**: Foods come from a range of sources, including plants (fruits and vegetables) and animals (meat and dairy products). • **Nutrition**: Vegetarians choose not to eat animal meat. Vegans do not eat any animal product (Y2). Some people are allergic to foods, which means their body has a reaction when they eat them (Y3). • Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet (Y3). • **Food 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). • **Safety:** 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). Cheese, cooked meats and eggs are high-risk foods. Consider the importance of the refrigerator in terms of food safety (Y3).	**Ingredients:** • 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. **Nutrition:** • 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. **Safety:** • Hobs and hand blenders need to be used with care, keeping our fingers away. • When blending hot liquids, the blender lid should be on and/or it is kept well away from the user. **Food Hygiene:** • 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.	• **Ingredients**: Knowledge of where other foods come from, and how they can be minimally, moderately, significantly or ultra processed (Y6). • **Nutrition**: A healthy diet is made up of mostly minimally and moderately processed foods. Too many ultra-processed foods should be avoided (Y6). • **Food Safety**: 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). • Pasta and couscous are high-risk foods (Y5).
	Procedural	• **Processes**: Chop an increasingly complex selection of foods (Y3) using the claw and bridge technique (Y1) check foods for any bits that should not be eaten (Y2). • Mathematics: Measure and compare volume/capacity (ml/l) (Y3). • **Food Hygiene:** 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).	**Processes:** • Chop (dice) foods into smaller pieces (e.g. carrots, celery). • Crush garlic. • Measure volumes in millilitres and litres using a measuring jug. • Use a food processor or hand mixer. • Use a hob to sauté and simmer food, and to boil (vegetables). **Food Hygiene:** • Wash up items in the most appropriate order, starting with least dirty, and change washing up water as required.	• **Processes**: Chop an increasingly complicated selection of foods (e.g. onions) and incorporate estimation skills into measurements. • Use a blender or hand-held blender (Y5). • Use an oven to roast vegetables (Y5).
DK		• **Food Choices:** Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; and knowledge of food allergies (Y3).	**Food Choices:** • Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; knowledge of food allergies; plus food miles.	• **Food Choices:** Make food choices based on Y1-4 plus time taken to prepare (Y5).

Year 4: Spring

Mechanisms: Pulleys

Pupils will use a series of mechanisms like levers, pulleys and cams to create a video or scene that conveys a message to a **wider environment** content. In the focused practical tasks, pupils will make a range of mechanisms and test them to see which provide the most appropriate movement for their video.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **Science:** Materials have different properties and are used to make different objects. (Y1 Spr1) • **Science: Friction** is a force between two surfaces that are sliding or trying to slide over each other. • The bumpier or rougher the surfaces, the more friction there will be. • **Mechanisms:** • A **mechanism** is a moving part in a product. (Yr1 Spr1) • A **lever** is a simple mechanism. It is a **rigid beam** that **pivots** (turns). (Yr1 Spr1) • A **slider** is a simple mechanism. It is a rigid beam that moves back and forth on a straight line. (Yr1 Spr1) • **Mechanisms:** Axles can be fixed or free. (Y2 Spr1)	**Mechanisms:** • A **linkage** is a system of levers that are joined together to control movement. • Examples of linkages in everyday life (including umbrellas, scissor lifters, tool-boxes and excavators). • Linkages can create a range of different movements e.g. **reciprocating** and **oscillating.** • A mechanism has an **input** and an **output.** • A **cam** is a mechanism that changes **rotary** motion to **reciprocating.** • Different-shaped cams produce different **follower** movements. • Examples of cams in everyday use include car engines, photocopiers and children's toys. • A **pulley** is a grooved wheel over which a belt or rope is run. • Examples of pulleys used in everyday life (theatre to open and close the curtains, fishing rod, zip wire, cable car). **D&T Shaping the World:** • Ancient Egyptians and Ancient Greeks used knowledge of mechanisms to make levers and pulleys. (Link to **History**).	• **Science:** Mechanisms can change the direction of the force or reduce the amount of force required to do work. (Y5 Sum1) • **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) • **Mechanisms:** A cam changes the direction of movement from rotary to reciprocal. (Y5 Sum2) • **Structures:** A shell structure has a continuous outer 'shell' and does not have a frame, like an eggshell or a dome in a building. (Y4 Spr) • A frame structure is made from separate pieces of material called members that form a frame, like a climbing frame or most houses. (Y4 Spr)
	Procedural	• Making marks and simple shaping and joining techniques. (EYFS) • **Mathematics**: Use a ruler to measure and mark lengths in centimetres. (Y4) • **Joining:** Use a range of glues, tapes and pre-drilled push fit items to join materials.(Y2 Spr2) • **Finishing:** Finish by using decorations/information created or sourced from a computer and/or paint. (Y1 Spr1) • **Shaping:** Make holes by using a sharp pencil and adhesive putty (Blu Tack). (Y1 Spr1)	• **Marking out:** Use a pencil and ruler to mark out the position of holes and straight lines. • **Shaping:** Shape paper dowel with snippers and by bending. • **Joining:** Use a wider variety of push fit components such as rubber washers, cams and paper clips used as modelling wire. • **Joining:** Make minor alterations when positioning components to reduce the effects of friction.	• Shaping with increasingly sophisticated tools. (KS3)

Year 4: Spring

Mechanisms: Pulleys

	Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Disciplinary	• **Design Values:** Develop own, individual design criteria based on design values. (Y3 Spr) • **Generate Ideas:** Use constraints (Yr 3 Spr). • **Make, Test, Iterate:** Designing is about trying something and seeing what works, and then trying again.	• **Design Values:** Create own **design criteria** based on the values of **Visual Appeal**; **Materials**; **Function**. • **Evaluate:** **Evaluate** products according to the design criteria. • **Communicate Designs:** Contribute to a group storyboard that shows a process for making.	• **Communicate Designs:** Draw designs with measurements in centimetres. (Y6 Aut1)

Year 4: Summer 2

Programming/Structures: Mood Lighting

Pupils will design a lighting system that creates mood lighting for different **leisure** settings (e.g. bedtime, party, waking up). They will review knowledge of electrical circuits from Science and programming from Computing. In the focused practical tasks, pupils will design 3D structures from 2D nets to house the lighting system.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **Structures:** 2D shapes have a length and width. 3D shapes have a length and width and height. (Y1 Sum) • **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) • **Structures:** Triangulation makes structures and joints stronger and more stable (Y3 Aut) • **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) • **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)	**Structures:** • A **shell structure** has a continuous outer 'shell' and does not have a frame, like an eggshell or a dome in a building. • A **frame structure** is made from separate pieces of material called members that form a frame, like climbing frames or houses. • Frame and shell structures can be made by folding 2D **nets**. **Programming (if not taught in Computing):** • Electronic control systems have inputs, outputs and a central processer. • 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 can be changed.	• **Mathematics:** Nets and 3D visualisation (KS3)
	Procedural	• **Marking out:** Use a pencil, ruler and set square to mark out shapes before cutting them. (Y3 Aut) • **Shaping:** Shape paper, card, aluminium foil and wooden lollipop sticks using scissors. (Y2 Sum) • **Shaping:** Make holes with hole punch or a sharp pencil/putty. • **Joining:** Use glue sticks to join materials. (Y1 Spr) • **Finishing:** Finish products using colouring pencils and decorations made or sourced using a computer. (Y1 Spr)	• **Shaping:** Score with scissors to get a sharp crease.	• Shaping with increasingly sophisticated tools. (KS3)
Disciplinary		• **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:** Make choices about the specific users of a product and identify needs through interviews. (Y1 Sum) • **Generate Ideas:** Use Zwicky tables, 'what if' questions, story books and ideas from nature to generate ideas. • **Communicate Designs:** Draw simple design ideas. (Y2 Sum)	• **Generate Ideas:** Use 'quick draw eights' to generate ideas. • **Make, Test, Iterate:** Design process is iterative, and includes generating ideas; evaluating; testing and refining.	• **Generate Ideas:** Develop additional ways of generating ideas and become confident in deciding which works best in different situations. (KS3)

Year 5: Autumn 2

Programming: Interactive Display

In this programming project, pupil review knowledge of mechanisms from Year 4 D&T; electrical circuits from Science; and programming from Computing to design and make an interactive information display for the **school** or **local community**.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **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) • **Programming:** Electronic control systems have inputs, outputs and a central processer. 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. • **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)	**Programming:** • Sensors can sense light, sound, and motion and can be used to trigger a program. • Some components, like LEDs and power terminals, need to be connected correctly (positive and negative pins the correct way round) to function. **D&T Shaping the World:** • Technology – and programmable technology – has had a huge impact on the world in living memory. Also review from Y4 Spr **Mechanisms:** • 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.	• **Science:** Understanding how mechanisms relate to work done (KS3).
	Procedural	• **Marking out:** Use a set square to keep right angles (Y3). • **Mathematics**: Use a ruler to measure and mark lengths in centimetres. (Y4) • **Shaping:** Make a hole using a bradawl. (Y3 Aut) • **Finishing:** Finish the product by using decorations/information created or sourced from a computer and/or paint.		
Disciplinary		• **Design Values:** Develop own design criteria based on the values of **Visual Appeal**; **Materials**; **Function**; **Inclusivity and Accessibility**; **Making Process**; and **Sustainability**. • **Evaluate:** Evaluate products according to the design criteria. • **Communicate Designs:** Draw an exploded diagram (Y4 Spr)		

Year 5: Spring 2

Food: Sauces

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive Knowledge	Conceptual	• **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) • **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) • Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. (Y3) • **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) • Science: Poor thermal conductors (thermal insulators) do not allow energy to be transferred through them easily when heated. (Y4 Sum2)	**Food Sources:** • Pasta is made from wheat flour and water (and sometimes egg). • Couscous is a type of pasta. **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.	• **Food Sources**: Knowledge of where other foods come from, and how they can be minimally, moderately, significantly or ultra processed. (Y6) • **Nutrition & Eating**: A healthy diet is made up of mostly minimally and moderately processed foods. Too many ultra-processed foods should be avoided. (Y6) • **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)
	Procedural	• **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) • Mathematics: Measure and compare mass (g/kg). (Y3) • **Cook**: Use a hob to sauté and simmer food, and to boil (vegetables). (Y4) • **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).	**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) **Combine & Assemble:** • Use a blender or hand-held blender. • Whisk (to make roux and Bechamel sauce). **Cook:** • Use a hob to boil (pasta). • Use an oven to roast vegetables and brown cheese.	• **Prepare**: Chop an increasingly complicated selection of foods. • **Cook**: Use an oven to bake. (Y6)
DK		• Make food choices based on colour; quantities of sugar, fat, and salt; dietary requirements; knowledge of food allergies; food miles.	• 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.	• Make food choices based on Y1-5 plus carbon footprint of production and transport; occasion; and cost. (Y6)

Year 5: Summer

Structures: Flat Pack

Pupils will design and produce 'flat pack' toys, which can be slotted together by the end user as a **leisure** activity. Pupils could design this to be sold in a museum shop or toy shop **(enterprise).** In the focused practical task, pupils will use computer-aided design to create slottable shapes and test them quickly.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **Structures:** **2D** shapes have a **length** and **width**. **3D** shapes have a **length** and **width** and **height**. (Y1 Sum) • **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) • **Structures:** Triangulation makes structures and joints stronger and more stable (Y3 Aut) • **Science:** Physical properties of materials include hard/soft, dull/shiny, rough/smooth. (Y2 Spr1) • **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)	**Structures:** • Structures can be made by slotting items together. **D&T Shaping the World:** • Flat pack furniture has made it easier for people to buy and transport furniture to their home.	• Wider application of slotting to create and join structures (KS3)
	Proc.	• **Shaping:** Cut paper using scissors. (Y1 Spr) • **Finishing:** Finish using decorations sourced or made using a computer. (Y1 Aut)	• **Joining:** Join pieces by slotting. • **Finishing:** File or sand to smooth edges.	
Disciplinary		• **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) • **Identify User Needs:** Make choices about the specific users of a product (Y1 Spr) • **Generate Ideas:** Use premade templates as inspiration for creating own patterns. (Y2 Sum) • **Communicate Designs:** A model is a way of showing a design idea in 3D (Y1 Sum)	• **Make, Test, Iterate:** Use Computed-Aided design to test models quickly and effectively. • **Communicate Designs:** Create a flow chart for the process of making (the model/toy from the flat pack). • **Communicate Designs:** Draw an exploded diagram.	• **Communicate Designs:** Draw designs with measurements in centimetres. (Y6 Aut1)

Year 6: Autumn 1

Textiles: Head Covering

Pupils will design a head covering or hat for themselves or for a friend (whose head they can measure) for a specific occasion in the **home**, **school** or **local community**. In the focused practical tasks, pupils will review and learn new joining and finishing techniques.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **Structures:** Free-standing structures can be made stronger with stiffer materials, thicker materials, or with more layers of material (laminating). (Y1 Sum) • **Structures:** Frame and shell structures. (Y4 Sum) • **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)		
	Procedural	• **Marking out:** Temporarily fix a pattern to a material using pins (positioning them to reduce waste), and mark out using chalk. (Y2 Sum) • **Shaping:** Shape lollipop sticks, pipe cleaners and fabric using hole punch and scissors. (Y1 Spr) • **Joining:** Use glue, staples, running stitch to join fabrics, using a seam allowance (Y2 Sum); sew using an over stitch, and use press studs, buttons and tying with ribbon to join fabrics. (Y3 Spr) • **Finishing:** Finish fabrics by decorating with buttons, pipe cleaners or other pieces of fabric. (Y2 Sum)	• **Joining:** Join fabrics using a back stitch. • **Finishing:** Release tension by snipping along a curved seam. • **Finishing**: Finish using a blanket stitch. • **Finishing**: Make minor adjustments to ensure a good fit.	• Wider range of joining and finishing stitches (KS3).
Disciplinary		• **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:** Make choices about users and purpose. • **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.	• **Identify User Needs:** Develop design criteria with exact measurements. • **Evaluate:** Evaluate products though secondary research and evaluate the sources of this secondary information. • **Communicate Designs:** Draw designs with measurements in centimetres.	• **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) • **Evaluate:** Evaluate products against a growing list of design values. (KS3) • **Communicate Designs:** Complete scale and isometric drawings of designs. (KS3)

Year 6: Spring 1

Systems: Sustainable Systems

In the final Design & Technology project of primary school, pupils will identify a problem or issue related to sustainability, identify user needs in this area and design a system – rather than a product – that will help address these needs.

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive	Conceptual	• **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]	**D&T Shaping the World:** • Designers and engineers have developed sustainable systems in agriculture, waste and electricity generation	
	Procedural	• [Required prior knowledge will depend on the problem that pupils aim to solve and the potential solutions they design.]		
Disciplinary		• **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.	• **Design Values:** Develop own design criteria based on the value of **Necessity**: do we really *need* 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.	• **Design Values:** Develop design criteria based on additional values such as cost and specific measures like emissions of CO_2 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)

Year 6: Summer 1

Food: Savoury Snacks

		Required Prior Knowledge	Knowledge to be Explicitly Taught	How Knowledge will be Built Upon
Substantive Knowledge	Conceptual	• **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) • **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) • Science: The main food groups are carbohydrates (starch and sugars), proteins, fats, fibre, vitamins and minerals. Humans need a balanced diet. (Y3) • **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) • Science: Bacteria and viruses are microorganisms. Some bacteria are helpful, and others can cause diseases in other organisms. (Y6 Spr2)	**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). **Nutrition & Eating:** • A healthy diet is made up of mostly minimally and moderately processed foods. Too many ultra-processed foods should be avoided. **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.	• **Food Sources**: Knowledge of where other foods come from. • **Nutrition & Eating**: Understanding recommended daily intakes of various foods, and how physical activity affects this. (KS3) • **Food Safety & Hygiene**: The different microorganisms that can cause diseases; what harm they cause and how. (KS3)
	Procedural	• **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) • Mathematics: Measure and compare mass (g/kg). (Y3) • **Cook**: Use a hob to sauté/simmer (Y4) and an oven to roast. (Y5) • **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).	**Prepare:** • Crack eggs. **Combine & Assemble:** • Rub flour into butter. • Shape and cut using cutters. **Cook:** • Use an oven to bake food.	• **Prepare**: Chop an increasingly complicated selection of foods. • **Cook**: Use a growing range of appliances to cook (e.g. slow cooker; grill; air fryer).
DK		• 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.	• 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.	• Make food choices based on Y1-6 plus meal planning to ensure waste is minimised. (KS3)

D&T Conceptual Knowledge

Part 1 of 3

	Materials	Mechanisms
EYFS	• Materials can be artificial (man-made) or natural.	
Y1	• Materials include woods, paper, card, rubber, plastics, metals, fabrics, glass, rock, water, plasticine/clay • Science: Materials have different properties and are used to make different objects. • Science: Physical properties of materials include hard / soft, dull / shiny, rough / smooth.	• 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.
Y2	• Science: Physical properties of materials include the above plus malleable / not malleable, waterproof / not waterproof, heatproof / not heatproof, windproof / not windproof, absorbent / not absorbent. • Materials - including different types of fabric - have different properties and are used to make different objects.	• 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.
Y3	• Science: Physical properties of materials include the above plus transparent / translucent / opaque, magnetic / non-magnetic.	
Y4	• Science: Physical properties of materials include the above plus good electrical conductor / poor electrical conductor (insulator), good thermal conductor / poor thermal conductor (insulator) • Science: Chemical properties of materials include toxicity and flammability.	• 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. • Pulleys can redirect forces, or reduce the force required to lift heavy objects.
Y5	• Explicit review of the above.	• Explicit review of the above.
Y6	• Explicit review of the above.	

EYFS Milestones: Art and Design

	Media and Materials
N2	• Shows an interest in modelling. • Explores different materials ('junk' as well as blocks, clay, fabric). • Use imagination to decide what they can do with different materials. • Enjoy feeling materials with different textures. • Can attempt to join two different materials together when offered appropriate tools and joining methods.
N3-4	• Enjoy junk modelling. • Explore printing using different objects. • Join different materials using glue. • Talk about what the materials look and feel like. • Join materials together using sellotape. • Use junk modelling to create own representations of objects/people. • Choose different materials for different effects. • Use different cut materials to make a simple image. • Use objects or tools to print a pattern or image with support.
Reception	• Print or collage independently to create a pattern or image. • Make props to use in their role-play and small world play. • Combine different techniques to create a picture. • Evaluate and adapt their work. • Explain how they created something, talking about the materials and techniques they have used. **Confidently select and use variety of materials, tools and techniques independently, explain their choices, and evaluate their work.**

EYFS Milestones: Fine Motor Skills

	Using Mark Making Tools	Manipulating other Tool and Materials
Nursery 2	• Imitates vertical, horizontal and then circular strokes. • Uses palmer grasp to hold mark making tools. • Uses large movements to make marks spontaneously e.g.: chalk on playground, paintbrushes on canvas. • Starts to show a preference for one hand used consistently for most activities.	• Drinks from an open cup. • Stacks 2-3 blocks on top of another. • Feeds themselves using a spoon. • Can change the shape of playdough using hands. • Can put a simple shape into a shape sorter. • Puts rings on a stick/ strings wide beads on a shoelace. • Is able to screw/twist a lid on a container. • Picks up small objects with thumb and one finger. • Turns pages of a hardback book independently • Hold a bucket of water/sand with a hook grip.
Nursery 3-4	• Begin to use mark-making tools such as paintbrushes, pens and chalk with a palmer grasp or digital pronate grasp. • Forms pre-writing shapes. • Draws circles, horizontal/vertical lines. • Develop a dominant hand. • Attempt to write their own name in a way they recognise. • Use mark-making tools such as paintbrushes, pens and chalk with a static tripod grasp, • Draws simple pictures which can be recognised by themselves and others. • Write their own name.	• Pour from one container to another with some accuracy. • Manipulate playdough to make representations of objects using their hands. • Join large construction pieces together. • Use tools to make changes to playdough. • Use a spoon or fork to eat independently. • Make snips in paper with scissors. • Use scissors to cut paper in half. • Use a knife to cut soft food. • Spread using a knife.
Reception	• Forms all the letters of their names correctly. • Use an effective pencil hold working towards a dynamic tripod grasp. • Adds detail to drawings, e.g. eyelashes or windows on a house. • Forms recognisable letters for the full alphabet. • Forms all letters of the alphabet with correct formation. **Develop the foundations of a handwriting style which is fast, accurate and efficient.**	• Join small construction such as lego. • Make more detailed models with playdough. • Use tweezers to move small objects. • Use scissors to cut around a shape on paper. • Use a knife and fork, attempting to cut soft foods. • Use scissors with developing accuracy and control. • Safely use hammers. • Use a knife and fork effectively. **Use a range of small tools, including scissors, paint brushes and cutlery safely and effectively.**

D&T Conceptual Knowledge

Part 2 of 3

	Structures	Programming & Control
Y1	• 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.	• **Computing:** Electronic control systems have inputs, outputs and a central processer. • **Computing:** A process flow chart drives a programmable system. • **Computing:** Flow charts use key words of 'if', 'then', 'stop', 'start', 'repeat' and other command words (depending on software) • **Computing:** Programmes can run for a given number of loops or a set amount of time, or until something is no longer true. • **Computing:** A variable is something that be changed.
Y2	• Triangulation makes structures stronger and more stable.	
Y3	• Triangulation makes structures and joints stronger and more stable. • Free-standing structures can be made more stable by adding a stand. • Ties can make structures more stable.	
Y4	• Structures can be made by slotting items together. • A shell structure has a continuous outer 'shell' and do not have a frame, like an egg shell or a dome in a building. • A frame structure is made from separate pieces of material called members that form a frame, like a climbing frame or most houses. • Frame and shell structures can be made by folding 2D nets.	• **Science:** A complete circuit has at least one cell and at least one functioning component connected in a continuous loop. An incomplete circuit has components missing or is not connected in a continuous loop. • **Science:** A short circuit is a circuit with just a cell and no other components. They can be dangerous. • **Science:** Electrical components include: wire, lamp, buzzer, motor and switch. • **Science:** Electrical appliances should be switched off when not in use. • **Science:** Switches complete or break a circuit. • Apply the above to a D&T context.
Y5	• Explicit review of the above.	
Y6	• Explicit review of the above.	• **Science:** A non-renewable energy source is one that is used much faster than it is created. Fossil fuels take millions of years to form but minutes to burn, so we will run out. Burning fossil fuels to transfer electrical energy is a non-renewable energy source. • **Science:** Renewable energy sources quickly replenish themselves, meaning that we can use them again and again and we will not run out. Wind, solar, geothermal and hydrological power are all examples of renewable energy sources. • Apply the above to a D&T context.

D&T Conceptual Knowledge

Part 3 of 3

	D&T Shaping the World
Y1	• Examples of levers in everyday life include see-saws, wheelbarrows, door handles and scissors. • An artist makes something beautiful that has meaning. Designers make things that are useful and have a purpose, which may also look beautiful. • Designers and architects make models of spaces like towns to help them plan them.
Y2	• An artist makes something beautiful that has meaning. Designers make things that are useful and have a purpose, which may also look beautiful. Engineers are scientists who use their knowledge to make things that work like bridges and cars. • **History:** The wheel is a very important invention because it helped people to move heavy things more easily. They did not need to carry them or use animals to carry them.
Y3	• Free standing structures in the world around us have been made strong and stable with triangulation, using strong materials and having a wide base.
Y4	• **History:** Prehistoric Britons, Ancient Egyptians, Ancient Greeks and Ancient Maya used knowledge of strong structures to build Stonehenge, pyramids and temples a very long time ago. • Flat pack furniture has made it easier for people to buy and transport furniture to their home. • There are natural and artificial shell structures and frame structures all around us.
Y5	• Technology – and programmable technology – has had a huge impact on the world in living memory. • **History:** Prehistoric Britons, Ancient Egyptians, Ancient Greeks, Ancient Maya, Early Islamic Civilisation, and Romans used knowledge of mechanisms to make levers and pulleys.
Y6	• Designers and engineers have developed sustainable systems in agriculture, waste and electricity generation.

D&T Procedural Knowledge

	Marking Out	Shaping	Joining	Finishing
Year 1	• 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.	• 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.	• 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.	• Finish products with decorations using colouring pencils. • Finish products with decorations made or sources from a computer.
Year 2	• 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).	• Shape wooden lollipop sticks, rubber bands and fabrics.	• Use pre-drilled push fit items to join them. • Use sticky pads to join materials • Use a seam allowance to join fabrics. • 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.	• Finish fabrics by decorating with buttons, pipe cleaners or other pieces of fabric.
Y3	• Use a set square to keep right angles.	• Make a hole using a bradawl. • Cut hard materials using a junior hacksaw and clamps.	• Join fabrics using an over stitch. • Join fabrics using press studs, buttons, and tying with ribbon. • Join pieces by slotting.	• Finish products with decorations using paints.
Y4	• Review of the above.	• Score with scissors to get a sharp crease.	• Review of the above.	• File or sand to shape and smooth.
Y5	• Use a ruler to measure lengths in centimetres (Y4 Mathematics).	• Cut very hard materials, such as modelling wire with pliers.	• Review of the above.	• Review of the above.
Y6	• Review of the above.	• Review of the above.	• Join fabrics using a back stitch.	• Release tension by snipping along a curved seam. • Finish fabrics using a blanket stitch.

D&T Disciplinary Knowledge

Part 1 of 2

	Designing in Different Contexts	Design Values	Identifying User Needs	Evaluating Products

Y1	• Design a product for users in a **home** environment.
	• Design a product for users in a **local community** environment.
		• Design and evaluate based on:
		  • Visual appeal;
		  • Materials;
		  • Function;
		  • Inclusivity and accessibility.
			• 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).
				• Evaluate products according to the design criteria, which grows in complexity as the list of design values grow.

Y2	• Design a product for users in a **school** environment.	• Design and evaluate based on:
		  • The above values
		  • The making process.
			• Identify design criteria through approximate measurements.	

Y3	• Design a product for users in a **commercial** environment.	• Design and evaluate based on:
		  • The above values
		  • Sustainability (of the whole product life cycle).
			• 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	• Design a product for users in an **enterprise** environment. • Design a product for users in a **leisure** environment.	• Design and evaluate based on the above values.	• Explicit review of the above.	
Y5	• Design a product for users in a **wider environment**.	• Design and evaluate based on the above values.	• Explicit review of the above.	

Y6		• Design and evaluate based on:
		  • The above values
		  • Necessity (do we really *need* this product?).
			• Identify design criteria through exact measurements (cm).
			• Recognise the difference between needs and wants in user interviews.
			• Identify different users who may user a service, and how their needs may differ.
				• Evaluate products through secondary research.
				• Evaluate sources of secondary research.

D&T Disciplinary Knowledge

Part 2 of 2

	Generating Ideas	Making, Testing, Iterating	Communicating Designs
Y1	• Generate ideas in a range of ways, including: • taking photographs and using these as inspiration.	• Designing is about trying something and seeing what works, and trying again.	• 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	• Generate ideas in a range of ways, including:
	  • The above.
	  • 'What if' questions.
	  • Premade templates.
	  • 'Draw and fold'.
	  • Using story books.
	  • Using personal photographs.
		• Designers build **prototypes** to test their products.
		• When using textiles, designers make a pattern from paper to test before making the final product.
			• Draw simple design ideas and labelling them.

Y3	• Generate ideas in a range of ways, including:
	  • The above.
	  • Disassembling existing products.
	  • Using design constraints.
	  • Using Zwicky tables.
	  • Using nature to get inspiration.
		• Explicit review of the above.	• Explicit review of the above.

Y4	• Generate ideas in a range of ways, including:
	  • The above.
	  • 'Quick Draw Eights'
		• Use CAD to test models quickly and effectively.
		• Design process is iterative, and includes generating ideas; evaluating; testing and refining.
			• Create a flow chart for process for making.
			• Draw an exploded diagram.

Y5	• Review of the above, selecting best strategies for the given context.	• Explicit review of the above.	• Explicit review of the above.
Y6	• Review of the above, selecting best strategies for the given context.	• Explicit review of the above.	• Draw designs that show measurements.

Food Conceptual Knowledge

Part 1 of 2

	Food Sources	Nutrition & Eating
EYFS	Nursery and Reception To find out where food comes from	Nursery and Reception To know that eating fruits and vegetables is good for our body To know that lots of the ingredients we use are grown.
Y1	• **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.	• 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
Y2	• **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).	• **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	• 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.	• **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 the eat or are in contact with these foods. Some food allergies are mild, and some can be very serious.
Y4	• 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.	• 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	• Pasta is made from wheat flour and water (and sometimes egg). • Couscous is a type of pasta.	• Explicit review and application of the above.
Y6	• 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).	• 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
EY FS	Nursery To know to wash hands before preparing food Reception To know basic hygiene before, during and after preparing food
Y1	• 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	• 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	• 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	• 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	• 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	• **Science:** The tiny living things that we need to stop getting into food are bacteria and viruses. They can sometimes make us unwell.

Food Procedural Knowledge

	Preparation	Combining & Assembling	Cooking	Working in the Kitchen
EYFS	Nursery • Use a knife to cut soft food. • Spread using a knife. Reception Use a knife and fork effectively. Begin to chop harder foods	Nursery Pour from one container to another with some accuracy. Reception Use a range of tools e.g. rolling pin and cutters		• Follow simple recipes with support
Y1	• 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.	• Stir with wooden spoon. • Use fruit juice to prevent browning.		• Follow simple recipes. • Wash up items by removing excess food, washing, rinsing and drying.
Y2	• 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.	• Dress salad using two utensils. • Layer food on a bed of salad.		• Application of the above.
Y3	• Chop a range of foods, including the above plus hard-boiled eggs and cheddar. • Peel hard-boiled eggs.	• Stir with a teaspoon or tablespoon. • Spread butter / margarine with a knife.	• Use a hob to boil (an egg).	• Application of the above. • Independently maintain a clean and organised workspace.
Y4	• 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.	• Use a food processor or hand mixer.	• Use a hob to sauté food. • Use a hob to simmer food. • Use a hob to boil (vegetables).	• Application of the above. • Wash up items in the most appropriate order, starting with least dirty, and change washing up water as required.
Y5	• 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)	• Use a blender or hand-held blender. • Whisk (to make roux and Bechamel sauce).	• Use a hob to boil (pasta). • Use an oven to roast vegetables. • Use an oven to brown cheese.	• Application of the above.
Y6	• Crack eggs.	• Rub flour into butter. • Shape and cut using cutters.	• Use an oven to bake food.	• Application of the above.

Food Disciplinary Knowledge

	Making Food Choices
Y1	• Make food choices based on: • Colour. • Quantity of sugar. • Seasonality.
Y2	• Make food choices based on: • The above. • Quantity of fat. • Quantity of salt. • Dietary requirements (vegans and vegetarians)
Y3	• Make food choices based on: • The above. • Food allergies
Y4	• Make food choices based on: • The above. • Food miles.
Y5	• Make food choices based on: • The above • Time taken to prepare.
Y6	• Make food choices based on: • The above • Carbon footprint of production and transport. • Occasion. • Cost.

EYFS: Development Matters and ELGs: Art and Design

Nursery 2	• Start to make marks intentionally. • Explore paint, using fingers and other parts of their bodies as well as brushes and other tools. • Express ideas and feelings through making marks, and sometimes give a meaning to the marks they make. • Explore different materials, using all their senses to investigate them. • Manipulate and play with different materials. • Use their imagination as they consider what they can do with different materials. • Make simple models which express their ideas.
Nursery 3-4	• Explore different materials freely, in order to develop their ideas about how to use them and what to make. • Develop their own ideas and then decide which materials to use to express them. • Join different materials and explore different textures. • Use drawing to represent ideas like movement or loud noises.
Reception	• Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively sharing ideas, resources and skills.
ELGs	**ELG: Creating with Materials** Children at the expected level of development will: • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; • Share their creations, explaining the process they have used; • Make use of props and materials when role playing characters in narratives and stories.

EYFS: Development Matters and ELGs: Fine Motor Skills

Nursery 2	• Explore different materials and tools. • Build independently with a range of appropriate resources. • Show an increasing desire to be independent, such as wanting to feed themselves and dress or undress.
Nursery 3-4	• Use one-handed tools and equipment, for example, making snips in paper with scissors. • Use a comfortable grip with good control when holding pens and pencils. • Start to eat independently and learning how to use a knife and fork. • Show a preference for a dominant hand. • Be increasingly independent as they get dressed and undressed, for example, putting coats on and doing up zips.
Reception	• Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.
ELG	• Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases; • Use a range of small tools, including scissors, paint brushes and cutlery; • Begin to show accuracy and care when drawing.

Alignment to the National Curriculum

The below tables outlines where the statutory content from the National Curriculum is first taught across KS1 or KS2.

In KS1, pupils should be taught:		
Design	Design purposeful, functional, and appealing products for themselves and other users based on design criteria.	Covered throughout D&T units.
	Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	
Make	Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	
	Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	
Evaluate	Explore and evaluate a range of existing products.	
	Evaluate their ideas and products against design criteria	
Technical Knowledge	Build structures, exploring how they can be made stronger, stiffer and more stable	Y1 Sum, Y2 Spr (structures)
	Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Y1 Spr (levers/sliders), Y2 Spr (wheels/axles)
Cooking & Nutrition	Use the basic principles of a healthy and varied diet to prepare dishes.	Y1 Aut, Y2 Aut
	Understand where food comes from.	
In KS2, pupils should be taught:		
Design	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.	Covered throughout D&T units.
	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	
Make	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	
	Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.	
Evaluate	Investigate and analyse a range of existing products.	
	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	
	Understand how key events and individuals in design and technology have helped shape the world.	
Technical Knowledge	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Y3 Aut, Y4 Spr, Y4 Sum, Y5 Sum
	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	Y4 Spr, Y5 Aut
	Understand and use electrical systems in their products [e.g., series circuits incorporating switches, bulbs, buzzers and motors].	Y4 Sum, Y5 Aut
	Apply their understanding of computing to program, monitor and control their products.	Y4 Sum, Y5 Aut
Cooking & Nutrition	Understand and apply the principles of a healthy and varied diet.	Y3 Sum, Y4 Aut, Y5 Spr, Y6 Sum
	Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.	
	Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	