

Substantive Knowledge Progression Map: D&T

Food				
Early Years	KS1	LKS2	UKS2	KS3
<p>Begin to know that all food comes from plants or animals</p> <p>Know that fruit and vegetables are healthy</p> <p>Know that there are basic food safety and hygiene procedures we should follow and what they are</p>	<p>Know that all food comes from plants or animals</p> <p>Know that food has to be farmed, grown elsewhere (e.g. home) or caught</p> <p>Know how to name and sort foods into the five groups in the Eatwell Guide</p> <p>Know that everyone should eat at least five portions of fruit and vegetables every day</p> <p>Know how to prepare simple dishes safely and hygienically, without using a heat source</p> <p>Know how to use techniques such as cutting, peeling and grating</p>	<p>Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world</p> <p>Begin to understand that food sources are dependent on weather seasons</p> <p>Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</p> <p>Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading</p> <p>Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the Eatwell Guide</p> <p>Know that to be active and healthy, food and drink are needed to provide energy for the body</p>	<p>Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world</p> <p>Know that seasons may affect the food available</p> <p>Know how food is processed into ingredients that can be eaten or used in cooking</p> <p>Know that climate change and human activity such as overfishing is having an impact on the food available</p> <p>Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</p> <p>Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p> <p>Know that recipes can be adapted to change the appearance, taste, texture and aroma</p> <p>Know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</p>	<p>Understand and apply the principles of nutrition and health</p> <p>Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet</p> <p>Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]</p> <p>Understand the source, seasonality and characteristics of a broad range of ingredients</p>
<p><i>Taste Smell Feel Soft Hard Fruit Vegetable</i></p>	<p><i>Fruit, Vegetable, Pith Salad, hygienic, Portions, Utensils, Cutting, Peeling, Grating, Ingredients, Healthy diet</i></p>	<p><i>Appearance, Texture, Taste, Processed food, Preference, Balanced diet, Energy, Sweet, Savoury, Sour, Sensory test, seasonal,</i></p>	<p><i>Finishing, Rubbing-in, Knead, Dough Germ, Yeast, Food-waste, Nutrients, Reared, Caught, Frozen, Fibre, Raising Agents, Texture, Unleavened</i></p>	

Substantive Knowledge Progression Map: D&T

Mechanisms and Mechanical Systems				
Early Years	KS1	LKS2	UKS2	KS3
<p>Begin to know what different materials may be most suitable for, based on their properties</p> <p>Know that there are different ways to separate and join; simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape</p> <p>Know that vehicles can be put together with moving wheels using construction kits</p>	<p>Know about the simple working characteristics of materials and components</p> <p>Know about the movement of simple mechanisms such as levers, sliders, wheels and axles</p>	<p>Know that materials have both functional properties and aesthetic qualities</p> <p>Know that mechanical and electrical systems have an input, process and output</p> <p>Know how mechanical systems such as levers and linkages or pneumatic systems create movement</p> <p>Know how simple electrical circuits and components can be used to create functional products</p>	<p>Know that materials have both functional properties and aesthetic qualities</p> <p>Know that mechanical and electrical systems have an input, process and output</p> <p>Know how mechanical systems such as cams or pulleys or gears create movement</p> <p>Know how more complex electrical circuits and components can be used to create functional products</p>	<p>Understand how more advanced mechanical systems used in their products enable changes in movement and force</p> <p>Understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs]</p> <p>Know that electronics can embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers]</p>
<i>Flaps, Join, Vehicle, Wheels, Forwards, Backwards, hard, soft, cut, build</i>	<i>Mechanism, Lever, Slider, Dowel, Axle, holder, Friction, Movement, Material, Straight, Curve, Guide/Bridge</i>	<i>Mechanism, Lever, Linkage, Loose / Fixed pivot, System, input, output, Circuit, Slot, Guide, Series circuit, Connection, Switch battery (holder), Bulb, (holder), Wire, Insulator, Conductor, Crocodile Clip, Control, Programme</i>	<i>Mechanical system, Pulley, Gear, Driver, Follower, Motor spindle, Rotary Oscillating, Reciprocating, Cam Follower, Spacer</i>	
Structures				
Early Years	KS1	LKS2	UKS2	KS3
<p>Begin to know what different materials may be most suitable for, based on their properties</p> <p>Know that walls and towers can be built with construction kits and if they are not built securely, they will fall down</p>	<p>Know about the simple working characteristics of materials and components</p> <p>Know how freestanding structures can be made stronger, stiffer and more stable</p>	<p>Know that materials have both functional properties and aesthetic qualities</p> <p>Know how to make strong, stiff shell structures</p> <p>Know that computer software is used to support the design of products</p>	<p>Know that materials have both functional properties and aesthetic qualities</p> <p>Know how to reinforce and strengthen a 3D framework including: diagonal structures, strut, tension and compression</p>	<p>Understand the properties of materials and the performance of structural elements to achieve functioning solutions</p> <p>Know how to increase the strength of more complex structures</p>
<i>Walls, Towers, Stable, Join, Hard, Soft, Bendy, Wobble, Strong</i>	<i>Freestanding structure, Frame structure, Stability, Buttress, Surface,</i>	<i>Shell structure, CAD – computer-aided design, Shell structure, Edge,</i>	<i>Compression, Strut, Tension, Tie, Diagonal, Horizontal, Vertical,</i>	

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	<i>Thinner/Thicker, Corner, Square, Triangle, Metal, Wood, Plastic, Weak, Base, Cut, Fold, Join, Fix</i>	<i>Face, Vertex, Font, Net, Cuboid, Prism, Reduce/reuse/recycle, Capacity, Corrugating, Scoring, Text,</i>	<i>Triangulation, Frame structure, Suspension, Arch, Cantilever, Beam, Triangulation, Architect</i>	
Textiles				
Early Years	KS1	LKS2	UKS2	KS3
<p>Begin to know what different materials may be most suitable for, based on their properties</p> <p>Know that some materials are waterproof or warm</p>	<p>Know that a 3-D textiles product can be assembled from two identical fabric shapes</p> <p>Know that two fabrics can be joined together in different ways</p>	<p>Know that a single fabric shape can be used to make a 3D textiles product</p> <p>Understand that two pieces of fabric can be joined together securely</p> <p>Understand the need for patterns and seam allowances</p>	<p>Know that a 3D textiles product can be made from a combination of fabric shapes</p> <p>Fabrics can be strengthened, stiffened and reinforced where appropriate</p> <p>Know the importance of using fabric and textiles sustainably</p>	<p>Fibres are turned into fabrics</p> <p>Different materials have a different environmental impact and have longer/shorter lifecycles</p> <p>Sewing machines can be used to sew hems, seams and basic embroidery</p> <p>Know about cotton production and the importance of Fairtrade and organic farming methods</p>
<i>Join, Fabric, Waterproof, Warm, Appearance</i>	<i>Fray, puppet, Mock-up, Template, 3D, 2D, Seam, Sew, Decorate, Finish, Fabric, Join, Thread</i>	<i>Appliqué, Pattern/Template, Seam, Sew, Seam allowance, 3D, 2D, Aesthetics, fastening, stitch, Names of fabrics e.g., cotton, felt</i>	<i>Mock-up, Pattern/template, Seam allowance, Specification, Tacking, CAD, CAM, Sustainable, Lifecycle, Selvage, Name of textiles and fastenings used</i>	