

Cranberry Academy DT Progression Map

End of EYFS		
Early Learning Goals	Expressive Arts and Design (Exploring and using Media and Materials).	<ul style="list-style-type: none"> Expressive Arts and Design (Exploring and Using Media and Materials) Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
	Expressive Arts and Design (Being imaginative)	Expressive Arts and Design (Being Imaginative) Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.
	Physical development (Moving and handling)	<ul style="list-style-type: none"> Physical Development (Moving and Handling) Children handle equipment and tools effectively, including pencils for writing.

KS1 National Curriculum Expectations	KS2 National Curriculum Expectations
<p>Design</p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria. generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. 	<p>Design</p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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.

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Make

Pupils should be taught to:

- 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

Pupils should be taught to:

- explore and evaluate a range of existing products.
- evaluate their ideas and products against design criteria.

Technical Knowledge

Pupils should be taught to:

- build structures, exploring how they can be made stronger, stiffer and more stable.
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Cooking and Nutrition

Pupils should be taught to:

- use the basic principles of a healthy and varied diet to prepare dishes.
- understand where food comes from.

- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Make

Pupils should be taught to:

- 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

Pupils should be taught to:

- 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.
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages];
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors];

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• apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition

Pupils should be taught to:

- understand and apply the principles of a healthy and varied diet.
- 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.

Intent

At Cranberry Academy, we value and are dedicated to the teaching of Design Technology. We want pupils to develop the confidence to take risks, through drafting design concepts, modelling, and testing and to be reflective learners who evaluate their work and the work of others. Through our scheme of work, we aim to build an awareness of the impact of design and technology on our lives and encourage pupils to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements.



Implementation

The Design and technology national curriculum outline the three main stages of the design process: design, make and evaluate. Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical, and technical understanding required for each strand. Cooking and nutrition* has a separate section, with a focus on specific principles, skills and techniques in food, including where food comes from, diet and seasonality. At Cranberry, we follow a scheme called Kapow which helps to develop our pupils skills in six key areas: Mechanisms,

structures, textiles, cooking and nutrition, electrical systems (KS2) and digital world (KS2). Each of our key areas follows the design process (design, make and evaluation) and has a particular theme and focus from the technical knowledge or cooking and nutrition section of the curriculum.



Impact

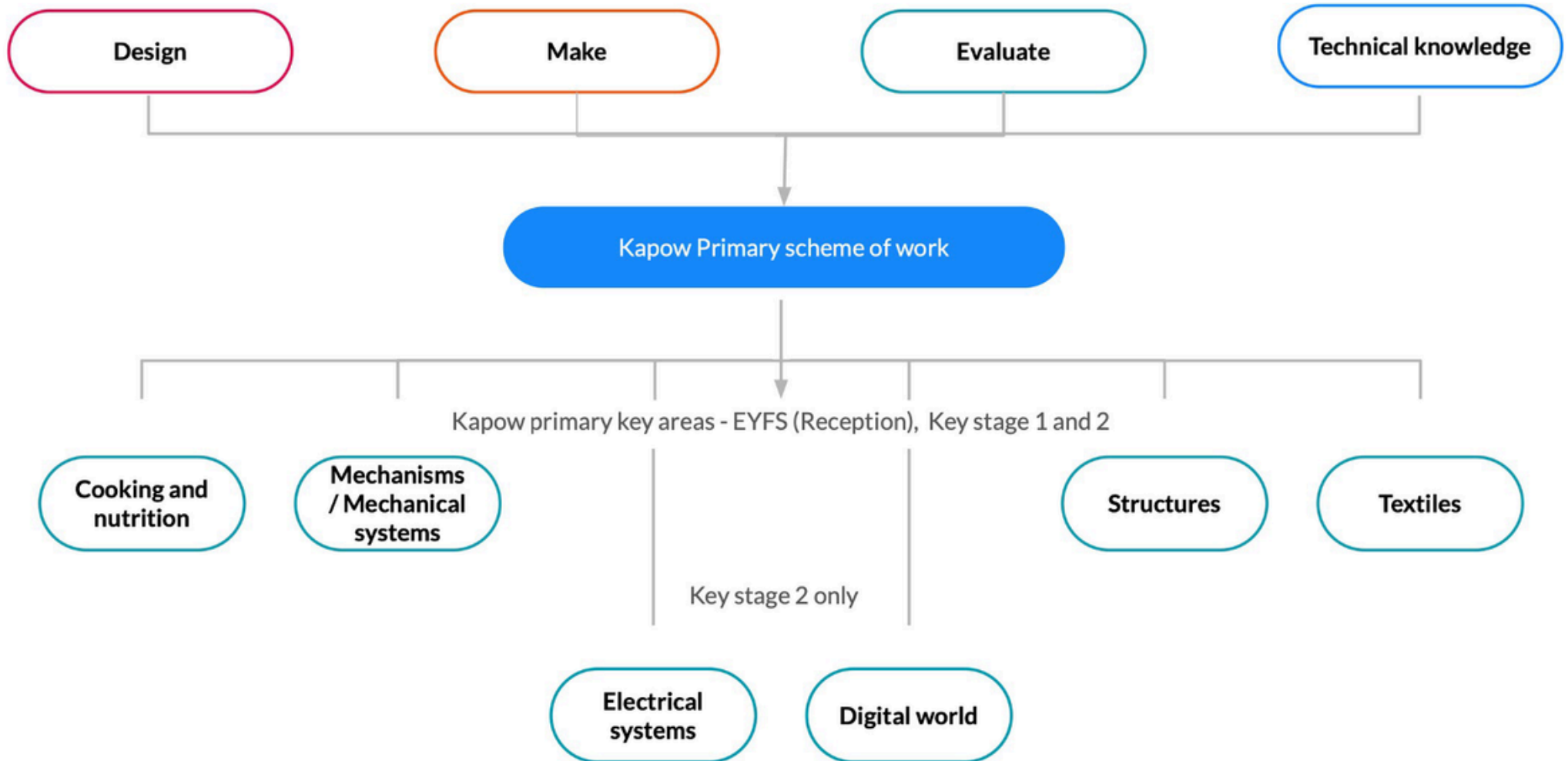
We believe that the pupils at Cranberry should leave school equipped with a range of skills to enable them to succeed in their secondary education and be innovative and resourceful members of society.

The expected impact of following the Kapow Primary Design and technology scheme of work is that children will:

- Understand the functional and aesthetic properties of a range of materials and resources.
- Understand how to use and combine tools to carry out different processes for shaping, decorating, and manufacturing products.
- Build and apply a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes, including models, prototypes, CAD, and products to fulfil the needs of users, clients, and scenarios.
- Understand and apply the principles of healthy eating, diets, and recipes, including key processes, food groups and cooking equipment.
- Have an appreciation for key individuals, inventions, and events in history and of today that impact our world.
- Recognise where our decisions can impact the wider world in terms of community, social and environmental issues.
- Self-evaluate and reflect on learning at different stages and identify areas to improve.
- Meet the end of key stage expectations outlined in the National curriculum for Design and technology.
- Meet the end of key stage expectations outlined in the National curriculum for Computing.

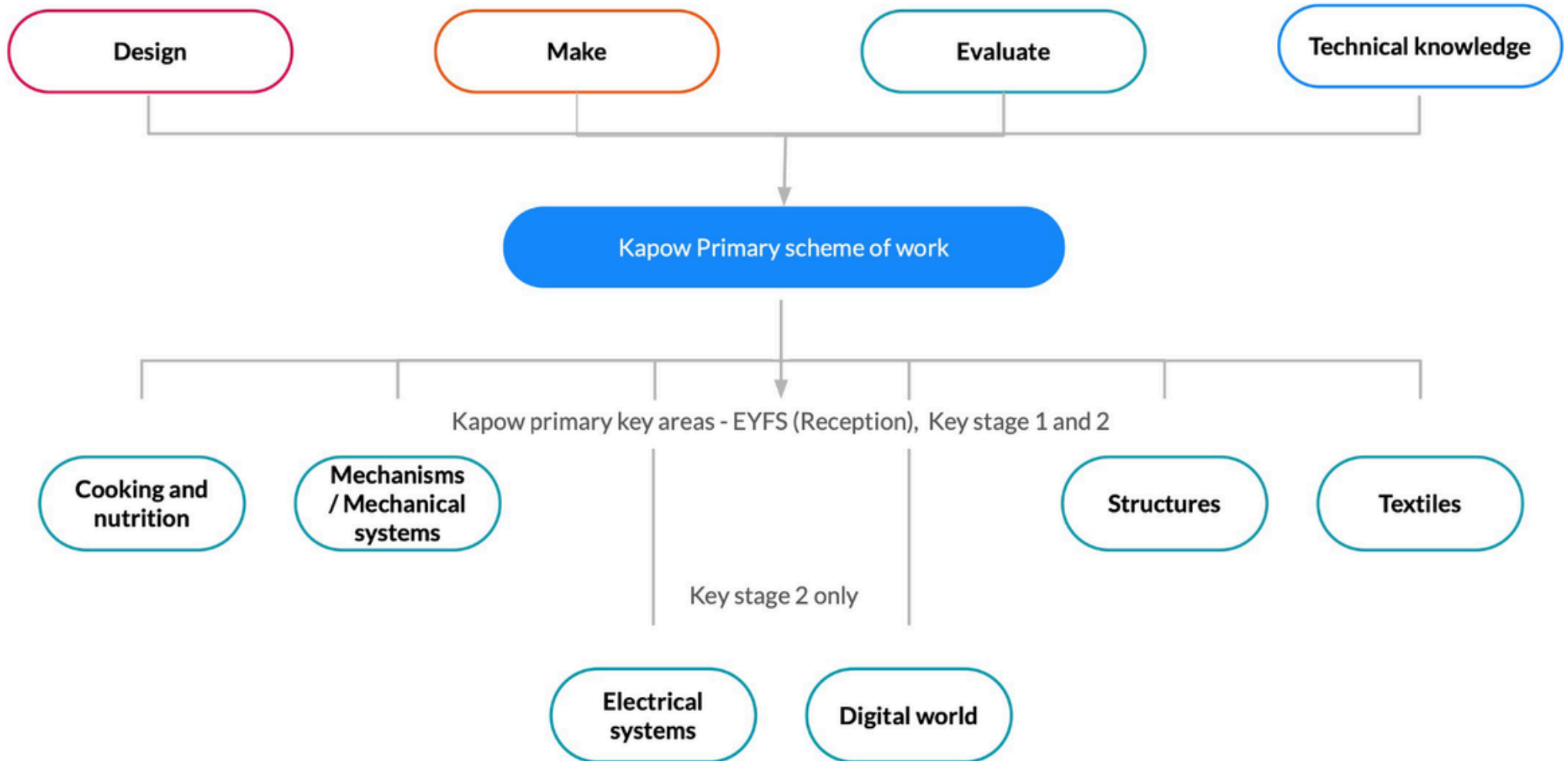
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The Organisation of the Design and Technology Structure




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The Organisation of the Design and Technology Structure




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Structures			
		EYFS (Reception)	
		Junk Modelling	Boats
Skills	Design	<ul style="list-style-type: none"> • Making verbal plans and material choices. • Developing a junk model. 	<ul style="list-style-type: none"> • Designing a junk model boat. • Using knowledge from exploration to inform design.
	Make	<ul style="list-style-type: none"> • Improving fine motor/scissor skills with a variety of materials. • Joining materials in a variety of ways (temporary and permanent). • Joining different materials together. • Describing their junk model, and how they intend to put it together. 	<ul style="list-style-type: none"> • Making a boat that floats and is waterproof, considering material choices.
	Evaluate	<ul style="list-style-type: none"> • Giving a verbal evaluation of their own and others' junk models with adult support. • Checking to see if their model matches their plan. • Considering what they would do differently if they were to do it again. 	<ul style="list-style-type: none"> • Making predictions about and evaluating different materials to see if they are waterproof. • Making predictions about and evaluating existing boats to see which floats best. • Testing their design and reflecting on what could have been done differently. • Investigating the how the shapes and structure of a boat affect the way it moves.

		<ul style="list-style-type: none"> • Describing their favourite and least favourite part of their model. 	
Knowledge	Technical	<ul style="list-style-type: none"> • To know there are a range to different materials that can be used to make a model and that they are all slightly different. • Making simple suggestions to fix <u>their</u> junk model. 	<ul style="list-style-type: none"> • To know that 'waterproof' materials are those which do not absorb water.
	Additional		<ul style="list-style-type: none"> • To know that some objects float, and others sink. • To know the different parts of a boat.
	Vocabulary	<ul style="list-style-type: none"> • Join • Stick • Cut • Bend • Slot • Scissors • Measure • Materials • Fix 	<ul style="list-style-type: none"> • Waterproof • Absorb • Prediction • Variable • Experiment • Investigation • Float • Sink • Junk

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		<u>Structures</u>	
		<u>Year 1</u>	<u>Year 2</u>
		Constructing a windmill	Making an outdoor chair
Skills	Design	<ul style="list-style-type: none"> • Learning the importance of a clear design criteria. • Including individual preferences and requirements in a design. 	<ul style="list-style-type: none"> • Generating and communicating ideas using sketching and modelling. • Learning about different types of structures, found in the natural world and in everyday objects.
	Make	<ul style="list-style-type: none"> • Making stable structures from card. • Following instructions to cut and assemble the supporting structure of a windmill. • Making functioning turbines and axles which are assembled into a main supporting structure. • Finding the middle of an object. • Puncturing holes. • Adding weight to structures. • Creating supporting structures. • Cutting evenly and carefully. 	<ul style="list-style-type: none"> • Making a structure according to design criteria. • Creating joints and structures from paper/card and tape. • Building a strong and stiff structure by folding paper.

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	<p style="text-align: center;">Evaluate</p>	<ul style="list-style-type: none"> • Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't. • Suggest points for improvements. 	<ul style="list-style-type: none"> • Exploring the features of structures. • Comparing the stability of different shapes. • Testing the strength of own structures. • Identifying the weakest part of a structure. • Evaluating the strength, stiffness and stability of own structure.
<p style="text-align: center;">Knowledge</p>	<p style="text-align: center;">Technical</p>	<p>To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses).</p> <ul style="list-style-type: none"> • To understand that axles are used in structures and mechanisms to make parts turn in a circle. • To begin to understand that different structures are used for different purposes. • To know that a structure is something that has been made and put together. • To know that the sails or blades of a windmill are moved by the wind. • To know that a structure is something built for a reason. • To know that stable structures do not topple. • To know that adding weight to the base of a structure can make it more stable. 	<ul style="list-style-type: none"> • To know that shapes and structures with wide, flat bases or legs are the most stable. • To understand that the shape of a structure affects its strength. • To know that materials can be manipulated to improve strength and stiffness. • To know that a structure is something which has been formed or made from parts. • To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. • To know that a 'strong' structure is one which does not break easily. • To know that a 'stiff' structure or material is one which does not bend easily.
	<p style="text-align: center;">Additional</p>	<ul style="list-style-type: none"> • To know that design criteria is a list of points to ensure the product meets the client's needs and wants. • To know that a windmill harnesses the power of wind for a purpose like grinding 	<ul style="list-style-type: none"> • To know that natural structures are those found in nature. • To know that man-made structures are those made by people.


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	<p style="text-align: center;">Evaluate</p>	<ul style="list-style-type: none"> • Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't. • Suggest points for improvements. 	<ul style="list-style-type: none"> • Exploring the features of structures. • Comparing the stability of different shapes. • Testing the strength of own structures. • Identifying the weakest part of a structure. • Evaluating the strength, stiffness and stability of own structure.
<p style="text-align: center;">Knowledge</p>	<p style="text-align: center;">Technical</p>	<p>To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses).</p> <ul style="list-style-type: none"> • To understand that axles are used in structures and mechanisms to make parts turn in a circle. • To begin to understand that different structures are used for different purposes. • To know that a structure is something that has been made and put together. • To know that the sails or blades of a windmill are moved by the wind. • To know that a structure is something built for a reason. • To know that stable structures do not topple. • To know that adding weight to the base of a structure can make it more stable. 	<ul style="list-style-type: none"> • To know that shapes and structures with wide, flat bases or legs are the most stable. • To understand that the shape of a structure affects its strength. • To know that materials can be manipulated to improve strength and stiffness. • To know that a structure is something which has been formed or made from parts. • To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. • To know that a 'strong' structure is one which does not break easily. • To know that a 'stiff' structure or material is one which does not bend easily.
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		<p>grain, pumping water or generating electricity.</p> <ul style="list-style-type: none"> • To know that windmill turbines use wind to turn and make the machines inside work. • To know that a windmill is a structure with sails that are moved by the wind. • To know the three main parts of a windmill are the turbine, axle and structure. • To know that windmills are used to generate power and were used for grinding flour. 		
	<p>Vocabulary</p>	<ul style="list-style-type: none"> • Base • Design • Evaluate • Rotate • Rotor blades • Same • Strong • Test • Wind • Centre • Equal • Middle • Rotor • Sails • Stable • Structure • Weak • Windmill 	<ul style="list-style-type: none"> • Function • Mould • Stable • Strong • Test • Weak 	<ul style="list-style-type: none"> • Man-made • Natural • Stiff • Structure


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		<u>Structures</u>	
		<u>Year 3</u>	<u>Year 4</u>
		Constructing a castle	Pavilions
Skills	Design	<ul style="list-style-type: none"> • Designing a castle with key features to appeal to a specific person/purpose. • Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours. • Designing and/or decorating a castle tower on CAD software. 	<ul style="list-style-type: none"> • Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect. • Building frame structures designed to support weight.
	Make	<ul style="list-style-type: none"> • Constructing a range of 3D geometric shapes using nets. • Creating special features for individual designs. • Making facades from a range of recycled materials. 	<ul style="list-style-type: none"> • Creating a range of different shaped frame structures. • Making a variety of free-standing frame structures of different shapes and sizes. • Selecting appropriate materials to build a strong structure and cladding. • Reinforcing corners to strengthen a structure. • Creating a design in accordance with a plan. • Learning to create different textural effects with materials.
	Evaluate	<ul style="list-style-type: none"> • Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison, to the original design. 	<ul style="list-style-type: none"> • Evaluating structures made by the class. • Describing what characteristics of a design and construction made it the most effective. • Considering effective and ineffective designs.

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		<ul style="list-style-type: none"> • Suggesting points for modification of the individual designs. 	
Knowledge	Technical	<ul style="list-style-type: none"> • To understand that wide and flat based objects are more stable. • To understand the importance of strength and stiffness in structures. 	<ul style="list-style-type: none"> • To understand what a frame structure is. • To know that a 'free-standing' structure is one which can stand on its own.
	Additional	<ul style="list-style-type: none"> • To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose. • To know that a facade is the front of a structure. • To understand that a castle needed to be strong and stable to withstand enemy attack. • To know that a paper net is a flat 2D shape that can become a 3D shape once assembled. • To know that a design specification is a list of success criteria for a product. 	<ul style="list-style-type: none"> • To know that a pavilion is a decorative building or structure for leisure activities. • To know that cladding can be applied to structures for different effects. • To know that aesthetics <u>are</u> how a product looks. • To know that a product's function means its purpose. • To understand that the target audience means the person or group of people a product is designed for. • To know that architects consider light, shadow and patterns when designing.
	Vocabulary	<ul style="list-style-type: none"> • 2D Shapes • Castle • Evaluate • Feature • Net • Scoring • Strong • Tab • 3D shapes • Design criteria • Facade • Flag • Recyclable • Stable • Structure • Weak 	<ul style="list-style-type: none"> • Aesthetic • Design criteria • Frame structure • Inspiration • Reinforce • Structure • Target customer • Theme • Cladding • Evaluation • Function • Pavillion • Stable • Target audience • Texture

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<u>Structures</u>		
		<u>Year 6</u>
		Playgrounds
Skills	Design	<ul style="list-style-type: none"> • Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs.
	Make	<ul style="list-style-type: none"> • Building a range of play apparatus structures drawing upon new and prior knowledge of structures. • Measuring, marking and cutting wood to create a range of structures. • Using a range of materials to reinforce and add decoration to structures.
	Evaluate	<ul style="list-style-type: none"> • Improving a design plan based on peer evaluation. • Testing and adapting a design to improve it as it is developed. • Identifying what makes a successful structure.
Knowledge	Technical	<ul style="list-style-type: none"> • To know that structures can be strengthened by manipulating materials and shapes.
	Additional	<ul style="list-style-type: none"> • To understand what a 'footprint plan' is. • To understand that in the real world, design, can impact users in positive and negative ways. • To know that a prototype is a cheap model to test a design idea.
		<ul style="list-style-type: none"> • Adapt • Sketch. • Jelutong

	Vocabulary			
	<ul style="list-style-type: none"> • Apparatus. • Bench hook • Cladding • Coping saw • Dowel • Feedback 	<ul style="list-style-type: none"> • Strong • Structure. • Tenon saw • Texture • Vice • Landscape 	<ul style="list-style-type: none"> • Mark out • Measure • Modify • Playground • Reinforce • Natural materials 	

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		<u>Mechanisms</u>	
		<u>Year 2</u>	<u>Year 2</u>
		Making a Moving Monster	Fairground Wheel
 <p>CRANBERRY ACADEMY</p>			
	Design	<ul style="list-style-type: none"> • Creating a class design criterion for a moving monster. • Designing a moving monster for a specific audience in accordance with a design criteria. 	<ul style="list-style-type: none"> • Conducting simple surveys or discussions to gather opinions on what others need or like in a design. • Knowing that a survey is used to find out what people like. • Using a simple design brief that outlines the intended use, target user, and key features of the product, to create simple design criteria. • Knowing that a design brief helps to decide what to make. • Knowing that design criteria are the steps for making a product successful. • Creating ideas with design criteria in mind. • Referring to specific parts of existing products when generating ideas. • Knowing that the design criteria help when thinking of ideas. • Using labels to explain parts of a design, label materials, etc. • Using labels to explain parts of a design, label materials, etc.
Skills			


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		<ul style="list-style-type: none"> • Knowing that drawings can help explain how something works. • Knowing that a label explains part of a drawing.
<p>Make</p>	<ul style="list-style-type: none"> • Making linkages using card for levers and split pins for pivots. • Experimenting with linkages adjusting the widths, lengths and thicknesses of card used. • Cutting and assembling components neatly. 	<ul style="list-style-type: none"> • Choosing materials, ingredients or components from a wider range of materials, ingredients or components. • Explaining their choices based on the properties of materials and components. • Knowing some properties of materials like hard, soft, flexible, waterproof, strong etc. • Following and recalling simple safety instructions. • Knowing that some tools are sharp like scissors and knives. • Choosing known geometric shapes when making. • Beginning to shape objects to improve how they work. • Knowing the names of some geometric shapes: triangle, pyramid, square, cube, circle, sphere. • Considering balance in their finishing, like evenly spaced decoration.
<p>Evaluate</p>	<ul style="list-style-type: none"> • Evaluating own designs against design criteria. • Using peer feedback to modify a final design. 	<ul style="list-style-type: none"> • Discussing a range of existing products and saying what they like and dislike about them. • Evaluating existing products against design criteria. • Evaluating their ideas and creations against simple design criteria. • Knowing that design criteria help to decide if their product is a success. • Suggesting improvements to their peers' designs and products. • Knowing that improve means to make something

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			<p>better.</p> <ul style="list-style-type: none"> • Knowing that their suggestions can improve someone else's work.
Knowledge	Technical	<ul style="list-style-type: none"> • To know that mechanisms are a collection of moving parts that work together as a machine to produce movement. • To know that there is always an input and output in a mechanism. • To know that an input is the energy that is used to start something working. • To know that an output is the movement that happens <u>as a result of</u> the input. • To know that a lever is something that turns on a pivot. • To know that a linkage mechanism is made up of a series of levers. 	<ul style="list-style-type: none"> • To know everyday objects, have mechanisms. • To know many things that move have parts inside to help them work. • To know mechanisms usually limit unwanted movement. • To know everyday objects <u>utilise</u> wheels and axles. • To know wheels must be able to turn to work effectively. • To know axles allow wheels to turn without falling off.
	Additional	<ul style="list-style-type: none"> • To know some real-life objects that contain mechanisms. 	<ul style="list-style-type: none"> • To know the features of a fairground wheel include the wheel, frame, pods, a base an axle and an axle holder.
	Vocabulary	<ul style="list-style-type: none"> • Evaluation • Lever • Linkage • Mechanical • Oscillating motion • Reciprocating motion. • Survey 	<ul style="list-style-type: none"> • Input • Linear • Mechanism • Motion • Output • Rotary motion • Pivot

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<u>Mechanisms/Mechanical</u>			
		<u>Year 4</u>	<u>Year 5</u>
		Slingshot Car	Making a pop-up book
Skills	Design	<ul style="list-style-type: none"> • Designing a shape that reduces air resistance. • Drawing a net to create a structure from. • Choosing shapes that increase or decrease speed <u>as a result of air resistance</u>. • <u>Personalising</u> a design. 	<ul style="list-style-type: none"> • Designing a pop-up book which uses a mixture of structures and mechanisms. • Naming each mechanism, input and output accurately. • Storyboarding ideas for a book.
	Make	<ul style="list-style-type: none"> • Measuring, marking, cutting and assembling with increasing accuracy. • Making a model based on a chosen design. 	<ul style="list-style-type: none"> • Following a design brief to make a <u>pop up</u> book, neatly and with focus on accuracy. • Making mechanisms and/or structures using sliders, pivots and folds to produce movement. • Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result.


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	Evaluate	<ul style="list-style-type: none"> • Evaluating the speed of a final product based <u>on</u>: the effect of shape on speed and the accuracy of workmanship on performance. 	<ul style="list-style-type: none"> • Evaluating the work of others and receiving feedback on own work. • Suggesting points for improvement.
Knowledge	Technical	<ul style="list-style-type: none"> • To understand that all moving things have kinetic energy. • To understand that kinetic energy is the energy that something (object/person) has by being in motion. • To know that air resistance is the level of drag on an object as it is forced through the air. • To understand that the shape of a moving object will affect how it moves due to air resistance. 	<ul style="list-style-type: none"> • To know that mechanisms control movement. • To understand that mechanisms can be used to change one kind of motion into another. • To understand how to use sliders, pivots and folds to create paper-based mechanisms.
	Additional	<ul style="list-style-type: none"> • To understand that products change and evolve over time. • To know that aesthetics means how an object or product looks in design and technology. • To know that a template is a stencil you can use to help you draw the same shape accurately. • To know that a birds-eye view means a view from a high angle (as if a bird in flight). • To know that graphics are images which are designed to explain or advertise something. 	<ul style="list-style-type: none"> • To know that a design brief is a description of what I am going to design and make. • To know that designers often want to hide mechanisms to make a product more aesthetically pleasing.

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		<ul style="list-style-type: none"> • To know that it is important to assess and evaluate design ideas and models against a list of design criteria. 	
	<p>Vocabulary</p>	<ul style="list-style-type: none"> • Aesthetic • Chassis • Design criteria • Graphics • Kinetic energy • Mechanism • Net • Structure • Air resistance • Design • Function 	<ul style="list-style-type: none"> • Aesthetic • Computer-aided design (CAD) • Caption • Design • Design criteria • Function • Linage • Motion • Pivot • Slider • Structure • Template • Design brief • Exploded-diagram • Input • Mechanism • Output • Prototype


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<u>Electrical Systems (KS2)</u>			
		<u>Year 4</u>	<u>Year 5</u>
		Torches	Doodlers
Skills	Design	<ul style="list-style-type: none"> • Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas. 	<ul style="list-style-type: none"> • Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. • Developing design criteria based on findings from investigating existing products. • Developing design criteria that clarifies the target user.
	Make	<ul style="list-style-type: none"> • Making a torch with a working electrical circuit and switch. • Using appropriate equipment to cut and attach materials. • Assembling a torch according to the design and success criteria. 	<ul style="list-style-type: none"> • Altering a product's form and function by tinkering with its configuration. • Making a functional series circuit, incorporating a motor. • Constructing a product with consideration for the design criteria. • Breaking down the construction process into steps so that others can make the product.
	Evaluate	<ul style="list-style-type: none"> • Evaluating electrical products. • Testing and evaluating the success of a final product. 	<ul style="list-style-type: none"> • Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. • Determining which parts of a product affect its function and which parts affect its form. • Analysing whether changes in configuration positively or negatively affect an existing product.

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			<ul style="list-style-type: none"> • Peer evaluating a set of instructions to build a product.
Knowledge	Technical	<ul style="list-style-type: none"> • To understand that electrical conductors are materials which electricity can pass through. • To understand that electrical insulators are materials which electricity cannot pass through. • To know that a battery contains stored electricity that can be used to power products. • To know that an electrical circuit must be complete for electricity to flow. • To know that a switch can be used to complete and break an electrical circuit. 	<ul style="list-style-type: none"> • To know that series circuits only have one direction for the electricity to flow. • To know when there is a break in a series circuit, all components turn off. • To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. • To know a motorised product is one which uses a motor to function.
	Additional	<ul style="list-style-type: none"> • To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens. • To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison. 	<ul style="list-style-type: none"> • To know that product analysis is critiquing the strengths and weaknesses of a product. • To know that 'configuration' means how the parts of a product are arranged.
	Vocabulary	<ul style="list-style-type: none"> • Battery. • Blub • Buzzer • Cell • Component • Conductor. • Copper • Design criteria • Wire • Test • Series circuit • Insulator • Function • Electric • Electrical item 	<ul style="list-style-type: none"> • Circuit component. • Configuration. • Current. • Develop • DIY • Investigate • Motor • Target user • Stable • Series circuit • Product analysis • Problem <u>solve</u> • Motorised


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<u>Cooking and Nutrition</u>			
		<u>Year 1</u>	<u>Year 3</u>
		Smoothies	Eating Seasonally
Skills	Design	<ul style="list-style-type: none"> • Designing smoothie carton packaging by-hand. 	<ul style="list-style-type: none"> • Designing a recipe for a savoury tart.
	Make	<ul style="list-style-type: none"> • Chopping fruit and vegetables safely to make a smoothie. • Juicing fruits safely to make a smoothie. 	<ul style="list-style-type: none"> • Following the instructions within a recipe. • Tasting seasonal ingredients. • Selecting seasonal ingredients. • Peeling ingredients safely. • Cutting safely with a vegetable knife.
	Evaluate	<ul style="list-style-type: none"> • Tasting and evaluating different food combinations. • Describing appearance, smell and taste. • Suggesting information to be included on packaging. • Comparing their own smoothie with someone else's. 	<ul style="list-style-type: none"> • Establishing and using design criteria to help test and review dishes. • Describing the benefits of seasonal fruits and vegetables and the impact on the environment. • Suggesting points for improvement when making a seasonal tart.
Knowledge		<ul style="list-style-type: none"> • To know that soup is ingredients (usually vegetables and liquid) <u>blended together</u>. • To know that vegetables are grown. • To recognise and name some common vegetables. • To know that different vegetables taste different. 	<ul style="list-style-type: none"> • To know that not all fruits and vegetables can be grown in the UK. • To know that climate affects food growth. • To know that vegetables and fruit grow in certain seasons. • To know that cooking instructions are known as a 'recipe'.

Cranberry Academy DT Progression Map

	<ul style="list-style-type: none"> • To know that eating vegetables is good for us. • To discuss why different packages might be used for different foods. 	<ul style="list-style-type: none"> • To know that imported food is food which has been brought into the country. • To know that exported food is food which has been sent to another country. • To know that eating seasonal foods can have a positive impact on the environment. • To know that similar coloured fruits and vegetables often have similar nutritional benefits. • To know that the appearance of food is as important as taste.
<p style="text-align: center;">Vocabulary</p>	<ul style="list-style-type: none"> • Blender • Healthy • Ingredients • Recipe. • Smoothie • Vegetable • Seed • Root • Leaf. • Stem. • Flavour. • Design. • Compare • Evaluate • Taste • Blend • Bush • Plant • Juicer • Table knife • Cut • Juice • Vine • Chopping 	<ul style="list-style-type: none"> • Arid • Complementary • Export • Mediterranean • Mountain. • Polar. • Seasons. • Temperate. • Tropical. • Climate • Country • Import • Mock up • Peel • Seasonal • Snip • Texture • Weather


Cranberry Academy DT Progression Map

		<u>Year 5</u>
		Developing a recipe
Skills	Design	<ul style="list-style-type: none"> • Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. • Writing an amended method for a recipe to incorporate the relevant changes to ingredients. • Designing appealing packaging to reflect a recipe. • Researching existing recipes to inform ingredient choices.
	Make	<ul style="list-style-type: none"> • Cutting and preparing vegetables safely. • Using equipment safely, including knives, hot pans and hobs. • Knowing how to avoid cross-contamination. • Following a step by step method carefully to make a recipe.
	Evaluate	<ul style="list-style-type: none"> • Identifying the nutritional differences between different products and recipes. • Identifying and describing healthy benefits of food groups.
Knowledge		<ul style="list-style-type: none"> • To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed. • To know that recipes can be adapted to suit nutritional needs and dietary requirements. • To know that I can use a nutritional calculator to see how healthy a food option is. • To understand that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects. • To know that coloured chopping boards can prevent cross-contamination. • To know that nutritional information is found on food packaging. • To know that food packaging serves many purposes.

Vocabulary

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|--------------|-----------------------|
| • Abattoir | • Adaptation |
| • Balanced. | • Beef |
| • Brand. | • Cook |
| • Develop. | • Cross-contamination |
| • Enhance | • Equipment |
| • Farm | • Label |
| • Measure. | • Nutrient |
| • Nutrition. | • Nutritional value |
| • Preference | • Process |
| • Safety | • Theme |

Cranberry Academy DT Progression Map


<u>Textiles</u>			
		<u>Year 1</u>	<u>Year 6</u>
		Puppets	Waistcoats
Skills	Design	<ul style="list-style-type: none"> Using a template to create a design for a puppet. 	<ul style="list-style-type: none"> Designing a waistcoat in accordance <u>to</u> a specification linked to set of design criteria. Annotating designs, to explain their decisions.
	Make	<ul style="list-style-type: none"> Cutting fabric neatly with scissors. Using joining methods to decorate a puppet. Sequencing steps for construction. 	<ul style="list-style-type: none"> Using a template when cutting fabric to ensure they achieve the correct shape. Using pins effectively to secure a template to fabric without creases or bulges. Marking and cutting fabric accurately, in accordance with their design. Sewing a strong running stitch, making small, neat stitches and following the edge. Tying strong knots. Decorating a waistcoat, attaching features (such as appliqué) using thread. Finishing the waistcoat with a secure fastening (such as buttons). Learning different decorative stitches. Sewing accurately with evenly spaced, neat stitches.
	Evaluate	<ul style="list-style-type: none"> Reflecting on a finished product, explaining likes and dislikes. 	<ul style="list-style-type: none"> Reflecting on their work continually throughout the design, make and evaluate process.

Cranberry Academy DT Progression Map

<p>Knowledge</p>	<ul style="list-style-type: none"> • To know that 'joining technique' means connecting two pieces of material together. • To know that there are various temporary methods of joining fabric by using staples, glue or pins. • To understand that different techniques for joining materials can be used for different purposes. • To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. • To know that drawing a design idea is useful to see how an idea will look. 	<ul style="list-style-type: none"> • To understand that it is important to design clothing with the client/ target customer in mind. • To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric. • To understand the importance of consistently sized stitches.
<p>Vocabulary</p>	<ul style="list-style-type: none"> • Design • Decorate • Fabric • Model • Glue • Hand-puppet • Safety pin • Staple • Stencil • Template 	<ul style="list-style-type: none"> • Accurate. • Adapt. • Design • Detail. • Fastening • Properties. • Seam. • Shape • Target customer. • Thread. • Unique • Waterproof • Annotate • Design criteria • Fabric • Knot • Running-stitch • Sew • Target audience • Template • Waistcoat

Cranberry Academy DT Progression Map

Digital World (KS2)

		<u>Year 3</u>	<u>Year 6</u>
		Wearable Technology	Navigating the World
Skills	Design	<ul style="list-style-type: none"> • Problem solving by suggesting which features on a <u>Micro:bit</u> might be useful and justifying my ideas. • Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge. • Developing design ideas through annotated sketches to create a product concept. • Developing design criteria to respond to a design brief. 	<ul style="list-style-type: none"> • Writing a design brief from information submitted by a client. • Developing design criteria to fulfil the client's request. • Considering and suggesting additional functions for my navigation tool. • Developing a product idea through annotated sketches. • Placing and manoeuvring 3D objects, using CAD. • Changing the properties of, or combining one or more 3D objects, using CAD.
	Make	<ul style="list-style-type: none"> • Following a list of design requirements. • Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm. 	<ul style="list-style-type: none"> • Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo). • Explaining material choices and why they were chosen as part of a product concept. • Programming an N, E, S, W cardinal compass.
	Evaluate	<ul style="list-style-type: none"> • Analysing and evaluating wearable technology. • Using feedback from peers to improve design. 	<ul style="list-style-type: none"> • Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. • Developing an awareness of sustainable design. • Identifying key industries that <u>utilise</u> 3D CAD modelling and explaining why.

Cranberry Academy DT Progression Map

			<ul style="list-style-type: none"> • Describing how the product concept fits the client's request and how it will benefit the customers. • Explaining the key functions in my program, including any additions. • Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. • Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch. • Demonstrating a functional program as part of a product concept pitch.
Knowledge	Technical	<ul style="list-style-type: none"> • To understand that, in programming, a 'loop' is code that repeats something <u>again and again</u> until stopped. • To know that a <u>Micro:bit</u> is a pocket-sized, <u>codeable</u> computer. • To know that a simulator <u>is able to</u> replicate the functions of an existing piece of technology. 	<ul style="list-style-type: none"> • To know that accelerometers can detect movement. • To understand that sensors can be useful in products as they mean the product can function without human input.
	Additional	<ul style="list-style-type: none"> • To know what the 'Digital Revolution' is and features of some of the products that have evolved as a result. • To understand what is meant by 'point of sale display.' • To know that CAD stands for 'Computer-aided design'. • To know what a focus group is by taking part in one. 	<ul style="list-style-type: none"> • To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request. • To know that 'multifunctional' means an object or product has more than one function. • To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.
	Vocabulary	<ul style="list-style-type: none"> • Analogue. • Analyse. • Annotate. • Badge. • Initiate • Layers • Loops • <u>Micro:bit</u> 	<ul style="list-style-type: none"> • 3D CAD • Application (apps) • Biodegradable. • Boolean. • Investment • Lightweight • Loop • Manufacture

Cranberry Academy DT Progression Map

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| | <ul style="list-style-type: none">• CAD.• Control.• Design criteria.• Develop.• Digital• Program• Sense.• Electronic.• Fastening.• Feature.• Feedback.• Form. | <ul style="list-style-type: none">• Monitor• Net• Point of sale• Product• Digital revolution• Display• Simulator• Smart• Technology• Test• User• Function | <ul style="list-style-type: none">• Cardinal compass.• Compass.• Concept.• Convince.• Corrode.• Duplicate.• Finite.• Functional.• GPD tracker.• Infinite. | <ul style="list-style-type: none">• Materials• <u>Mouldable</u>• Navigation• Non-recyclable• Product lifecycle• Product lifespan• Sustainable• Unsustainable• Variable• <u>Workplane</u> |
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Cranberry Academy Art/DT

Long Term Plan 26-27

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Drawing: Exploring line and shape Art	Structures: Stable structures *covered in outdoor learning* DT	Sculpture and 3D: Paper play Art	Textiles: Simple stitches DT	Learning about paint and brush control Art	Mechanisms: Wheels and axels DT
Year 2	Cooking and Nutrition: Balanced diet *covered in outdoor learning* DT	Drawing: Understanding tone and texture Art	Mechanisms: Levers - fairground wheel DT	Colour mixing Art	Structures: Make a famous landmark DT	Sculpture and 3D: Clay houses Art
Year 3	Drawing: Developing drawing skills Art	Cooking and Nutrition: Eating seasonally *covered in outdoor learning* DT	Craft and design: Ancient Egyptian scrolls Art	Structures: Product Packaging DT	Sculpture and 3D: Abstract shape and space Art	Digital World: Wearable Technology DT
Year 4	Mechanical: Mechanical cars DT	Drawing: Exploring tone, texture and proportion Art	Cooking and Nutrition: Adapting a recipe *covered in outdoor learning* DT	Painting and mixed media: Light and dark Art	Electrical systems: Exploring electrical systems DT	Craft and design: Fabric of nature Art

Cranberry Academy Art/DT

Long Term Plan 26-27

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5	Sculpture and 3D: Interactive installation Art	Structures: Bridges <i>*covered in outdoor learning*</i> DT	Drawing: Depth, emotion and movement Art	Mechanisms: gears and pulleys DT	Portraits Art	Electrical Systems: Wobble bots DT
Year 6	Textiles: Making a waistcoat DT	Craft and design: Photo opportunity Art	Cooking and Nutrition Farm to fork <i>*covered in outdoor learning*</i> DT	Drawing: Expressing ideas Art		Digital World: Navigating the digital world Sculpture and 3D: Making memories Art/DT