

Design and Technology - End of year statements for ARE pupils							
Skills, knowledge and understanding	Nursery	Reception	Y1	Y2	Y3	Y4	Y5
<b>Food</b>	<p>Chop soft foods with support</p> <p>Taste food and show with expressions whether it has been enjoyed</p>	<p>Chop vegetables with support.</p> <p>Taste food and giving opinions.</p> <p>Describe some of the following when tasting food: look, feel, smell and taste.</p>	<p>I can use knives safely to cut food</p> <p>I assemble or cook ingredients</p> <p>I know that I have to wash my hands and keep[ work surfaces clean when preparing food</p>	<p>I prepare ingredients safely and hygienically</p> <p>I can grate and peel food safely</p> <p>I describe the properties of the food ingredients: taste, smell, texture and consistency</p> <p>I measure or weigh my ingredients using measuring cups or electronic scales.</p>	<p>I prepare ingredients hygienically using appropriate utensils</p> <p>I measure or weigh my ingredients to the nearest gram accurately</p> <p>I can follow a recipe</p> <p>I can assemble or cook ingredients, including controlling the temperature of cooking equipment</p> <p>I can describe my food product in terms of taste, texture and flavour and relate this to the intended purpose of the food.</p>		<p>I can demonstrate a range of baking and cooking techniques</p> <p>I can measure accurately and calculate ratios of ingredients to scale up or down from a recipe</p>
<b>VOCABULARY</b>	Naming different types of common food, taste, cut, knife, fork, spoon, plate	Meal, healthy, snack, like, dislike, taste, cut, cook, bake	Blender, Carton, Fruit, Healthy, Ingredients, Peel, Peeler, Recipe, Slice, Smoothie, Vegetable	Alternative Diet, Balanced Diet, Expensive, Healthy Ingredients, Nutrients, Packaging, Refrigerator, Sugar, Substitute	Climate, Dry climate, Exported, Imported, Mediterranean climate, Nationality, Nutrients, Polar climate, Recipe, Seasonal food, Seasons, Temperate climate, Tropical climate, Adapt, Budget, Cooling rack, Creaming, Flavour, Method, Prototype, Quantity, Recipe, Rubbing, Sieving, Unit of measure, Utilities		Cross contamination, ethical issues, farm, healthy, nutrients, reared, substitute, vegan, vegetarian, welfare, sustainable, accompaniment, collaboration, cookbook, flavour, nationality, preparation, processed, reared, storybook
<b>Materials</b>	<p>Explore a range of materials.</p> <p>Begin to understand that some materials are better than others for jobs</p>	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;	<p>I can cut materials safely using tools provided</p> <p>I can demonstrate a range of cutting and shaping techniques eg: tearing, cutting, folding and curling</p> <p>I can describe the properties of the materials I have used</p>	<p>I can measure and mark out to the nearest cm</p> <p>I can demonstrate a range of joining techniques eg: gluing, hinges or combining materials to strengthen them.</p> <p>I know that my product needs to be made from materials that are suitable for the job</p>	<p>I can cut materials accurately and safely by selecting appropriate tools</p> <p>I can measure and mark out to the nearest cm</p> <p>I can apply appropriate cutting and shaping techniques that include cuts within the perimeter of the materials</p> <p>I can select appropriate joining techniques - both temporary and permanent</p>		<p>I can cut materials with precision</p> <p>I can show an understanding of the qualities of materials to choose appropriate tools to cut and shape eg: scissors for paper or fabric</p>
<b>Textiles</b>			<p>I can describe textiles by the way they feel</p> <p>I can use templates to shape textiles. I can measure, mark out and cut fabric</p> <p>I can join fabrics using glue.</p>	<p>I can use a running stitch to join textiles</p> <p>I can colour textiles using dyeing, adding sequins or printing</p> <p>I select the appropriate textile so that it does the job I want it to eg feel, insulation, texture and waterproof.</p>	<p>Join textiles with appropriate stitching</p> <p>I understand the need for a seam allowance</p> <p>Select the most appropriate techniques for decorating textiles</p>		<p>I can create objects than require a seam allowance eg: purse or cushion</p> <p>I can join textiles with a combination of stitching techniques eg: back stitch, running stitch</p>

<b>VOCABULARY</b>	Fabric, clothes, puppets, cushions, bags (items made from fabric)	Material, sock puppet, soft, clean, dirty	Decorate, Design, Fabric, Glue, Model, Hand, Puppet, Safety Pin, Staple, Stencil, Template	Accurate, Fabric, Knot, Pouch, Running-stitch, Sew, Shape, Stencil, Template, Thimble	Applique, Cross-stitch, Cushion, Decorate, Detail, Fabric, Patch, Running-stitch, Seam, Stuffing, Aesthetic, assemble, book sleeve, design criteria, evaluation, fabric, fastening, prototype, net, running stitch, target audience, target customer, template	Adapt, annotate, fastening, knot, properties, running stitch, seam, thread, unique, waistcoat, waterproof
<b>Mechanisms/ Mechanics</b>	Thread some large objects with support	Develop fine motor/cutting skills with scissors.  Explore fine motor/threading and weaving (under, over technique) with a variety of materials. Use a prepared needle and wool to practise threading.	I have made a product that moves using a lever or hinge to make a movement	I can use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product  I have made a product that moves using a turning or lifting mechanism eg: lock winding	I can use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product - levers, winding mechanisms, pulleys and gears	I can convert rotary motion to linear using CAMS
<b>VOCABULARY</b>	Move, push, pull	Forwards, Backwards, Wheels, Side to side	Assemble, Design, Evaluation, Mechanism, Model, Sliders, Stencil, Target, Audience, Template, Test	Input, Lever, Linear, Motion, Linkage, Mechanical Motion, Oscillating Motion, Output, Pivot, Reciprocating Motion, Rotary Motion Survey	Exploded-diagram, Function, Input, Lever, Linkage, Mechanism, Motion, Net, Output, Pivot, Pneumatic system, Thumbnail sketch, Aesthetic, Air resistance, Chassis Design, Design, Criteria, Function, Graphics, Kinetic, Energy, Mechanism, Net, Structure	Computer-aided design (CAD), Caption, Exploded-diagram, Function, Input, Linkage, Mechanism,, Motion, Output, Pivot, Prototype, Slider, Structure, Template, Assembly-diagram, Automata, Axle, Bench hook, Cam, Dowel, Drill bits, Follower, Frame, Hand drill
<b>Structures/ Construction</b>	With support begin to use a range of equipment eg: scissors, tape, velcro	Use a range of small tools, including scissors, paint brushes and cutlery; Improve fine motor/scissor skills with a variety of materials.  Join materials in a variety of ways (temporary and permanent).  Joining different materials together	I describe the materials I have used to make my structure  I measure and mark out the materials I need for my structure  I can use materials to practise gluing  I have found out how to make materials for my structure stronger by folding, joining or rolling.	I can use materials to practise drilling, screwing and gluing.  I can use nailing materials to make and strengthen products  I use safe ways of cutting materials, including a junior hacksaw  I know how to make structures stronger by folding, joining or by shape (columns, triangles)	I choose suitable techniques to construct products  I strengthen materials using suitable techniques  I use scoring and folding to shape materials accurately  I make holes, punch, drill accurately	I can develop a range of practical skills to create products eg: cutting, drilling, screwing, nailing, gluing
<b>VOCABULARY</b>	Build, bricks, cardboard, box, glue, Lego or Duplo	Create, cello tape, junk modelling, branches, natural materials, fort, tarpaulin, tools	Client Design, Evaluation, Net, Stable, Strong, Test, Weak, Windmill, Turbine, Axle	Function, Man-made, Mould, Natural, Stable, Stiff, Strong, Structure, Test, Weak	2D Shapes 3D Shapes Design Criteria Evaluate Façade Feature Recyclable Scoring Stable Structure Weak Aesthetic, cladding, design, criteria, evaluation, frame, structure, function, inspiration, pavilion, reinforce, stable, target audience, target customer, texture, theme	Abutment, arched bridge, beam bridge, coping saw, file, mark out, material, properties, reinforce, sandpaper, set square, suspension bridge, tenon saw, truss bridge, tension Reinforce, stability, temporary, permanent, innovation, functional, bracing, natural materials, corrugated iron, bench, hook,

						cladding, coping saw, landscape, modify, vice
<b>Electronics</b>					I use simple circuits to either illuminate or create motion	I can create series and parallel circuits
<b>VOCABULARY</b>					Battery, Bulb, Circuit, Circuit component, Information design, Initial ideas, Information, Public Research, Wire, Battery, Bulb, Buzzer, Cell, Component, Conductor, Copper, Electrical item, Electricity, Function, Insulator, Series, circuit, Switch, Torch, Wire	Circuit, Coin, cell battery, Component, Conductor, Copper, Function, Innovative, Insulator, LED, Modify, Series, circuit, Switch, Backboard, Buzzer, Assemble, Magnetic field, Pliers, Battery pack, Benefit, Circuit symbol, Fine motor skills, Fit for purpose, Form, Function, Gross motor skills, Insulator, LED User,
<b>Computing</b>					I model designs using software	I can control and monitor models using software designed for this purpose

Cycle A					
<b>Autumn</b>	<p><b>All about me</b> Children will make a collage of their family using different materials</p> <p><b>Let's celebrate</b> Pupils will use cutting and sticking skills to make a Christmas/ Eid card</p>	<p><b>All about me</b></p> <p><b>Let's celebrate</b> Pupils will design a soup recipe as a class. They will chop vegetables with support. They will taste the soup and begin giving opinions by describing some of the following; look, feel, smell and taste.</p>	<p><b>Land Before time</b></p> <p><b>Victorians</b> <u>Mechanisms: Make a moving vehicle</u> Pupils will design a vehicle that includes wheels, axles and axle holders, that when combined, will allow the wheels to move. They will create clearly labelled drawings that illustrate movement. Pupils will adapt mechanisms, when: they do not work as they should, to fit their vehicle design, to improve how they work after testing their vehicle.</p>	<p><b>Stone Age, Bronze Age, Iron Age</b> <u>Eating seasonally – a meal for a caveman</u> Pupils will create a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish. They will describe the benefits of seasonal fruits and vegetables and the impact on the environment. They will know how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination. They will follow the instructions within a recipe.</p>	<p><b>Ancient civilisations - Mayan Civilisations c900</b> <u>Come Dine with me – make a Mayan themed meal</u> Pupils will write a recipe for a Mayan meal, incorporating only ingredients available at this time in history. They will explain the key steps, method and ingredients. They will follow a recipe, including using the correct quantities of each ingredient. They will working safely and hygienically with independence. They will evaluate a recipe, considering: taste, smell, texture and origin of the food group.</p>
<b>Spring</b>	<p><b>Dungeons and Dragons</b> Using cutting and sticking skills make a cave for a dragon to live in.</p> <p><b>All creatures great and small</b> Make a bird feeder using threading skills</p>	<p><b>Dungeons and Dragons</b> Pupils will develop a junk model of a dragon. They will improve fine motor/scissor skills with a variety of materials. They will join materials in a variety of ways (temporary and permanent). evaluating their own and others' junk models with adult support.</p>	<p><b>Scented garden</b> <u>Structures: Constructing a sculpture for Arboretum Park</u> Pupils will make a stable structure from card, tape and glue. They will learn the importance of a clear design criteria, including individual preferences and requirements in a design. They will learn how to turn 2D nets into 3D structures, making functioning turbines and axles which are assembled into a main supporting structure. They will understand that the shape of materials can be changed to improve the strength and stiffness of structures. They will understand that axles are used in structures and mechanisms to make parts turn in a circle.</p>	<p><b>Ancient civilisations - Ancient Egyptians</b> <u>Textiles - Egyptian collars</u> Pupils will design criteria to create an Egyptian collar. They will select and cut fabrics with ease using fabric scissors. They will thread needles and tie knots with greater independence. They will decorate fabric using appliqué. They will evaluate an end product, thinking of other ways in which to create similar items.</p>	<p><b>A Child's War</b> <u>Make a Waistcoats/ Aprons for a war child</u> Pupils will design a waistcoat or apron for a war child. They will use a template when cutting fabric to ensure they achieve the correct shape. They will use pins effectively to secure a template to fabric without creases or bulges. They will mark and cut fabric accurately, in accordance with their design. They will experiment with sewing a strong running stitch, making small, neat stitches and following the edge. • Tying strong knots. They will decorate a waistcoat, attaching features (such as appliqué) using thread and finishing the waistcoat with a secure fastening (such as buttons).</p>

		They will describe their favourite and least favourite part of their model.  <b>All creatures great and small</b>	<b>Inspirational people</b> <u>Mechanisms: Making a moving story book about the life of one of the studied people</u> Pupils will design a moving story book to present information on the life of an inspirational person. They will explaining how to adapt mechanisms, using bridges or guides to control the movement. They will follow a design to create moving models that use levers and sliders. They will reviewing the success of a product by testing it with its intended audience.		
<b>Summer</b>	<b>How does our garden grow?</b> Choose your favourite fruits and with support chop soft fruits to make a fruit salad.  <b>The seaside</b> Choose materials to make a waterproof hat for Teddy to take to the seaside in case it rains	<b>How does our garden grow?</b>  <b>The seaside</b> Pupils will design a junk model boat. They will make a boat that floats and is waterproof, considering material choices.	<b>Land Ahoy!</b> <u>Fruit and vegetables – make a pirate smoothie</u> Pupils will design a smoothie for a pirate to combat scurvy. They will chop fruit and vegetables safely to make a smoothie. They will taste and evaluate different food combinations, describing appearance, smell and taste. Pupils will devise packaging that could be taken on board a ship, suggesting information to be included on packaging, understanding the difference between fruits and vegetables.  <b>Circus</b> <u>Textiles: Puppets</u> Pupils will use a template to create a design for a circus puppet. They will cut fabric neatly with scissors, using joining methods to decorate a puppet. They will reflect on a finished product, explaining likes and dislikes.	<b>Significant themes in British History from a local interest point of view – Henry VIII, religion and Tutbury Castle</b> <u>Constructing a Castle</u> Designing a castle with key features that would appeal to Henry VIII. They will drawing and label a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours. Pupils will construct a range of 3D geometric shapes using nets. Creating special features for individual designs. They will evaluate own work and the work of others based on the aesthetic of the finished product and in comparison to the original design.	<b>Extreme Environments – conservation and water</b> <u>Navigating the World</u> Pupils will write a design brief from information submitted by an imaginary client. They will develop design criteria to fulfil the client’s request, considering and suggesting additional functions They will develop a product idea through annotated sketches, placing and manoeuvring 3D objects, using CAD. They will consider materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo). They explain material choices and why they were chosen as part of a product concept.

## Cycle B

<b>Autumn</b>			<b>Knights and Castles</b> <u>Making a moving monster/ dragon</u> Pupils will design a moving monster for a specific audience in accordance with a design criteria. They learn to make linkages using card for levers and split pins for pivots, experimenting with linkages adjusting the widths, lengths and thicknesses of card used. They will cut and assemble components neatly. They will evaluate own designs against design criteria. mechanisms.  <b>Great explorers</b> <u>Make a pouch to hold a special object to take with you on your exploration</u> Pupils will design a pouch for a Great Explorer. They will select and cut fabrics for sewing, decorating a pouch using fabric glue or running stitch. Pupils will learn how to thread a needle.	<b>The Roman Empire and its impact on Britain</b> <u>Structures: Roman Pavillion</u> Pupils will design a stable pavilion structure, based on a roman design, that is aesthetically pleasing. They will select materials to create a desired effect. They will build frame structures designed to support weight. They will make a variety of free standing frame structures of different shapes and sizes, selecting appropriate materials to build a strong structure and cladding.	<b>Europe including focus on Ancient Civilisations - Ancient Greeks</b> <u>Mechanical systems: Making a pop-up Greek myth book</u> Pupils will design a pop-up book which uses a mixture of structures and mechanisms. They will name each mechanism, input and output accurately. They will follow a design brief to make a pop up book, neatly and with focus on accuracy. They will make mechanisms and/or structures using sliders, pivots and folds to produce movement. Evaluating the work of others and receiving feedback on own work, suggesting points for improvement.
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<b>Spring</b>			<p><b>Splendid skies</b></p> <p><b>Local wonder</b>  <u>A picnic for our trip to the park - balanced diet</u>  Pupils will design a healthy wrap for a picnic based on a food combination which works well together. They will learn to slice food safely using the bridge or claw grip. Pupils will be able to describe the taste, texture and smell of fruit and vegetables.</p>	<p><b>Significant themes in British History from a local interest point of view; Rivers and cities – Derby and London</b></p> <p><u>Torches</u>  Pupils will be designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas. They will make a torch with a working electrical circuit and switch. Use appropriate equipment to cut and attach materials. They will test and evaluate the success of a final product Pupils will learn facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison.</p>	<p><b>Brazil – Rainforests</b>  <u>Textiles make a rainforest 'stuffed toy'</u>  Pupils will design a rainforest animal stuffed toy, considering the main component shapes required and creating an appropriate template. They will create a 3D stuffed toy from a 2D design; measuring, marking and cutting fabric accurately and independently. Pupils will create strong and secure blanket stitches when joining fabric. They will thread needles independently They will test and evaluate an end product and give points for further improvements.</p>
<b>Summer</b>			<p><b>Great Fire of London</b>  <u>Mechanisms – fire extinguishing wheel</u>  Design an object which could be used to put out the GFOL. The design must contain a wheel. They will select a suitable linkage system to produce the desired motion; selecting materials according to their characteristics. They will evaluate their different designs.</p> <p><b>Robin Hood and Sherwood Forest</b>  <u>Structures: A chair for Robin in the forest</u>  Pupils will generate ideas using sketching and modelling whilst learning about different types of structures, found in the natural world and in everyday objects. Pupils will make a structure according to the design criteria. They will create joints and structures from paper/card and tape. They will build a strong and stiff structure by folding paper, comparing the stability of different shapes. They will evaluate the strength, stiffness and stability of own structure</p>	<p><b>Significant themes in British History from a local interest point of view - Norman Conquest - feudal system</b></p> <p><u>Make a fastening for Norman clothing</u>  Pupils will design a fastening for a Norman cape. They should consider their audience when making sketches to design. They should make and test a paper template with accuracy and in keeping with the design criteria. They will measure, mark and cut fabric using a paper template. Pupils will select a stitch style to join fabric, working neatly by sewing small, straight stitches. They will know that different fastening types are useful for different purposes and that creating a mock up (prototype) of their design is useful for checking ideas and proportions.</p>	<p><b>British settlements by Anglo Saxons and Scots. The Viking and Anglo Saxon struggle for the kingdom of England</b></p> <p><u>Automata Toys – Viking Ship moving picture</u>  Pupils will experiment with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement. They will understand how linkages change the direction of a force, making things move at the same time. They will understand and draw cross-sectional diagrams to show the inner-workings of their design. They will measure, mark and check the accuracy of the jelutong and dowel pieces required, cutting components accurately using a ruler and scissors. • Pupils will assemble components accurately to make a stable frame.</p>