

	Autumn	Spring	Summer
<b>EYFS</b>	<p>During the Reception Year at school, children will take part in practical hands on activities and conversations, which encourage design and technological thinking. Looking closely at the world around them and making links between their experiences and those of others. These link to the Knowledge and Understanding of the World strand in the EYFS which states:            Continuous provision resources available- children must be taught how to use these. Construction kits- Lego, Duplo, Magnetix, hammer and nails: Water runs, marble runs, conker runs.            Small scale junk modelling- yogurt pots, cereal boxes, bottles, rolls, boxes. Large scale- guttering, tyres logs, wild lands objects, milk crates.            Lolly sticks, straws, card wheels, paper, matchsticks.            Use of fixings- Sellotape, masking tape, string, wool, ribbon, blue tack, staples, split pins, paper clips, pipe cleaners, treasury tags, glue sticks, PVA.            Tools- scissors, hammers, role play building sets, rolling pins, extruders (garlic press and play dough pressers). Tape measures, staplers, hole punch, cutters, tape dispensers.            Use of resources on continuous basis- for; making play dough, biscuits, bread, salt dough, decorations, junk modelling, role play activities.            ICT- Bee bots, computers, IWB, role play phones, ipads, digital cameras, talk tins.</p>		
<b>Year 1</b>	<p><b>Preparing fruits and vegetables</b>  <b>Knowledge</b>            Identify many fruits and vegetables            Know what a healthy meal looks like            Technical vocabulary</p> <p>Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.</p> <p>Experience of cutting soft fruit and vegetables using appropriate utensils. Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</p> <p>Evaluate, discuss the product. Know the source of where and how products are grown.</p>	<p><b>Templates and joining – Puppets</b>  <b>Knowledge</b>            Understand how fabrics are joined            Know how simple textile products are made            Understand how to use a needle and thread to join</p> <p>Children should find out about: How to design and make a textile product.            Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. Explore and used different fabrics. Use sewing techniques to make and embellish a puppet. Cut and joined fabrics with simple techniques. How to design for a specific purpose/function.</p>	<p><b>Freestanding structures</b>  <b>Castles - link to History</b>  <b>Knowledge</b>            What freestanding structures are            How to make them stiffer and more stable</p> <p>Children should find out about:            Different types of castle and their features. 3-d shapes used in construction. How to use construction kits and materials to build rigid structures. Generate and model ideas through drawing and discussion. How to make joins and how to strengthen certain areas to build a castle. Evaluate their finished product.</p>
<b>Year 2</b>	<p><b>Mechanisms - Wheels and Axles</b>  <b>Fire engines linked to History</b>  <b>Knowledge</b>            How parts of a vehicle make it move            What are vehicles used for?            How to design and make a simple vehicle</p> <p>Using construction kits with wheels and axles, children make a product that moves. Demonstration to children how wheels and axles may be assembled as either fixed axles or free axles. Show different ways of making axle holders and stress the importance of making sure the axles run freely within the holders. Ensure that children use the components correctly. Children are taught how to mark out, hold, cut and join materials and construct correctly.</p>	<p><b>Sliders and Levers</b>  <b>Easter cards</b>  <b>Knowledge</b>            Hinge and lever mechanisms what they are            Develop simple design for moving parts</p> <p>Look at a variety of pop up books and cards with moving parts. Understand how to create a hinge and lever and sliding part for a card. Use cutting, joining techniques with papers and card. How cards can be recycled and reused.</p>	<p><b>Templates and Joining</b>  <b>Bags for life</b>  <b>Link to Winchester our city shopping – Geography</b>  <b>Knowledge</b>            Importance to reduce and reuse            Features of a reusable bag            How to create a reusable product</p> <p>Children should find out about products made for a purpose. Making bags for life from sustainable materials. The emphasis will be on recycling and reusing materials sustainably.</p>
<b>Year 3</b>	<p><b>Levers and linkages</b>  <b>Shadow puppets linked to English</b>  <b>Knowledge</b>            Understand the use of levers and linkages.            Make models with moving parts</p> <p>Children should find out about: Levers, linkages and fixed and pivot levers and how to make them. Where they are seen in objects. Use annotated sketches and prototypes to develop, model and communicate ideas. Number and annotate design process. Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. Select from and use finishing techniques suitable for the product they are creating.</p>	<p><b>Healthy and Varied Diet.</b>  <b>Sandwiches, rolls, wraps and pittas</b>  <b>Knowledge</b>            What makes a healthy balanced diet            How attractive and healthy sandwiches are made            Diversity of sandwiches across cultures</p> <p>Children should find out about:            Healthy types of sandwiches using a variety of bread products.            How to design and make different types of snacks using bread products. How to evaluate the success of their and other's products. How to set up and follow a basic recipe using the correct quantity of ingredients to make different fillings.</p>	<p><b>Mechanisms and shell structures</b>  <b>Roman Chariots – History</b>  <b>Knowledge</b>            A stable chassis is integral to the stability of a vehicle and is what the body and axle are joined to.</p> <p>Children will explore a range of vehicles. They will consider the purpose and properties of a chassis and recap types of axles and wheels. They will use tools to mark, measure, cut and assemble a wooden chassis, wheel and axle assembly.            They will develop design criteria to inform the design of an innovative, functional, appealing product that is fit for purpose. They will evaluate against the design criteria.</p>

Year 4	<p><b>2D-3D design- Sewing – Anglo Saxon purses – History</b></p> <p><b>Knowledge</b>  <b>Plan and make simple purse using a pattern</b>  <b>Sew using simple stitches</b>  <b>Understand the function of a simple textile product</b></p> <p>Children should find out about:  How a variety of 2D textile products are made into 3D objects.  How to: Plan the main stages of making. Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.</p>	<p><b>Shell structures (actual and computing) Packaging for a pizza</b></p> <p><b>Knowledge</b>  <b>Construct nets using CAD</b>  <b>Transfer nets onto paper</b>  <b>Create packaging from designs</b>  <b>Understand effective packaging for purpose</b></p> <p>Children should find out about:  How to use a general purpose software to draw accurate shapes, such as Microsoft Word, or simple computer-aided design (CAD), such as 2D Primary by Techsoft. To use this to produce 3D nets (shells) of 3D shapes and then to make them from the computer designed net. Create 3D packaging from their designs. Use computer-generated finishing techniques suitable for the product they are creating.</p>	<p><b>Simple programming electrics – Light up toys</b>  <b>Knowledge</b></p> <p><b>Use simple interface system (Crumble)</b>  <b>Program system- understand how to use coding commands</b>  <b>Make a circuit change through commands</b></p> <p>Children should find out about: How electrical circuits can be programmed.</p> <p>Connect simple electrical components and a battery in a series circuit to achieve a functional outcome. Program a standalone control box, microcontroller or interface box to enhance the way the product works. Evaluate the success of the circuit and the programming for a purpose.</p>
Year 5	<p><b>Celebrating Culture and seasonality</b>  <b>Scones and biscuits</b>  <b>Knowledge</b>  <b>What makes a good scone recipe</b>  <b>How to follow a recipe and make scones</b>  <b>How ingredients are used seasonally</b>  <b>British traditional cookery</b></p> <p>Children should find out about: Cultural food choices, scones and biscuits - savoury varieties. How to devise a recipe and vary a basic recipe. Make and cook from a recipe. Write a step-by-step recipe, including a list of ingredients, equipment and utensils. Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose.</p>	<p><b>Combining different fabric shapes- Mexican, Mayan design.</b>  <b>Knowledge</b>  <b>To create a paper design based and transfer onto fabric</b>  <b>More complete pieces added to paper pattern</b>  <b>Sew using different stitches</b>  <b>sew on applique</b></p> <p>Children should find out about: What makes a good design? Analyse design of fabric objects for everyday use. Make own pattern/ templates, applique wall hanging. Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design. Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</p>	<p><b>Moving mechanisms</b>  <b>Greek artefacts - Caterpults</b></p> <p><b>Knowledge</b>  <b>To understand the use of mechanical mechanisms (levers, pulleys). To link this with understanding of forces.</b></p> <p>Children should find out about:  Different moving mechanisms involving levers, linkages, axles, pulleys. Understand how to construct levers and linkages and pulleys and axles. Connect to Greek artefacts produce models for purpose.</p>
Year 6	<p><b>Mechanical systems</b>  <b>(Linked to Victorians)</b></p> <p><b>Knowledge</b>  <b>How CAMs work- labelled diagrams</b>  <b>How to make CAMs and the equipment needed</b>  <b>Develop understanding of different types of CAMs and how they produce different types of movement</b>  <b>Program system- understand how to use coding commands</b>  <b>make a circuit change through commands</b></p> <p>Children should find out about:  How Victorian inventors developed the use of cams, making objects. Engineering developments today and how different companies and inventors have developed this. Develop a simple design specification to guide their thinking. Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. Make a product using cams. More complex switches and electrical circuits are then incorporated into the project.</p>	<p><b>Food – celebrating culture</b>  <b>World Bread</b>  <b>Knowledge</b>  <b>Know where different types of breads come from</b>  <b>Process of making different types of Bread</b>  <b>World bread timeline- how bread has developed</b></p> <p>Children should find out about:  How different ingredients are available in different parts of the world. Link to Bible R.E. study how bread is discussed in the Bible. How unleavened bread is made and the technical way bread is made and rises using yeast. Develop understanding of bread around the world. Discuss different recipes. Try different breads. Understand how bread is mass-produced in factories and have understanding of techniques of mass production. Understand how bread is made appealing and it's importance historically as a food. Develop their own recipe and make different breads. Design bread for a specific purpose, i.e allergy aware, sweet, savoury, appealing to certain group. Marketing and advertising their product. Evaluate success of product. Understand the sustainability of resources and the care taken to grow crops sustainably.</p>	<p><b>Computer aided design-Textiles</b>  <b>Knowledge</b>  <b>To know the work of William Morris</b>  <b>To know a variety of stitches</b>  <b>To know how textiles are used functionally</b></p> <p>Tablet case design</p> <p>Select from and use a range of tools and equipment, including CAD, Techsoft, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.</p> <p>Investigate and analyse textile products linked to their final product.</p> <p>Compare the final product to the original design specification. Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p>

