



<p>National Curriculum (2014)</p> <p><b>Substantive Knowledge</b></p> <p><b>Coverage</b></p> <p><b>Teaching through a variety of creative and practical activities.</b></p>	<p style="text-align: center;"><b><u>EYFS</u></b></p> <ul style="list-style-type: none"> <li>• <b><u>KUW Technology</u></b> To recognise a range of technology is used in places such as homes and schools. Select and use technology for a particular purpose.</li> <li>• <b><u>Expressive arts and Design</u></b> <i><b>Exploring and using media and materials</b></i> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>• <b><u>Being imaginative</u></b> Use what they have learnt about media and materials in original ways, thinking about uses and purposes. Represent their own ideas, thoughts and feelings through design and technology.</li> </ul> <p><b><u>Physical Development Health and self-care</u></b> Understand the importance of a healthy diet. Talk about ways to keep healthy and safe.</p>	<p style="text-align: center;"><b><u>Key stage 1</u></b></p> <ul style="list-style-type: none"> <li>• <b><u>Design</u></b> 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.</li> <li>• <b><u>Make</u></b> 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.</li> <li>• <b><u>Evaluate</u></b> Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.</li> <li>• <b><u>Technical Knowledge</u></b> 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.</li> <li>• <b><u>Food and Nutrition</u></b> Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.</li> </ul>
<p><b>See Curriculum Overview – for coverage of these objectives between year groups</b></p>		
<p><b>Aims in DT at Dudley Infant Academy</b></p>	<p>Develop the creative, technical and practical expertise (disciplinary knowledge and vocabulary) needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.</p> <p>Build and apply a repertoire of (substantive and disciplinary) knowledge, understanding and skills in order to design and make good-quality prototypes and products for a wide range of users.</p> <p>Critique, evaluate and test their ideas and products.</p> <p>Understand and apply the principles of nutrition and learn how to cook basic recipes.</p>	



Disciplinary Knowledge			
<p>Apply creativity and imagination, design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.</p> <p>Acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art.</p> <p style="background-color: yellow;">Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens.</p> <p>Evaluation of past and present design and technology, develop a critical understanding of its impact on daily life and the wider world.</p> <p>Being to understand and explain how high-quality design and technology education makes an essential contribution to the wider world.</p>			
Dudley Infant Academy Intent			
<p><b>Enterprise and Team Challenge Week – opportunities to work in teams, discuss, design, make and sell a product. Market the product. Decide how to spend the profit.</b></p>			
	EYFS (40-60 months)	Year 1	Year 2
Design: Developing, planning and communicating ideas	<p>Talk about their design ideas. Explain what they are making and which materials they are using.</p> <p>Select materials from a limited range that will meet a simple design criteria e.g. rough.</p> <p>Select and name the tools needed to work the materials e.g. scissors for paper. Explore ideas by rearranging materials.</p> <p>Draw a picture/ take a photograph of their design/ model.</p>	<p><b>Breadth of Study</b> Create simple designs for a product</p> <p><b>Knowledge and Skills</b> Begin to draw on their own experience to help generate ideas and research conducted on criteria. For example, exploring houses built during the time of The Great Fire of London.</p> <p>Begin to understand the development of existing products: What they are for, how they work, materials used.</p> <p>Start to suggest ideas and explain what they are going to do.</p>	<p><b>Breadth of Study</b> Design purposeful, functional, appealing products for himself/herself and other users based on design criteria, for example, when making their toy castles.</p> <p>Generate, develop, model and communicate ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p> <p><b>Knowledge and Skills</b> Start to generate ideas by drawing on their own and other people's experiences.</p> <p>Begin to develop their design ideas through discussion, observation, drawing and modelling.</p> <p>Identify a purpose for what they intend to design and make. For instance, children are provided with the opportunity to design and make their own Christmas</p>



		<p>Understand how to identify a target group for what they intend to design and make based on a design criteria.</p> <p>Begin to develop their ideas through talk and drawings.</p> <p>Make templates and mock ups of their ideas in card and paper or using computing skills.</p>	<p>cookies for a friend or relative. They are encouraged to explain why they have chosen to give them to this specific person, drawing on the Dudley values.</p> <p>Understand how to identify a target group for what they intend to design and make based on a design criteria.</p> <p>Develop their ideas and knowledge through talk and drawings and label parts.</p> <p>Make templates and mock ups of their ideas in card and paper or computing skills.</p>
<b>ASSESSMENT</b>			<p><b>By the end of Year 2 most children should: Use simple design criteria; state what their products are, who and what they are for and how they will work.</b></p> <p><b>Generate ideas using their own experiences and existing products; use talk, drawing, templates, mock-ups and where appropriate computers.</b></p>
<p><b>Make:</b> <b>Working with tools, equipment, materials and components to make quality products</b></p>	<p><u>Construct with a purpose in mind:</u> Children can build models/sculptures which replicate those in real life. Can use a variety of resources – loose part play. Make something that they give meaning to. Make something with clear intentions.</p> <p><u>Fine Motor:</u> Use a range of small tools, including scissors to shape, paintbrushes and cutlery. Explore weaving and sewing on plastic binca with wool and large plastic needles.</p> <p><u>Creating with materials:</u> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Investigate joining materials: sellotape, masking tape, ribbon, glue, treasury tags, sticky tape, split pins, string etc.</p>	<p><b>Breadth of Study</b> Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <p><b>Knowledge and Skills</b> Begin to make their design using appropriate techniques.</p> <p>Begin to build structures such as their Great Fire of London houses, exploring how they can be made stronger, stiffer and more stable.</p> <p>Explore and use knowledge of mechanisms [for example, levers, sliders, wheels and axles] when making their Pump Rockets.</p> <p>With help measure, mark out, cut and shape a range of materials. Explore using tools e.g. scissors and a hole punch safely.</p>	<p><b>Breadth of Study</b> Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</p> <p><b>Knowledge and Skills</b> Begin to select tools and materials; use correct vocabulary to name and describe them.</p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable. For example, explore ways of making their kite structure more stable when constructing their own kites.</p> <p>With help measure, cut and score with some accuracy. Learn to use hand tools safely and appropriately.</p> <p>Use knowledge to assemble, join and combine materials in order to make a product.</p>



	<p>Explore and use a variety of materials (smooth, rough, bendy, hard). Make box models, cards, masks etc. using a variety of papers, card, material, wool, string, construction equipment, pipe cleaners, straws etc.</p>	<p>Use knowledge to begin to assemble, join and combine materials and components together when building their puppets, using a variety of temporary methods e.g. glues or masking tape.</p> <p>Begin to use simple finishing techniques to improve the appearance of their product.</p>	<p>Demonstrate how to cut, shape and join fabric to make a simple product.</p> <p>Use basic sewing techniques when making Christmas cards.</p> <p>Start to choose and use appropriate finishing techniques based on own ideas.</p>
<b><u>Vocabulary</u></b>		<p>Cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder</p> <p>Slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards.</p>	<p>Cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder</p> <p>Vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used.</p>
<b><u>ASSESSMENT</u></b>			<p><b>By the end of Year 2 most children should: Plan by suggesting what to do next; select from a range of tools, equipment, materials and components.</b></p> <p><b>Follow procedures for safety and hygiene; measure, mark out, cut, shape, assemble, join, combine and finish a range of materials and components.</b></p>
<b>Evaluate: Evaluating processes and products</b>	<p>Share their creations, explaining the process they have used.</p> <p>Verbal and class evaluations of designs/models with support.</p> <p>Investigating/ handling existing products before designing/ making them.</p> <p>Know how to improve models (scrunch, twist, fold, bend, roll).</p>	<p><b>Breadth of Study</b></p> <p>Explore and evaluate a range of existing products. For example, explore and evaluate different puppets before designing their own.</p> <p><b>Knowledge and Skills</b></p> <p>Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria).</p>	<p><b>Breadth of Study</b></p> <p>Evaluate their ideas and products against design criteria</p> <p><b>Knowledge and Skills</b></p> <p>Look at a range of existing products such as kites and explain what they like and dislike about products and why.</p> <p>Start to evaluate their products as they are developed, identifying strengths and possible changes they might</p>



		<p>When looking at existing products explain what they like and dislike about products and why.</p> <p>Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.</p>	<p>make. Test out the kites and see if they take flight, discuss and make any changes/improvements.</p> <p>With confidence talk about their ideas, saying what they like and dislike about them.</p>
<b><u>Vocabulary</u></b>		<p>Planning, investigating design, evaluate, make, user, purpose, ideas, product,</p>	<p>Investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function</p>
<b><u>ASSESSMENT</u></b>			<p><b>By the end of Year 2 most children should: Make simple judgements about their products and ideas against design criteria.</b></p> <p><b>Explore who and what products are for, how they work and are used, what materials they are made from and what they like and dislike about them.</b></p>
<b><u>Technical Knowledge</u></b>	<p>Recognise that a range of technology is used in places such as homes and school.</p> <p>Select and use technology for particular purposes.</p> <p>Show an interest in toys with buttons and mechanisms.</p> <p>Begin to know about the simple characteristics of materials and components.</p> <p>Begin to understand the movement of simple mechanisms such as levers, sliders and wheels.</p> <p>Know that food ingredients should be combined according to their sensory characteristics.</p> <p>Explore and use a variety of materials (smooth, rough, bendy, hard) Improved vocabulary – flexible, rigid</p>	<p><b>Breadth of Study</b> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p><b>Knowledge and Skills</b> Recognise a range of technology is used in places such as homes and schools.</p> <p>Select and use technology for particular purposes.</p> <p>Know how to operate simple equipment and show an interest in toys with buttons, flaps and simple mechanisms and operate them successfully. Use this knowledge to inform the design and model of their Pump Rockets.</p> <p>Understand 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><b>Breadth of Study</b> Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>Apply their understanding of computing to program, monitor and control their products</p> <p><b>Knowledge and Skills</b> Understand the working characteristics of materials and components.</p> <p>Know the movement of simple mechanisms such as levers, sliders, wheels and axles.</p> <p>Know that food ingredients should be combined according to their sensory characteristics.</p> <p>Understand how freestanding structures can be made stronger, stiffer and more stable.</p>



		Begin to use the correct vocabulary for projects.	Recognise that 3D textiles products can be assembled from two identical fabric shapes.  Use the correct technical vocabulary for projects.  Begin to understand and use a wider range of materials and components e.g. electrical circuits and programming computing systems.
<b><u>Vocabulary</u></b>		Joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish	
<b><u>ASSESSMENT</u></b>			<b>By the end of Year 2 most children should: Know about the simple working characteristics of materials and components, the movement of simple mechanisms, how free-standing structures can be made stronger, stiffer, more stable; use the correct technical vocabulary.</b>
<b><u>Food and Nutrition</u></b>	<p>Begin to develop a food vocabulary using taste, smell, texture and feel.</p> <p>Explore familiar food products e.g. fruit and vegetables.</p> <p>Growing and cooking vegetables.</p> <p>Stir, spread, knead and shape a range of food and ingredients.</p> <p>To learn about healthy eating and the need for a healthy diet.</p> <p>Begin to work safely and hygienically</p> <p>Measure and weigh food items, non-statutory measures e.g. spoons, cups.</p> <p>To prepare recipes linked to topics including food from other countries and party food.</p>	<p><b>Breadth of Study</b> To use simple tools with help to prepare food safely.</p> <p>Use the basic principles of a healthy and varied diet to prepare dishes.</p> <p>Understand where food comes from.</p> <p><b>Knowledge</b> Begin to understand that all food comes from plants or animals.</p> <p>Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught.</p> <p>Start to understand how to name and sort foods into the five groups in 'The Eat well plate'.</p> <p>Begin to understand that everyone should eat at least five portions of fruit and vegetables every day.</p>	<p><b>Breadth of Study</b> Use a wider range of cookery techniques to prepare food safely, for instance, when making Christmas cookies.</p> <p>Use the basic principles of a healthy and varied diet to prepare dishes</p> <p>Understand where food comes from</p> <p><b>Knowledge</b> Understand 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>Understand how to name and sort foods into the five groups in 'The Eat well plate'</p> <p>Know that everyone should eat at least five portions of fruit and vegetables every day.</p> <p><b>Skills</b> Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source.</p>



		<p>Know how to prepare simple dishes safely and hygienically, without using a heat source. Know how to use techniques such as cutting, peeling and grating.</p> <p>Describe the properties of the food ingredients: taste, smell, texture, and consistency</p> <p><b>Skills</b> Weigh or measure ingredients accurately</p> <p>Prepare food safely and hygienically and describe what this means</p>	<p>Demonstrate how to use techniques such as cutting, peeling and grating.</p>
<b><u>Vocabulary</u></b>		<p>Fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients,</p>	
<b><u>ASSESSMENT</u></b>			<p><b>By the end of Year 2 most children should: Know that food comes from plants or animals and that it is farmed or caught.</b></p> <p><b>Know how to prepare simple dishes safely and hygienically without a heat source, name and sort foods into groups; know that everyone should eat at least five portions of fruit and vegetables a day.</b></p>