

# Fairstead Community Primary and Nursery School DT Curriculum Map 2023-24



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>EYFS</b>	<p><b>All About Me</b></p> <p>Expressive Arts and Design -creating with materials -being imaginative and expressive</p> <p>‘my family’ looking at different structures Making colour monsters Making a feelings jar Lego Home corner Trains and cars Art straw skeletons Role play home corner Costumes Real costumes</p>	<p><b>Once Upon a Time</b></p> <p>Expressive Arts and Design -creating with materials -being imaginative and expressive</p> <p>‘3 little pigs’- experimenting with different materials Food tasting Making sparklers Bonfire pictures Bonfire safety Food tasting – linked to festivals and fairy-tale stories Nativity sets Creating nativity out of toilet rolls Salt dough decorations Christmas cards Christingles</p>	<p><b>Amazing Animals</b></p> <p>Expressive Arts and Design -creating with materials -being imaginative and expressive</p> <p>Pancake making Winter walk Chinese food tasting Bird feeders Jungle animal masks Jungle role play Construction- making a jungle Chinese restaurant role play</p>	<p><b>Oh The Places We’ll Go</b></p> <p>Expressive Arts and Design -creating with materials -being imaginative and expressive</p> <p>Easter nests Minibeast homes/hotels Hot cross bun baking Giant’s castle Seasonal clothing in role play Looking at different beans/ fruit and vegetables Potato printing Measuring</p>	<p><b>Come Outside</b></p> <p>Expressive Arts and Design -creating with materials -being imaginative and expressive</p> <p>Where does food come from?</p> <p>Mechanics Small world travel Junk modelling bus, trains etc.</p>	<p><b>Beside the Seaside</b></p> <p>Expressive Arts and Design -creating with materials -being imaginative and expressive</p> <p>Making rockpools Eye patches Pirate hats Ice lollies Flags Ice cream making Moon sand ice creams Seaside clothes Tent/ camping role play Picnics pirate craft</p>
<p><b>Continuous provision-</b> Construction area, den making, climbing equipment, junk modelling  <b>Forest school-</b> Looking at and making own bird nests, building little people's houses/bug hotels, making stick towers, den building</p>						

<p>Year 1</p>	<p><b>What is Design and Technology? Structures</b></p> <ul style="list-style-type: none"> <li>-What is Design and Technology?</li> <li>-Investigating the process designers follow to develop and make a product</li> <li>-What is a structure?</li> <li>-natural and manufactured structures</li> <li>-What is a stable structure?</li> <li>-Looking at different designs to identify ways to make a structure stable- base, anchor, brace</li> <li>-How can structures be made stronger?</li> <li>-Experimenting with folding, rolling and joining paper to make structures e.g. a triangle or newspaper tower</li> </ul>	<p><b>Slider mechanisms</b></p> <ul style="list-style-type: none"> <li>-What is a slider?</li> <li>-Make simple sliders without and then with a guide bridge</li> <li>-What other slider mechanisms are there?</li> <li>-Looking at and making examples of curved and wavy sliders</li> <li>-Making a greeting card with a slider</li> <li>-How can I improve my design?</li> <li>-Choosing a slider mechanism to make</li> </ul>	<p><b>Portable Snacks</b></p> <ul style="list-style-type: none"> <li>-Which snacks are portable?</li> <li>-What are the features of a good portable snack?</li> <li>-Practising food preparation techniques- spreading, grating, peeling, folding, weighing, snipping, stirring</li> <li>-Looking at examples of snack products</li> <li>-How will I design my own portable snack?</li> <li>-Draw a design diagram, including details of how to make your product</li> <li>-Improving my design</li> </ul>
<p>Year 2</p>	<p><b>Solid Structures</b></p> <ul style="list-style-type: none"> <li>-What is a 'solid structure'?</li> <li>-examples of natural and manufactured solid structures</li> <li>-Investigating brick walls, narrow and wide based towers</li> <li>-Structure designs- what are they made from?</li> <li>-How will I design my own bridge?</li> <li>-Improving my design</li> </ul>	<p><b>Lever mechanisms</b></p> <ul style="list-style-type: none"> <li>-What is a 'lever mechanism'?</li> <li>-Investigating levers and understanding fulcrum, pivot, rigid, force, input, output</li> <li>-Looking at and making examples of simple levers</li> <li>-products which use lever mechanisms</li> <li>-How will I design my own litter grabber?</li> <li>-Make a mood board for a litter grabber and list materials for your design</li> <li>-improving my design</li> </ul>	<p><b>Wheel and axle mechanisms</b></p> <p>Couscous dish</p> <ul style="list-style-type: none"> <li>-What are wheels and axels?</li> <li>-Looking at examples of products which use wheels and axels e.g. a wind powered vehicle</li> <li>-Investigate techniques for joining wheels to an axle and axels to a frame</li> <li>-Testing a design by making my own wind powered vehicle</li> <li>-Re-thinking if something goes wrong</li> </ul> <p>-What is couscous?</p> <ul style="list-style-type: none"> <li>-Tasting examples-what ingredients are used to make them?</li> <li>-Design my own couscous dish- what ingredients will I use?</li> </ul>

<p>Year 3</p>	<p><b>What is Design and Technology? Frame Structures</b></p> <ul style="list-style-type: none"> <li>-What is Design and Technology?</li> <li>-Collect pictures of buildings from early structures to eco homes</li> <li>-Describe ways they have been improved</li> <li>-How are frame structures made more rigid?</li> <li>-Investigate and define rigid, truss, strut and joining plate</li> <li>-Investigate and make different frame structures</li> <li>-How are frame structures used?</li> <li>-Investigate how frame structures are used to design bridges. Why do they need to be strong?</li> <li>-Complete your own product outline for a truss bridge</li> <li>-Arrange an annotated mood board to show more details.</li> <li>-What does a prototype show us?</li> <li>-Apply knowledge of frame structures to make a truss bridge.</li> </ul>	<p><b>Linked Levers Vegetable Soup</b></p> <ul style="list-style-type: none"> <li>-What movement do linked levers produce?</li> <li>-Describe linear, rotary, reciprocating and oscillating movements</li> <li>-How do you design for a specific purpose and user?</li> <li>-Complete my own product outline for a safety barrier.</li> <li>-What does a prototype show us?</li> <li>-Apply knowledge of foldable safety barriers to make a prototype</li> <li>-Design and make a linked lever mechanism of choice e.g. extendable grabber, scissor lift platform</li> </ul> <p>What ingredients are used to make soup?</p> <ul style="list-style-type: none"> <li>-Look at and taste examples of different sorts of vegetable soups- what ingredients are used to make them?</li> <li>-Design my own vegetable soup dish- what ingredients will I use?</li> </ul>	<p><b>App control</b></p> <ul style="list-style-type: none"> <li>-How are apps used to control devices?</li> <li>-List examples of app-enabled devices.</li> <li>-How can code be used to control devices?</li> <li>-Look at examples of app-controlled devices. How is code used to control them? Describe the electrical components used and make a simple device</li> <li>-How do you design for a specific purpose and user?</li> <li>-Complete my own product outline for a lifestyle helper</li> <li>-What makes an effective code?</li> <li>-Draw a design diagram, including how to make the product</li> <li>-What does a prototype show us?</li> <li>-Apply knowledge of app-controlled devices to make a prototype robot, and the code to control it.</li> <li>-Test my code – evaluate and re-think</li> <li>-Modify my design and explain my decisions.</li> </ul>
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<p>Year 4</p>	<p><b>Shell Structures</b> <b>Dips</b></p> <ul style="list-style-type: none"> <li>-How are shell structures used?</li> <li>-List and describe examples of natural and manufactured shell structures</li> <li>-Experiment with different shell structures, linking to knowledge of frame structures</li> <li>-How do you design for a specific purpose and user?</li> <li>-Complete your own product outline for a cardboard chair</li> <li>-Decide which materials and techniques to include</li> <li>-Test my prototype – evaluate and re-think</li> <li>-Modify my design and explain my decisions</li> <li>-Design and make a shell structure of choice e.g. a piece of furniture, a box with compartments, a boat, an igloo or other shelter</li> </ul> <ul style="list-style-type: none"> <li>-What is similar and different about different dips?</li> <li>-Look at and taste examples of different sorts of dips- what ingredients are used to make them?</li> <li>-Design my own dip- test my design by making my dip</li> </ul>	<p><b>Pneumatics</b></p> <ul style="list-style-type: none"> <li>-What is a pneumatic mechanism?</li> <li>-Look at examples of machines that use pneumatics or hydraulics</li> <li>-Draw annotated diagrams to show how they work</li> <li>-How are hydraulics used in products?</li> <li>-Investigate pneumatic and hydraulic systems and make own bottle pneumatics or butterfly</li> <li>-Investigate the ways pneumatics and hydraulics can be used in e.g. an excavator.</li> <li>-Apply knowledge of linked levers and hydraulics to make products based on given designs</li> <li>-Complete your own product outline for a hydraulic lifting device.</li> <li>-Design and make a pneumatic or hydraulic product of choice e.g. a lifter, a robotic arm, an automatic door opener</li> </ul>	<p><b>Paper Circuits</b></p> <ul style="list-style-type: none"> <li>-How are paper circuits constructed?</li> <li>-Draw annotated diagrams to show the correct way to connect an LED to a cell</li> <li>-How are paper circuits used in products?</li> <li>-Investigate the ways paper circuits can enhance products and add effects</li> <li>-Look at birthday cards which include paper circuits. Label and annotate the visible and invisible design features.</li> <li>-Complete my own product outline for a paper circuit greeting card.</li> <li>-Test my card – evaluate and re-think</li> <li>-Modify my design and explain my decisions</li> </ul>
<p>Year 5</p>	<p><b>What is Design and Technology?</b> <b>Artificial Intelligence</b></p> <ul style="list-style-type: none"> <li>-What is Design and Technology?</li> </ul>	<p><b>Cams</b></p> <ul style="list-style-type: none"> <li>-What is the purpose of a cam?</li> <li>-Define reciprocal movement and dwell.</li> </ul>	<p><b>Frame Structures</b> <b>Bread</b></p> <ul style="list-style-type: none"> <li>-What are the benefits of frame structures?</li> </ul>

	<ul style="list-style-type: none"> <li>-Collect pictures of phones from the earliest phones to the latest smartphones. Describe ways they have been improved and why.</li> <li>-How can AI let you control devices using apps?</li> <li>-Look at examples of smart devices. How is AI used to control them?</li> <li>-Describe the electrical components and code used.</li> <li>-Make a device e.g. a force sensor/distance sensor.</li> <li>-Complete my own product outline for a colour-sensing toy.</li> <li>-Design the code needed to make the product work</li> <li>-Test my code – evaluate and re-think</li> </ul>	<ul style="list-style-type: none"> <li>-Draw annotated diagrams to show how a pear-shaped cam, snail-shaped cam and eccentric circle cam works</li> <li>-How are cams and followers used in products?</li> <li>-Investigate different cams and followers- make own cam mechanism</li> <li>-Apply knowledge of cams to label and annotate an automaton picture, showing its design features and listing the materials needed to make it.</li> <li>-Complete my own product outline for an automaton toy</li> <li>-Design and make a product of choice using cams e.g. a toy for a younger child, a model that shows how a piston in an engine can turn a wheel and axle</li> </ul>	<ul style="list-style-type: none"> <li>-Demonstrate ways that straw can be joined, including making tetrahedrons.</li> <li>-Describe how the joins give strength to a frame structure.</li> <li>-Complete my own product outline for a tetrahedral kite</li> <li>-Decide which materials to include</li> <li>-Apply knowledge of tetrahedron structures to make a prototype</li> <li>-Design and make a frame structure choice e.g. kite, model pyramid, a geodesic dome</li> <li>-How is bread used to make familiar foods?</li> <li>-Look at and taste examples of different sorts of bread products- what ingredients and skills are used to make them?</li> <li>-Design bread rolls- what ingredients will you use? Will you add extras for interest/taste?</li> </ul>
<p>Year 6</p>	<p><b>Arch Structures</b></p> <ul style="list-style-type: none"> <li>-What is an arch structure and how are they used?</li> <li>-Look at examples of arch structures. Define keystone, pier, impost, voussoir.</li> <li>-Draw an annotated diagram to show how an arch gains it's strength.</li> <li>-What makes an arch strong?</li> <li>-Apply knowledge of solid structures to make products that have an arch e.g. using cardboard boxes, paper cups or a simple card arch.</li> <li>-What can inspire our design?</li> </ul>	<p><b>Electronic Motors Pulleys and gears</b></p> <ul style="list-style-type: none"> <li>-What movement do electronic motors produce?</li> <li>-Describe the rotary movement of a motor.</li> <li>-Experiment with different motor components e.g. fans, propellers, pulleys and gears in simple vehicles</li> <li>-How do you design for a specific purpose and user?</li> <li>-Complete my own product outline for a motorised car</li> <li>-Test my prototype</li> <li>-How are pulleys and gears used for mechanical advantage?</li> </ul>	<p><b>Bolognese</b></p> <ul style="list-style-type: none"> <li>-What are the traditional ways to use bolognese sauce?</li> <li>-Describe the design features of spaghetti bolognese, lasagna or pasta el forno</li> <li>-What safety features need to be taken into account when preparing one of these?</li> <li>-What ingredients are used to make bolognese?</li> <li>-Look at and taste examples of different sorts of bolognese- what ingredients are used to make them?</li> <li>-Design my own bolognese based on my intended user- what ingredients will I use?</li> <li>-What will my recipe look like? What utensils will I need?</li> </ul>

<ul style="list-style-type: none"> <li>-Investigate buildings and architects who use e.g. parabolic arches in their designs</li> <li>-Apply knowledge of arch structures to make products based on given designs</li> <li>-Complete my own product outline for a building with an arch roof structure e.g. a model school.</li> <li>-Test my model– evaluate and re-think</li> <li>-Modify my design and explain my decisions</li> <li>-Design and make an arch structure of choice e.g. a building or shelter, a bridge</li> </ul>	<ul style="list-style-type: none"> <li>-Draw annotated diagrams showing how different pulleys and gears work- a simple pulley, a moving pulley, a combined block and tackle pulley, gearing up and down, mitre gear</li> <li>-Complete my own product outline for an aerial tramway (cable car).</li> <li>-Arrange an annotated mood board to show more details and decide which materials to include.</li> <li>-Test my prototype – evaluate and re-think</li> <li>-Modify my design and explain my decision</li> </ul>	<ul style="list-style-type: none"> <li>-Organise a design diagram, showing the details of the process to follow to make bolognese- arrange the annotations so they are helpful</li> <li>-Is my recipe suitable?</li> <li>-Test my design by making my bolognese</li> </ul>
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