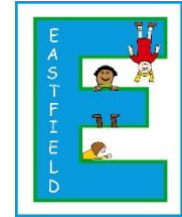


Eastfield Primary School Design and Technology Knowledge and Skills Progression



Pupils should be taught across the 4 core themes:

Design:

Pupils should be taught to:

KS1:

1. Design purposeful, functional, appealing products for themselves and other users based on design criteria.
2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

KS2:

1. 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.
2. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided designs.

Make:

Pupils should be taught to:

KS1:

1. Select from and use a range of tools and equipment to perform practical tasks – cutting, shaping, joining and finishing
2. Select from and use a wide range of materials and components, including construction, materials, textiles and ingredients according to their characteristics.
3. Use the basic principles of a healthy and varied diet to prepare dishes.
4. Understand where food comes from.

KS2:

1. Select from and use a wider range of tools and equipment to perform practical tasks accurately - cutting, shaping, joining and finishing
2. 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.
3. Understand and apply the principles of a healthy and varied diet.

4. Prepare and cook a variety of predominately savoury dishes using a range of cooking techniques.
5. Understand seasonally, and know where and how a variety of ingredients are grown, reared, caught and processed.

Evaluate:

Pupils should be taught to:

KS1:

1. Explore and evaluate a range of existing products.
2. Evaluate their ideas and products against design criteria.

KS2:

1. Investigate and analyse a range of existing products.
2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
3. Understand how key events and individuals in design and technology have helped shaped the world.

Technical Knowledge:

Pupils should be taught to:

KS1:

1. Build structures, exploring how they can be made stronger, stiffer and more stable.
2. Explore and use mechanisms in their products – lever, sliders, wheels and axels.

KS2:

1. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
2. Understand and use mechanisms systems in their products – gears, pulleys, cams, levers and linkages.
3. Understand and use electrical systems in their products – series circuits, incorporating switches, bulb, buzzers and motors.
4. Apply their understanding of computing to program, monitor and control their products.

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Themes and Focus	Autumn – Helping hands Eastfield Blocks	Autumn – Home Sweet Home	Autumn – Travelling around.	Autumn – Meet the Flintstones.	Autumn – Tomb Raiders.	Autumn – Greece Lightning.	Autumn – Mexican Hats.
	Spring – Once upon a time The land before time. Summer – In our back garden. What a wonderful world!	Spring – Out of this World. Summer – Land Ahoy!	Spring – London’s Burning. Summer – Wonder Women.	Spring – Building an Empire Summer – Street Detectives	Spring – Let the battle commence! Summer – A Large and dirty town	Spring – Conquering Castles Summer – Black by day, red by night.	Spring – Nautical Know How. Summer –The War at Home

<p style="text-align: center;">Projects</p>	<p>Construction – model building, use of lego, building blocks, exploring materials.</p> <p>Textiles – role play costumes, puppets.</p> <p>Food – eating with cutlery, watching cooking e.g. porridge.</p>	<p><u>Autumn 1:</u> Construction – Wall building</p> <p><u>Autumn 2:</u> Textiles – Row of houses collage in the style of Sarah Nichol</p> <p><u>Spring 1:</u> Mechanism – Rocket launch (Slider)</p> <p><u>Spring 2:</u> Food- Fruit smoothie and sandwich</p> <p><u>Summer 1:</u> Construction – Lighthouse</p> <p><u>Summer 2 :</u> Mechanism – Beach buggy (Wheel and axels)</p>	<p><u>Autumn 1:</u> Construction – Canal tunnel</p> <p><u>Autumn 2:</u> Food – Muffins</p> <p><u>Spring 1:</u> Construction – Balsa Wood Houses</p> <p><u>Spring 2:</u> Mechanism – Fire Engine (lever)</p> <p><u>Summer 1:</u> Food – Cheese and Onion Quiches</p> <p><u>Summer 2:</u> Textiles – Hand puppet</p>	<p><u>Autumn 1:</u> Food – Bagels</p> <p><u>Autumn 2:</u> Construction – Making Stone Age Houses</p> <p><u>Spring 1:</u> Construction – Roman Aqueduct</p> <p><u>Spring 2:</u> Mechanism – Roman Catapult (lever)</p> <p><u>Summer 1:</u> Textiles – Bunting</p> <p><u>Summer 2:</u> Construction – Making a new piece of</p>	<p><u>Autumn 1:</u> Construction – Pharos (Egyptian Lighthouse)</p> <p><u>Autumn 2:</u> Mechanism – Egyptian pyramid lift (Pulley)</p> <p><u>Spring 1:</u> Construction – Bird Box</p> <p><u>Spring 2:</u> Food – Viking Vegetable Soup</p> <p><u>Summer 1:</u> Textiles – Rag Rug</p> <p><u>Summer 2:</u> Electronics – Victorian silhouette torch</p>	<p><u>Autumn 1:</u> Construction – Trireme (Greek Boat)</p> <p><u>Autumn 2:</u> Mechanism – Greek Myth Cams (Cams and Linkages)</p> <p><u>Spring 1:</u> Construction – Portcullis</p> <p><u>Spring 2:</u> Electronics – Adding motor and switch to portcullis</p> <p><u>Spring 2:</u> Textiles – Bayeux Tapestry</p> <p><u>Summer 1:</u> Construction – Bridges (Iron Bridge)</p> <p><u>Summer 2:</u></p>	<p><u>Autumn 1:</u> Construction – Mayan Rope Bridge</p> <p><u>Autumn 2:</u> Food – Chilli hot chocolate and chocolate brownie.</p> <p><u>Spring 1:</u> Textiles – Tudor Cushion</p> <p><u>Spring 2:</u> Food – Spicy chicken pasta</p> <p><u>Summer 1:</u> Mechanism – WW2 Tank (Gears)</p> <p><u>Summer 2:</u> Electronics – Adding a computer programming to move tank.</p>
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				playground equipment.		Food – Cornish Lamb Pasty	
Design	Children can participate in small groups, class, or one-to-one discussion, offering own ideas, using recently introduced vocabulary. They can express their ideas about their ideas in full sentences. They can set and work towards simple goals.	Children can use their own ideas to make something They can design achieving some of the design criteria.	Children can think of an idea based on existing products. They can design a product that is functional. They can design a product to match a design criteria.	Children can prove that their design meets some set criteria. They can draw and annotate sketches of their design. They can test materials of an existing product to help their own design.	Children can draw up a simple design specification meeting requirement of the product. They can model a prototype of their product. They can explain the functionality of their design. They can discuss the best ingredients to choose based on seasonality.	Children can research to make their product historically accurate. They can develop their design using a cross-section. They can create their own design specification for their product. They can use measurement to make their design more accurate.	Children can use an exploded diagram to show the different components on their product. They can design movement using a computer program. They can justify their plans by convincing the consumers.

Make	<p>Children can safely use and explore a variety of materials, tools and techniques, experimenting with design, texture, form and function. They can be confident to try new activities and show independence, resilience and perseverance in the face of a challenge. They can work cooperatively and take turns with others. They can use a range of tools, including</p>	<p><u>Construction</u> Children can explore different materials for construction. They can join materials using glue. They use different materials to make a structure.</p> <p><u>Textiles</u> Children can choose suitable materials for a textured effect. They can join materials using glue.</p> <p><u>Food</u></p>	<p><u>Construction</u> Children can begin to mark, cut and measure material. They use a saw to cut wood with support. They can make a structure which is strong and stable.</p> <p><u>Textiles</u> Children can use running stitch to join.</p> <p><u>Food</u> Children can sift flour. They can grate cheese. They</p>	<p><u>Construction</u> Children can measure and join materials to make a structure accurately. They can make a structure more stable by using clay.</p> <p><u>Textiles</u> Children can pin, cut and measure textiles. They can choose a textile for its aesthetic quality.</p> <p><u>Food</u> Children can knead and</p>	<p><u>Construction</u> Children can build a structure stronger than the original historical artefact. They can reinforce their structure based on their prototype. They can use a hammer with nails.</p> <p><u>Textiles</u> Children can manipulate textiles to create a pattern.</p> <p><u>Food</u> Children can use a hob to</p>	<p><u>Construction</u> Children can create curved edges on wood. They can sand a product to ensure an accurate finish. They can use a screwdriver to make a hole in wood. They can create and strengthen an insert for their product to move inside.</p> <p><u>Textiles</u> Children can embroider details to create a scene. They can use a</p>	<p><u>Construction</u> Children can use a hot glue gun safely. They can explore a range of knots to strengthen a structure. They can use a saw, drill, and hammer independently.</p> <p><u>Textiles</u> Children can embellish a product using layers of fabric. They can use cross stitch to add detail.</p>
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	<p>scissors and cutlery. They can begin to show accuracy and care when drawing. They can show an ability to follow instructions involving several ideas or actions.</p>	<p>Children cut and peel food safely. <u>Mechanisms</u> Children can make a product which moves using wheels and axels. They can make a product which moves using a slider.</p>	<p>can crack an egg. They can combine ingredients and mix thoroughly. <u>Mechanisms</u> Children can make a product which moves using a lever.</p>	<p>shape dough. They can use hot water to cook. They can recognise and implement food hygiene standards. <u>Mechanisms</u> Children can make a product that moves using a lever</p>	<p>heat food. They can use a peeler. <u>Mechanisms</u> Children can make a product that moves using a winding pulley. <u>Electronics</u> Children can create a simple series circuit with a light bulb.</p>	<p>variety of materials to patch together. <u>Food</u> Children can cook meat thoroughly. They can create pastry. <u>Mechanisms</u> Children can create a product that moves using linkages and cams. <u>Electronics</u> Children can create an</p>	<p><u>Food</u> Children can use a pestle and mortar to crush spices. They can add flavour by adding seasoning to their dish. They can cook chicken thoroughly and safely. They can use a hob to melt chocolate. <u>Mechanisms</u> Children can make a product move using gears.</p>
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						electrical circuit with more than one component. They can create a product that moves using an electric motor.	<u>Electronics</u> Children can make a product move using computer programming. They can create a parallel electrical circuit using many components.
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Evaluate	<p>Children can share their creations, explaining the process they have used.</p>	<p>Children can describe how something works. They discuss ways to solve a problem. They evaluate and suggest improvements</p>	<p>Children can take apart products to see how they are made. They can explain to other their making process. They can compare their design to their original plan. They can evaluate their work against the design criteria (checklist).</p>	<p>Children can test their product meets the design criteria. They can justify their choices using what they already know about a product.</p>	<p>Children can evaluate their work and improve as they go. They can compare current modern products to the original historical product. They can discuss changes for future designs.</p>	<p>Children can evaluate their product against their own design criteria. They can edit their design as problems occur. They can rate products based on authenticity.</p>	<p>Children can prove their product meets their design specification. They can edit their product to overcome any issues during the making process. They can improve their own work based on feedback of others. They can evaluate and compare the time and cost effectiveness of the products.</p>
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<p style="text-align: center;">Technical Knowledge</p>	<p>Children can explain the process they have used.</p>	<p>Children can explore mechanisms using forces. They discuss where their food comes from.</p>	<p>Children can explore how to make a structure stronger and more stable. They can describe where the food comes from.</p>	<p>Children can use a mechanisms to exert force. They can describe where the ingredients have come from.</p>	<p>Children can discuss the symbols for the electrical components. They can describe how the mechanism can lift weight. They can discuss the changes in the ingredients during the cooking process.</p>	<p>Children can discuss the importance of the correct food storage. They can describe the effect of a motor on their product. They can describe how the two mechanisms link.</p>	<p>Children can explore movement using a computer program. They can explain how the circuits are causing the different components to move. They can explain why chicken needs to be cooked and stored properly.</p>
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