



Leamington Hastings C of E Academy

Design and Technology / Expressive Arts and Design curriculum progression



At Leamington Hastings Academy our aim is to deliver a Design Technology curriculum that engages and challenges every child to engineer, experiment and innovate. Through a wide range of opportunities, children are encouraged to develop the basic skills and understanding to enable them to apply their knowledge to design and create useful and functional products for a purpose. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Children will develop creative and critical thinking, both of their own and their peer's work. With encouragement to be independent and develop problem-solving skills, children will be well prepared to take part in the development of today's rapidly changing world.

Aims

Throughout curriculum children will:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently
- participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- design products for a purpose
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook

Areas taught throughout the year groups include:

Developing, planning and communicating ideas.	Working with tools, equipment, materials and components.	Evaluating processes and products.	Food and nutrition.
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	Nursery Rising 3s	Nursery Pre-School	Reception	Year 1	Year 2
Developing, planning and communicating ideas.	Imitates everyday actions and events from their own family/cultural background when using a range of construction	Constructs with a purpose in mind e.g. uses paper and tape to make a bag in play.	Explains what they are making with a purpose in mind, and suggests what materials they are going to use.	Begin to draw on their own experiences and research conducted to help generate ideas.	Draw on their own experiences and research conducted to help generate ideas.







<p>KS1 – Cycle A- Autumn 2, Uncovering the Uk – Christmas Treats, Spring 1, Our Bodies – levers and sliders (card). Summer 1, Our School – building bridges Cycle B, Autumn 2, where in the world, Christmas decorations Spring 1, Explorations – making a healthy dish, Summer 1, On our doorstep – axels and wheels.</p>	materials / objects in the environment.				
	<p>Use a range of tools and construction materials in the environment, developing their ideas about how to use them and what to make, with a large range of items freely available in continuous provision e.g. scissors, hole punches, hammers, string, tape, masking tape, glue, boxes, tissue paper, paint, sequins, feathers, pipe cleaners, paper clips, fasteners, straws, felt, beads, large paper, long strips of wallpaper, natural materials from outside etc.</p>		Use what they have learnt about media and materials in original ways, thinking about uses and purposes.	Begin to understand the development of existing products; what they are for, how they work, the materials used.	Begin to develop their design ideas through discussion, observation, drawing and modelling.
			Select and name the tools needed to work the materials e.g. scissors for paper, hammer for nails.	Start to suggest ideas and explain what they are going to do.	Identify a purpose for what they intend to design and make.
			Explore ideas by rearranging materials.	Understand how to identify a target group for what they intend to design and make based on a basic criteria.	Understand how to identify a target group for what they intend to design and make based on a design criteria.
			Discuss their work as it progresses.	Begin to develop their ideas through talk and drawings.	Develop their ideas through talk and drawings, and label parts and materials.
				Make templates and mock ups of their ideas on paper or using IT.	Make templates and mock ups of their ideas in card and paper or using ICT.
<p>Working with tools, equipment, materials and components / being imaginative and expressive</p>	<p>Explore a range of mechanical equipment in play e.g. cogs, wind up toys and toys with pulleys.</p>	<p>To verbalise intentions prior to construction using a wide range of materials freely available in play.</p>	<p>To verbalise intentions, making an object for a purpose.</p>	<p>Begin to make their design using appropriate techniques – cut, fold, stick, scrunch, bend, sew, glue, fringe, curl, link, fasten, hole punch, staple etc.</p>	<p>Begin to select tools and materials to apply knowledge of techniques with increasing control, using the correct vocabulary to name and describe them.</p>

<p>KS1 – Cycle A- Autumn 2, Uncovering the Uk – Christmas Treats, Spring 1, Our Bodies – levers and sliders (card). Summer 1, Our School – building bridges</p> <p>Cycle B, Autumn 2, where in the world, Christmas decorations</p> <p>Spring 1, Explorations – making a healthy dish, Summer 1, On our doorstep – axels and wheels</p>	<p>To build structures with blocks, clay, wood and card, making simple models that express their ideas.</p>	<p>To handle tools, objects, construction and malleable materials safely.</p>	<p>Create their design using basic techniques of sticking, folding, scrunching and bending.</p>	<p>Begin to build structures exploring how they can be made stronger.</p>	<p>Build structures, exploring how they can be made more stable.</p>
	<p>Develop manipulation and control by making toys work by pressing buttons of lifting flaps to achieve effects, such as sound and movements.</p>	<p>To select tools and techniques needed to shape, assemble and join materials they are using in play.</p>	<p>Use different techniques for joining materials e.g. explores how to use different types of tapes or glues.</p>	<p>Explore and use mechanisms (levers, slider, wheels and axels) in their products.</p>	
	<p>To use one handed tools and equipment e.g. makes snips in paper.</p>	<p>Begin to use scissors to cut straight and curved edges.</p>	<p>Use scissors to cut straight and curved edges.</p>	<p>Measure out, cut, join and shape a range of materials.</p>	<p>Measure out, cut , join and shape a range of materials with increasing accuracy.</p>
	<p>To explore natural materials inside and outside, representing their ideas and interests.</p>	<p>To understand that different media can be combined to create new effects.</p>	<p>Children safely use and explore a variety of materials, tools and techniques with colour, design, texture, form and function.</p>	<p>Assemble, join and combine materials and components together using different methods (gluing, taping, clipping, tying and pinning including split pins).</p>	<p>Assemble, join and combine materials and components together using different methods with increasing accuracy (gluing, taping, clipping, tying and pinning including split pins).</p>
	<p>Thread large beads onto a string.</p>		<p>Thread small beads onto a thin piece of thread.</p>	<p>Demonstrate how to cut, shape and join fabric to make a simple product. (forwards stitch)</p>	<p>Demonstrate how to cut, shape and join fabric to make a simple product. (running stitch)</p>
<p>Evaluating processes and products.</p> <p>KS1 – Cycle A- Autumn 2, Uncovering the Uk – Christmas Treats,</p>	<p>Demonstrates pride in their creations.</p>	<p>To say what has worked well with their constructions.</p>	<p>Say what they like and do not like about items they have made and attempt to say why.</p>	<p>To talk about their ideas, saying what they like and dislike about them, giving reasons for these opinions.</p>	<p>With confidence talk about the strengths and weakness of their ideas linking their reasons for these opinions to the design criteria.</p>
			<p>Begin to talk about their designs as they develop</p>	<p>Begin to evaluate their products as they are</p>	<p>To evaluate their products as they are developed,</p>

<p>Spring 1, Our Bodies – levers and sliders (card). Summer 1, Our School – building bridges Cycle B, Autumn 2, where in the world, Christmas decorations Spring 1, Explorations – making a healthy dish, Summer 1, On our doorstep – axels and wheels</p>			and identify good and bad points.	developed, identifying strengths and possible changes they might make.	identifying strengths and begin to make changes as appropriate.
			Start to talk about changes made during the making process.		
			Discuss how closely their finished products meet their design criteria.	Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria).	Evaluate their work against their design criteria.
			Share processes used to create their product.	When looking at existing products explain what they like and dislike about products and why.	Look at a range of existing products explain what they like and dislike about products and why.
<p>Food and Nutrition</p> <p>KS1 – Cycle A, Autumn 2 – Uncovering the UK. Christmas treats.</p> <p>Cycle B, Spring 1 – Explorations! Making a healthy dish.</p>	With support, explore familiar food products – fruit and vegetables. Taste, touch and smell.		Explore familiar food products – fruit and vegetables. Taste, touch, smell and observe similarities and differences.		
	Stir, spread, knead and shape a range of food and ingredients with support.		Stir, spread, knead and shape a range of food and ingredients.		
	With support wash and dry hands.	Manages hand washing independently.	Begin to practise some hygiene measure to keep healthy and safe – thorough hand washing and wiping of surfaces.	Observe basic food hygiene procedures – washing hands, cleaning surfaces and washing fruit/veg before preparing/cooking.	Observe basic food hygiene procedures – washing hands, cleaning surfaces and washing fruit/veg before preparing/cooking. Begin to understand the importance of keeping meat separate.

	Sort familiar foods with support as needed e.g. these are all fruits.		Start to think about the need for a variety of foods in a diet. Sort food items into health and unhealthy foods.	Start to understand the concept of 'The Eat well plate' and sort basic foods into food groups.	Understand how to name and sort a range of foods into the five groups in 'The Eat well plate' and that it is recommended that 5 portions of fruits and vegetables are eaten daily.
			Begin to understand that eating well contributes to good health.		
			Begin to understand that all food comes from plants or animals.	Know that all food comes from plants or animals.	Know that all food comes from plants or animals and has to be reared, grown or caught.
	Begin to notice that some food is grown and take part in class growing activities.		Begin to understand that food has to be farmed, grown or caught.	Know that food has to be farmed, grown or caught.	Know that food has to be reared or grown (in the UK or in other countries) or caught.
	With support, prepare dishes safely and hygienically without a heat source.			Prepare dishes safely and hygienically without a heat source.	
	With support, prepare dishes safely and hygienically involving a heat source.			Prepare dishes safely and hygienically involving a heat source.	

Technical knowledge (Assessed strands)	Year R	KS1
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<p>Mechanisms</p>	<p>Frequent opportunities to cut card and paper with accuracy and skill</p> <p>Simple Flap Join Fold thin card in half and join one half to a model/structure or card</p>  <p>Bench fold Fold the card in half, draw two straight lines and then cut the lines and push the box through</p>  <p>Wheels Investigate fixed axles and rotating wheels on toy cars</p>	<p>Opportunities to practise different joining techniques before completing final piece</p> <p>Hinge Joins Simple hinge using paper or masking tape</p>  <p>Simple Slider</p> <p>Fold paper in half. Make a slider by folding paper. Slide through the two slots cut earlier. 3 key stages:</p> <ol style="list-style-type: none"> 1. Tube of paper that a slider moves up/down inside 2. Slider through a bar fixed to the back of card 3. Add extra bar so that the slider moves vertically <p>NB ensure slider is long enough to reveal picture</p> <p>Pivot Use of split pins. Teach how to make a hole for pin with a pencil into blu-tac</p> <p>Levers with linkage</p>  <p>Once children are confident making a simple lever and pivot, they can start to create movement using several levers attached to a linkage system.</p>	<p>Fixed axle with accurate joining</p> <p>Rotating axle with fixed wheels</p>  <p>Axle held in place by a straw.</p>  <p>Axle holder made with pegs. Axle holder using cardboard triangles</p>
<p>Structure</p>	<p>Junk modelling- selecting objects for a purpose Experiment with joining – choosing materials for a purpose Opportunities to select best joining materials: Tape- joining boxes PVA- collage/flaps Pritt- joining paper</p>	<p>Testing structures for stability Marshmallows and spaghetti pier structures Experimenting with the most stable shape Adapting designs as the structures are built</p>	<p>Joining sheet material Flute joins to aid stability Adding detail to models using a variety of reclaimed materials(paper, card etc) focusing on stability Accuracy of cutting/finishing</p>

Throughout Early Years and Key Stage 1 children should have exposure to the following skills;

Skills	Paper, card and fabric	Clay and play dough	Construction	Food
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Cutting	<p>Following a direction Cut to a point and stop Cut a straight line Cut a curve Holding scissors correctly (safety)</p> <p>Saw using a backward and forward motion</p> <p>Measure from an edge Spread fingers to control a ruler Draw a straight line</p>	<p>Know how much pressure to apply to cutter</p> <p>Knife Cut away excess</p>		<p>Cutting Grating Peeling</p>
Joining	<p>Making a choice between resources such as:</p> <ul style="list-style-type: none"> • Sellotape- estimating amount needed and know when to use • Masking tape • Pva glue- know to glue around the edge. Knowing coverage, wiping and spreading • Pritt stick • Pegs • Split pins • Blue tac • Paper clips • Staples • Nails and screws(practise skill using tap tap toy) <p>Other means of joining</p> <ul style="list-style-type: none"> • Fluting • Tabs <p>Colour fabrics using a range of techniques e.g. fabric paints, printing, painting Cut out shapes which have been created by drawing round a template onto the fabric Join fabrics by using running stitch, glue, staples, over sewing, tape Decorate fabrics with buttons, beads, sequins, braids, ribbons</p>		<p>Overlapping bricks to strengthen a join Using a base</p>	<p>Mixing</p>
Shaping and Finishing	<p>Estimating: big or small pieces</p> <p>Stencil Curling Fan Fold (edges meeting, pressing down) Rolling Concertina Nets (visualising the shape) Tabs Making a relevant choice Accuracy of measuring Purpose Choice for media- pens, paint, printing, fabric,</p>	<p>Prepare work surface Rolling (sausage or for base) Squeezing (making a fist) Kneading Squashing Twisting Pinching Pressure (how much, to cut through or mark the clay) Pulling Keeping the shape Templates</p>	<p>Adding detail to construction kits</p>	<p>Kneading Rolling Squeezing</p>

	paper, glue etc Design, draft, make , evaluate, make adjustments			
Threading	Threading beads onto laces Thread laces through punched card Thread cotton through the eye of the needle Loop thread and tie knot securely			

