

## Long Term Plan: Product Design



ElmsBank

Key to Pathways:

Inspire	Explore	Nurture	Thrive	Specialist Provision	College
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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Inspire Pathway</b>						
Year 7	<p><b><u>Personalised Jigsaw</u></b> Intro to workshop/Health and Safety, Basic tool use and thermoforming (vacuum former)</p>	<p><b><u>Mask</u></b> Based on a character being studied in a book in pupil's English lessons (EG Shakespeare play)</p>	<p><b><u>Toy Car</u></b> Developing tool use, disc sander, stain and varnish, cams and followers, motion, drawing and rendering</p>		<p><b><u>Smart Material Thermometer</u></b> Smart materials, thermoforming (strip heater), Prototyping and evaluating existing products.</p>	<p><b><u>Textiles Bag</u></b> Introduction to basic skills and use of sewing machine</p>
Year 8	<p><b><u>Photo Frame</u></b> Based on design movements of 20<sup>th</sup> century, such as Memphis. Use of mixed materials and assembly with adhesives/CADCAM</p>	<p><b><u>Celebration cards</u></b> Pop up Seasonal greetings cards using mechanisms</p>	<p><b><u>Buzzit Bedroom Door bell</u></b> Basic electronics, thermoforming techniques, design for a small child/safety</p>	<p><b><u>Structures and Motion</u></b> Explore and experiment with levers, mechanisms and mechanical advantage</p>	<p><b><u>Desk tidy</u></b> Designing for other people's needs, defining the design criteria (EG sizes of pens, rubbers etc) wit associated applied numeracy (digital calliper introduction)</p>	<p><b><u>Nightlight</u></b> Basic tool use, structures, intro to 2D design and the laser cutter, simple electronics, jigs and templates</p>

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Year 9	<p><b>Modern Art Clock</b> Increasing use of independent CAD/CAM skills Mixed materials and semi-permanent joining methods</p>	<p><b>Litter pickers</b> Caring for the environment Joining methods and applied engineering in a mechanism</p>	<p><b>Pewter Casting</b> Metal casting a piece of jewellery or a keyring, types of metals (alloys, ferrous and nonferrous)</p>	<p><b>Laminating plywood</b> Using composite layers to create shapes for a product of pupils' choice.</p>	<p><b>User centred Design Project</b> Modify a pen/spoon to be easier to use for someone with limited hand mobility (Use clay as prototype and then polymorph as the final product)</p>	<p><b>Concrete speaker</b> Using composite materials, moulding and soldering an amplifier circuit for use with an MP3 player or smart phone.</p>	
Year 10	<p><b>Sweet machine</b> Mastering hand tools and thermoforming with vacuum former and strip heater. Reappropriating jars for reuse (the 6 r's)</p> <p><b>Theory input</b> for those pupils identified as being able to take GCSE Design Technology</p>		<p><b>DVD or Xbox game rack</b> Working with CAD/CAM, threaded bar and aluminium tube, basic engineering principles and permanent/semi-permanent joining methods</p> <p><b>Theory input</b> for those pupils identified as being able to take GCSE Design Technology</p>		<p><b>Earphone wrap</b> Measuring and prototyping/iterative design to refine until a product is 'right'</p> <p><b>Theory input</b> for those pupils identified as being able to take GCSE Design Technology</p>		<p><b>GCSE CAT Prep Or NCFE V Cert prep Level ½ in y11</b></p>
Year 11	<p><b>GCSE CA Design Technology</b> Pupils work on their own project based on the topics provided by exam board</p> <p><b>NCFE V Cert Creative Craft</b> Pupils work on a jewellery box project to secure level 1 or level 2</p> <p><b>Theory and Exam practice input</b> for those pupils identified as being able to take GCSE Design Technology</p>					<p><b>Final Exam prep for GCSE pupils</b></p>	

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Explore Pathway</b>						
Year 7	<p><b><u>Personalised Jigsaw</u></b> Intro to workshop/Health and Safety, Basic tool use and thermoforming (vacuum former)</p>	<p><b><u>Mask</u></b> Based on a character being studied in a book in pupil's English lessons (EG Shakespeare play)</p>	<p><b><u>Toy Car</u></b> Developing tool use, disc sander, stain and varnish, cams and followers, motion, drawing and rendering</p>		<p><b><u>Smart Material Thermometer</u></b> Smart materials, thermoforming (strip heater), Prototyping and evaluating existing products.</p>	<p><b><u>Textiles Bag</u></b> Introduction to basic skills and use of sewing machine</p>
Year 8	<p><b><u>Photo Frame</u></b> Based on design movements of 20<sup>th</sup> century, such as Memphis. Use of mixed materials and assembly with adhesives/CADCAM</p>	<p><b><u>Celebration cards</u></b> Pop up Seasonal greetings cards using mechanisms</p>	<p><b><u>Buzzit Bedroom Door bell</u></b> Basic electronics, thermoforming techniques, design for a small child/safety</p>	<p><b><u>Structures and Motion</u></b> Explore and experiment with levers, mechanisms and mechanical advantage</p>	<p><b><u>Desk tidy</u></b> Designing for other people's needs, defining the design criteria (EG sizes of pens, rubbers etc) wit associated applied numeracy (digital calliper introduction)</p>	<p><b><u>Nightlight</u></b> Basic tool use, structures, intro to 2D design and the laser cutter, simple electronics, jigs and templates</p>
Year 9	<p><b><u>Modern Art Clock</u></b> Increasing use of independent CADCAM skills Mixed materials and semi-permanent joining methods</p>	<p><b><u>Litter pickers</u></b> Caring for the environment Joining methods and applied engineering in a mechanism</p>	<p><b><u>Pewter Casting</u></b> Metal casting a piece of jewellery or a keyring, types of metals (alloys, ferrous and nonferrous)</p>	<p><b><u>Laminating plywood</u></b> Using composite layers to create shapes for a product of pupils' choice.</p>	<p><b><u>User centred Design Project</u></b> Modify a pen/spoon to be easier to use for someone with limited hand mobility (Use clay as prototype and then polymorph as the final product)</p>	<p><b><u>Concrete speaker</u></b> Using composite materials, moulding and soldering an amplifier circuit for use with an MP3 player of smart phone.</p>

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Year 10	<p><b><u>NCFE V Cert Creative Craft</u></b></p> <ul style="list-style-type: none"> <li>- <b><u>Sweet machine</u></b> Mastering hand tools and thermoforming with vacuum former and strip heater. Reappropriating jars for reuse (the 6 r's)</li> </ul> <p><b><u>AQA Unit Award in Thermoforming Plastics</u></b></p> <ul style="list-style-type: none"> <li>- <b><u>Photo Frame</u></b> Developing CAD/CAM skills and hand wasting and finishing of acrylic</li> </ul>	<p><b><u>NCFE V Cert Creative Craft</u></b></p> <ul style="list-style-type: none"> <li>- <b><u>DVD or Xbox game rack</u></b> Working with CAD/CAM, threaded bar and aluminium tube, basic engineering principles and permanent/semi-permanent joining methods</li> </ul> <p><b><u>AQA Unit Award in Thermoforming Plastics</u></b></p> <ul style="list-style-type: none"> <li>- <b><u>Woodworking skills</u></b> Developing hand tool skills and sound Health and Safety in the workshop</li> </ul>
Year 11	<p><b><u>NCFE V Cert Creative Craft</u></b></p> <ul style="list-style-type: none"> <li>- <b><u>Earphone wrap</u></b> Measuring and prototyping/iterative design to refine until a product is 'right'</li> </ul> <p><b><u>WJEC Entry Pathways Level 2</u></b></p> <ul style="list-style-type: none"> <li>- <b><u>useful storage unit to secure Level 2</u></b></li> </ul>	<p><b><u>NCFE V Cert Creative Craft</u></b></p> <p>Pupils work on a jewellery box project to secure level 1 or level 2</p> <p><b><u>WJEC Entry Pathways Level 2</u></b></p> <ul style="list-style-type: none"> <li>- <b><u>useful storage unit to secure Level 2</u></b></li> </ul>

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Specialist Provision</b>						
Year 7	<p><b><u>Decoupage Box</u></b> Cardboard nets folded and then assembled/decoupage.</p>	<p><b><u>Jigsaw</u></b> – shape can be cut by staff on the fret saw before lesson. Video of this process to be used as a resource in class</p>	<p><b><u>Mask</u></b> to key in with a book that has been read in English lessons. Laser cut shape done in card</p>	<p><b><u>Dream Catcher</u></b> Laser cut plywood ring – pupils thread cotton and wool</p>	<p><b><u>SOMA cube</u></b> Cube puzzle with package</p>	<p><b><u>Picture frame</u></b> with quilling of card and laser cut paper shapes.</p>
Year 8	<p><b><u>Model house.</u></b> Card net will be cut – pupils use templates and mark out skills to decorate it.</p>	<p><b><u>Structures and Motion</u></b> Explore and investigate motion, levers and mechanisms.</p>	<p><b><u>Bag</u></b> using textiles skills Either use sewing machines of pupils do a simple blanket stitch</p>	<p><b><u>Ball Pyramid Puzzle</u></b> with package</p>	<p><b><u>Plant Pot</u></b> African art/Chris Offili as inspiration</p>	<p><b><u>Thermometer stand</u></b> using thermochromic thermometer</p>

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Year 9	<b>Celebration cards</b> using mechanisms	<b>Tooth Brush Holder</b> using printer/ CADCAM and thermoforming with strip heater	<b>Specs project</b> Promotional specs for a chosen film release. Pupils collect images , complete cut and paste design work and then complete specs onto a pre- cut lasered template	<b>Desk Tidy</b> Measuring and working out criteria	<b>User centred Design Project</b> Modify a pen/spoon to be easier to use for someone with limited hand mobility (Use clay as prototype and then polymorph as the final product)	<b>Night Light</b> Using bought in LED lights as a source
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### Nurture Pathway

**KS3 and KS4** The Technology curriculum is tailored to reflect the ability of the group and the individual needs of the pupils. Teachers will follow the appropriate Schemes of Work, for example, pupils will follow the Inspire or Explore Schemes of Work as appropriate for their ability.

### Thrive Pathway

**KS3 and KS4** The Thrive Pathway has a bespoke curriculum which focuses on the development of pupils' communication, food preparation, food play and keeping clean. Please refer to the Thrive Long Term Plan for a full overview of themes covered.

### Specialist Provision

**KS3 and KS4** Specialist Provision has a bespoke curriculum which focuses on the development of pupils' communication and sensory needs. The curriculum is tailored to reflect the interests and ability of the group and the needs of individual pupils.  
Please refer to the SP Long Term Plan for a full overview of themes covered.  
KS3 – pupils follow the Explore or Thrive Pathway with a focus on key skills, to support the developmental needs of our pupils with ASD.  
KS4 – pupils continue to develop their skills in Technology, gaining an Entry Level qualification.

### College Pathway

**Year 12, 13, 14**

**Inspire Pathway:**  
Students do not access this subject.

**Explore Pathway:**  
KS5 – students access Creative Enterprise, as part of their programme of Open Award qualifications. Through this they may access aspects of the Product Design curriculum, in line with interests of the students.

**Thrive Pathway:**  
Students do not access this subject.

**Specialist Provision Pathway:**

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KS5 – students access Creative Enterprise, as part of their programme of Open Award qualifications. Through this they may access aspects of the Product Design curriculum, in line with interests of the students.

In the future we aim for Year 13 and 14, students to have the opportunity to work towards further qualifications, e.g. Open Award in Hospitality at Entry Level 1,2.

Students continue to develop their skills in Food Technology through the work placements we offer which focus on 'Employability'. The primary purpose of this qualification is to provide our students with the skills they need to become successful employees and to help them overcome barriers to entering the workplace.

Students will be able to spend 1 day working in the Hospitality placement, for 6mths. Students choose 2 options each year, so may not choose hospitality.