

Autumn Term 1

	Week 1-2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	HALF
Topic	Welcome back. Outline of the year. Design task.	What is design communication? Freehand sketching foundations	2D to 3D drawing	Perspective drawing	Rendering techniques and annotation	Technical drawing CAD communication	CAD communication Evaluation and assessment	
Challenge Objective and Content (for all learners)	Project introduction. Opportunity for students to draw on all KS3 knowledge CQ: What does a designer communicate? Introduction to the designer's toolkit: Isometric, perspective, exploded drawing, annotation, etc <i>Introduction to Isometric sketching</i>	Line quality, shape, proportion. Sketching drills, everyday object challenges, contour drawing CQ: How do designers communicate ideas before something exists?	<i>3D communication - Isometric sketching continued</i> CQ: Which drawing would be best for showing a product in 3D? Why? Construction lines Proportion Line weight 3D form Simple shading	1-point and 2-point perspective CQ: Why don't things look the same size when they are far away? .	Applying skills in 1pt and 2pt perspective drawing to draw light box including rendering. Colour, texture, materials CQ: How can a drawing show what a product will feel, look and be like?	Dimensions, orthographic views, accuracy Introduction to 2D design CQ: How does a designer tell someone exactly how to make something?	Digital modelling and presentation Create a CAD model and produce rendered views CQ: How can a computer help a designer communicate an idea?	
Inspire Opportunities	<i>Why might a designer use more than one type of drawing?</i>	<i>What are the social / moral/ ethical responsibilities of a designer?</i>	Can you transform a 2D shape into a convincing 3D form?	Can you use perspective to make your product look realistic?	Can you communicate your material choices and design decisions clearly enough for someone else to understand them?	Could someone manufacture your product using only your technical drawing?	How do designers know when an idea is successful?	
Assessment Opportunities	Data stickers issue- discussion around end of year 8 data/ targets for yr 9.	Self-assessment throughout activities.	Peer feedback	Self-assessment throughout activities.	Peer feedback	Self-assessment throughout activities.	Teacher assessment of work and feedback	

Autumn Term 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	CHRISTMAS
Topic	Mini NEA Project – Contemporary game design							
Challenge Objective and Content (for all learners)	Project introduction. Opportunity for students to draw on all KS3 knowledge to produce a high-quality product.(Paper/textiles/metals/timber/ Polymer) Research – exploring primary and secondary research to develop ideas. Challenge: What are the benefits of looking at existing noughts and crosses products?	Mind map – using ACCESS FM to identify the needs and opportunities of the project. Challenge: What knowledge/ ideas/ questions can you add to each of the headings?	Product Analysis – exploring primary and secondary research to develop ideas. Challenge: What are the benefits of looking at existing noughts and crosses products?	Material research – sample counter from acrylic. Challenge: Does acrylic have any properties which are suitable for a counter or board?	Material research – sample counter from timber-based materials Challenge: Does softwood or manufactured board have any properties which are suitable for a counter or board?	Material research – sample counter from felt. Challenge: Does felt have any properties which are suitable for a counter or board?	Introduction to metal clay. Challenge: what are the advantages of metal clay compared to traditional metals?	
Inspire Opportunities	What are the disadvantages of relying on secondary data only to research products?	What are the social /moral/ ethical responsibilities of a designer?	What are the disadvantages of relying on secondary data only to research products?	What are the desirable properties for your game and counters?	What are the desirable properties for your game and counters?	What are the desirable properties for your game and counters?	What is the difference between a smart and modern material?	
Assessment Opportunities	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	

Spring Term 1

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	I
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Challenge Objective and Content (for all learners)	Manufacturing final product. Creating the board. <i>Challenge: What quality checks will you make to ensure your product is finished to a high standard?</i>	Manufacturing final product. Creating the board. <i>Challenge: What quality checks will you make to ensure your product is finished to a high standard?</i>	Manufacturing final product. Creating the counters. Access to a range of materials and CAD/ CAM. <i>Challenge: What quality checks will you make to ensure your product is finished to a high standard?</i>	Manufacturing final product. Creating the board. <i>Challenge: What quality checks will you make to ensure your product is finished to a high standard?</i>	Final quality checks. Start evaluation against specification. <i>Challenge: Why is it important that your product delivers on the specification?</i>	Complete evaluation against specification. <i>Challenge: Why is it important that your product delivers on the specification?</i>	
Inspire Opportunities	What Quality Assurance strategies can you plan before starting the task?	What Quality Assurance strategies can you plan before starting the task?	What are the advantages/ disadvantages of including some CAD/ CAM into your project?	What Quality Assurance strategies can you plan before starting the task?	In industry, what is the consequence of not delivering against the specification?	What changes would you need to make to your product if it was going to be professionally manufactured/ sold in shops?	
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Summer Term 1

	Week 1	Week 2	Week 3	Week 4	Week 5	HE
Topic	Light Box	Light Box	Light Box	Light Box	Light Box	

Challenge Objective and Content (for all learners)	Introduction to Year 9. Theory – Softwood and hardwood. Properties and characteristics of natural timber Challenge: what is the advantage and disadvantages of using softwood	Start manufacture. Mark out timber for light box. Challenge: <i>Why is it important for your pieces to be the correct lengths and be sanded accurately?</i>	Manufacture. Cut timber and sand to correct length. Assemble box Challenge: <i>Why is important that your pieces are accurate?</i>	Manufacture. Cut timber and sand to correct length. Assemble box. Challenge: <i>How will you ensure your timber pieces are the correct length?</i>	Manufacture. Practical demonstration: making dowel joints using a jig Theory –uses and function of dowel joints. Challenge: why is a jig useful?	
Inspire Opportunities	<i>How does the choice of timber-based materials effect the price, aesthetic and function of a product?</i>	<i>What is the impact to a company when accuracy is poor?</i>	<i>Can you identify quality control and quality assurance measures or simple techniques which will make your box precise?</i>	<i>How will you consider the grain when arranging the timber ready to assemble your box?</i>	<i>What other methods of reinforcement could be used to strengthen the box?</i>	
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Summer Term 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	SUMMER
Topic	Light Box	Light Box	Light Box	Light Box	Light Box	Light Box	EVALUATION AND ASSESSMENT- FINISHING PROJECT	
Challenge Objective and Content (for all learners)	Manufacture: dowel joints. Challenge: What will happen if the holes for the dowels are in the wrong place?	Manufacture: Measuring acrylic for light box and sawing to shape. Polymer Theory. Properties and characteristics, Challenge: What can we do to make sure our acrylic doesn't split/ shatter when sawing?	Manufacture: completing acrylic square for light box. Demonstration and completion of drilling holes to attach the acrylic Challenge: What can we do to make sure our acrylic doesn't split/ shatter when sawing?	Manufacture: Measuring acrylic for light box and sawing to shape. Polymer Theory. Properties and characteristics, Challenge: What can we do to make sure our acrylic doesn't split/ shatter when sawing?	Manufacture: completing acrylic square for light box. Demonstration and completion of drilling holes to attach the acrylic Challenge: What can we do to make sure our acrylic doesn't split/ shatter when sawing?	Manufacture: completing acrylic square for light box. Demonstration and completion of drilling holes to attach the acrylic Challenge: What can we do to make sure our acrylic doesn't split/ shatter when sawing?	Manufacture -introduction to finishes. Paint stain/ wax/ oil. Challenge: What are the benefits of using a finish on your light box?	
Inspire Opportunities	What are the benefits of using a jig in commercial manufacture.	What properties do the materials have which make it suitable for this project?	What properties do the materials have which make it suitable for this project?	What properties do the materials have which make it suitable for this project?	What properties do the materials have which make it suitable for this project?	What properties do the materials have which make it suitable for this project?	What are the implications of using a finish in industry?	
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