

Manufacturing Processes and Techniques : Prototyping

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities & Criteria. Teacher Feedback point (TFP)	Homework
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">September to October Half Term</p>	<ol style="list-style-type: none"> 1. How can materials and processes be used to make iterative models? 2. How can materials be manipulated and joined in different ways in a workshop environment when making final prototypes 3. How do designers and manufacturers ensure accuracy when making prototypes and products? 	<ol style="list-style-type: none"> 1. What materials are commonly used by professionals when making models? 2. How can modelling materials be cut to size? 3. How can modelling materials be manipulated? 4. What adhesives can be used to join similar and dissimilar modelling materials? 5. What is the difference between a model and a prototype? 6. What is meant by rapid prototyping? 7. How do you use image creation and manipulation software to communicate your ideas? 8. What methods of digital manufacturing do professionals use when making modelling and prototyping? 9. What is CAD, CAM and CAE? 10. Why is the study of anthropometrics and ergonomics important when modelling and prototyping? 		

Manufacturing Processes and Techniques : Memphis Clock

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities & Criteria. Teacher Feedback point (TFP)	Homework
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">October Half Term to Christmas</p>	<ol style="list-style-type: none"> 1. How can plastics be shaped and formed? 2. How can similar and dis-similar materials be joined permanently and semi-permanently? 3. How can CAD CAM be used to achieve high quality outcomes? 	<ol style="list-style-type: none"> 1. What adhesives are used to permanently join acrylic to acrylic? 2. How do you mark out for drilling on acrylic? 3. How do you set up and use a pillar drill to correctly drill through holes in acrylic? 4. How do you cut a thread into a hole using a tap? 5. How do you mark out, shape and polish acrylic? 6. How do you line bend plastic using a strip heater? 7. How do you free form acrylic whilst trying to retain previously formed angles? 8. What tools are used to cut through aluminium and other metals? 9. How do you cross file, draw file and chamfer? 10. How do you cut a thread using a dye? 11. How do you polish metal using the polishing mop? 12. What is Memphis design? 13. How can 2d design be used to design and then manufacture a clock face? 14. How is a pre manufactured component (clock mechanism) attached to a clock face of your design? 		

Manufacturing Processes and Techniques : Design Communication

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities & Criteria. Teacher Feedback point (TFP)	Homework
<p>Christmas to February Half Term</p>	<ul style="list-style-type: none"> • How are design solutions communicated to demonstrate their suitability? • How is CAD used to communicate design intentions? • What forms of graphical communication diagrams can be used to communicate manufacturing processes 	<ul style="list-style-type: none"> • What is the difference between 2d and 3d sketching? • What is meant by the word perspective? • What is a vanishing point? • What is oblique? • What is isometric? • What is thick and thin line technique and how can it enhance a drawing? • What is single and two point perspective? • How are technical drawing board used correctly? • What geometry equipment is used when developing technical styled drawings? • What are circles and ellipses? • What is an orthographic drawing? • What is an exploded drawing? • What is a flowchart and how can they be designed to achieve quality control? • What is an open loop and closed loop system? • What 2d and 3d CAD software is available and how can it be used to communicate ideas? 		