

Programmes of study for Design Technology Yr8 rotation

Learning summary of each lesson	
Lesson 1	<p>Introduction to the project Pewter Medal and ribbon. Explanation of basic principles of Design Technology. How to show shape and form using shading techniques Pupils will complete a worksheet about shape and form in design technology.</p>
Lesson 2	<p>Research and materials in design technology. Pupils will investigate the difference between ferrous metal and non – ferrous metal. Pupils to complete questions in book related to properties of metals and explore the environmental impact of metals</p>
Lesson 3	<p>Research and materials in design technology Pupils will investigate:</p> <ul style="list-style-type: none"> • the difference between natural and synthetic textiles • the production of textiles • sewing techniques
Lesson 4	<p>Design brief and Initial ideas. What is a design brief and why do we use them in design technology? Discuss the correct method of producing initial ideas:</p> <ul style="list-style-type: none"> • 3D sketches • Colour • Annotation <p>Pupils to complete 2 initial ideas with accompanying annotation.</p>
Lesson 5	<p>Modelling in Technology / using CAD/CAM Why do we use models in Technology? The role of computer modelling and testing. How will CAD/CAM be used to produce the pewter medal Pupils will produce a card model at 1:1 scale of their design.</p>
Lesson 6	<p>Practical Lesson–Working with Textiles Materials distributed to pupils. Teacher demo on the correct way to mark and measure the material</p> <ul style="list-style-type: none"> • Use of rulers – using mm • Using needles and thread <p>Different ways to cut textiles Pupils to proceed with practical, show awareness of Health and Safety and follow the rules of the workshop</p>
Lesson 7	<p>Practical lesson. Continuation of practical lessons. Recap important Health and Safety issues from last lesson and discuss good examples of work.</p>
Lesson 8	<p>Practical Lesson- Cutting tools and techniques. Teacher demo on the correct way to use cutting and shaping tools such as saws, drills and files.</p> <ul style="list-style-type: none"> • Correct techniques – how to begin a cut, sawing in a straight line, where to place hands • Common mistakes – using the tool incorrectly, using the wrong tool for the job • Correct methods of drilling – stepping up, work piece holding using hand vices and using correct technical terms. <p>Pupils to proceed with practical, show awareness of Health and Safety and follow the rules of the workshop.</p>
Lesson 9	<p>Practical lesson – CAD/CAM Demo the pewter casting hearth and CAD router machine. Reinforce health and safety rules when using the machines. Pupils to use both machines to produce a mould and cast a letter from pewter.</p> <ul style="list-style-type: none"> • Follow correct procedure

	<ul style="list-style-type: none"> • Be aware of specific safety rules when using the machines • Be able to apply basic quality control checks after both processes are finished
Lesson 10	<p>Practical lesson –Cleaning the materials/ Adding a finish</p> <p>Pupils will clean up their materials using sandpaper, wire wool and metal polish. Discussion about finishes :</p> <ul style="list-style-type: none"> • Why are they used • Different types for different materials <p>Pupils will be shown how to apply a clear polyurethane finish to seal in their material once it is completed</p> <p>Pupils to proceed with practical, show awareness of Health and Safety and follow the rules of the workshop.</p>
Lesson 11	<p>Practical – Final assembly</p> <p>Final assembly lesson for all aspects of the project to be completed.</p> <p>Reminder about Quality Control – Modifications that may have occurred need to be noted and justified if they have deviated from the design brief.</p>
Lesson 12	<p>Evaluation</p> <p>Review the project with the pupils. Class discussion with all the completed projects on view.</p> <p>Good examples and why. What improvements could others have made?</p> <p>All pupils to complete an evaluation work sheet to review their product and their own performance during the rotation.</p>
Lesson 13	<p>Mechanisms – Cam display project</p> <p>Pupils will be introduced to the principles of Mechanisms:</p> <ul style="list-style-type: none"> • What are mechanisms / why are they used? • Common types of mechanisms – Cams / linkages / ratchets / cranks
Lesson 14	<p>Design brief and Initial ideas – Cam display project</p> <p>What is a design brief and why do we use them in design technology?</p> <p>Discuss the correct method of producing initial ideas:</p> <ul style="list-style-type: none"> • 3D sketches • Colour • Annotation <p>Pupils to complete 2 initial ideas with accompanying annotation.</p>
Lesson 15	<p>Cams and Linkages</p> <p>Pupils will be introduced to specific cams / profiles and followers:</p> <ul style="list-style-type: none"> • Heart shaped / eccentric / snail and swash cams
Lesson 16	<p>Modelling in Technology / using CAD/CAM</p> <p>Why do we use models in Technology?</p> <p>The role of computer modelling and testing.</p> <p>How will CAD/CAM be used to produce the Cam display project</p> <p>Introducing the Cad Cam plotter for developing prototypes</p>
Lesson 17	<p>Practical lesson</p> <p>Pupils will work towards practical realisation of their design ideas.</p>
Lesson 18	<p>Practical lesson</p> <p>Pupils will work towards practical realisation of their design ideas.</p>

Lesson 19

Practical lesson

Pupils will work towards practical realisation of their design ideas.

Lesson 20

Evaluation

Review the project with the pupils. Class discussion with all the completed projects on view.

Good examples and why. What improvements could others have made?

All pupils to complete an evaluation work sheet to review their product.

QUESTIONING on Metals and Alloys

Yr8 Term 1

Level:	Examples of Questions:
Knowledge	<ul style="list-style-type: none">✓ Identify 3 common dangers when using a hearth✓ Label the pictures of commonly used tools in the workshop✓ Complete the worksheet on metals✓ Name the different classifications of metals
Comprehension	<ul style="list-style-type: none">✓ How could you prevent the risks of these dangers when using a hearth?✓ Why is it important to use the correct tools?✓ Explain the importance of using correct metals for particular jobs.✓ Explain the difference between ferrous, nonferrous and alloys. How are alloys made?
Analysis	<ul style="list-style-type: none">✓ Analyse your product and explain the metals you have used and why✓ Analyse the different metals in your home and explain if they have been chosen for corrosion resistance / strength / workability.
Synthesis	<ul style="list-style-type: none">✓ Generate 3 different ideas for improving your product based on your design brief✓ Design a product that adequately reflects the fonts theme
Evaluation	<ul style="list-style-type: none">✓ Use your design brief to evaluate the strengths and weaknesses in the products you have made. Discuss improvements you would make to the product.
Application	Design and make a relevant product, with a suitable font using appropriate tools, techniques and processes.