

Subject: D&T

Year Group: Year 10

Students in Year 10 are manufacturing a candle holder from aluminium and steel. They will use a variety of techniques. On occasions, it will be necessary to work on a variety of processes simultaneously. For this reason, some weeks will appear to have more taught content than others.

If students are unable to complete practical tasks, it would be beneficial for them to invest time developing their CAD skills. See links for download instructions for 2D Design and Fusion 360

2D Design student version can be downloaded free from here for Windows use.

https://eggbuckland.sharepoint.com/:u/g/Technology/EfqYOIKo9a5Ar_PdpLhGSMoBQJNZAQGP3et-tpBmMFxgRA?e=ddm2F5

Having downloaded it, please use these instructions to install the licence file. <https://eggbuckland.sharepoint.com/:w/g/Technology/EaWHwrU2MZCoRj3NKWMx8sBiLroJC8KqQ8bg7XYQd6eww?e=rGalur>

This should give access to all functionality apart from printing. Work can be saved and printed in College or recorded via a screen shot and printed from Word or similar.

Fusion 360

https://eggbuckland.sharepoint.com/:b/g/Technology/EVvJqmi_stdlhcAF6PenpTsBZLgxJZRsT13MlaLr7Ulumw?e=TMVqMI

Week Beginning	Subject Topic	Key Learning points/big questions	Independent/Home learning	Linked Assessment	Key Vocab	Resources
Week 1	Casting	What is a casting? How is a casting created? What type of item is cast? What is aluminium?	Investigate cast items found in the home. Usually these will have larger pieces of shaped metal	End of unit assessment Low stakes test	[Sand] Casting Foundry Aluminium Alloy	Files https://eggbuckland.sharepoint.com/:f/g/Technology/EoEB

			Explain why casting was an appropriate process to use in their manufacture.		Cope Drag Taper / Draft Flask Gate Pattern Mould Runner / riser Shrinkage Crucible	h3wf3uxHhR7k OnNh2cgBkw8 p034Xer2WNG gNxxE2yQ?e=1 hZPx0
Week 2	Steel disc Steel upright	What is steel? Ferrous / nonferrous What is the difference between a cast item and a fabricated sheet item? How is steel worked?	Find examples of fabricated products. Explain how metals have been cut / shaped / joined	End of unit assessment Low stakes test	Steel Ferrous / non ferrous Engineer's blue Scriber Sheet material Centre punch Dividers Notcher Vice Tin snips File Emery cloth Pillar drill Machine vice Engineers square Hacksaw	Focus Education Software Focus on Metals: Manufacturing Processes - Focus eLearning by Focus Educational Software ltd.
Week 3	Spot welding Facing off	How is sheet metal (steel) joined? Electrical resistance What is welding? What does it mean to face off?	Find a picture of a centre late used for metal. Label the parts	End of unit assessment Low stakes test	Spot weld Fuse [together] Resistance Centre lathe Parting off Tube [section] Chuck Chuck key	

Week 4	Brazing Thread cutting	What is brazing? What is the difference between brazing and welding? Why would you cut a thread in metal?	Investigate and explain with sketches / photos / notes the commercial thread cutting process	End of unit assessment Low stakes test	Brazing Brass Flux Oxidise Tap Tap wrench Cutting paste	
Week 5	Dip coating Assembly	Why would you dip coat? What material is used for the coating? What properties make this material suitable? Thermoforming / thermosetting plastics	Create an information sheet showing finishes for metal. Include information on: Dip coating, galvanising, paint, electroplating	End of unit assessment Low stakes test	Dip coating Thermo plastic Polythene	
Week 6	Record of manufacture End of unit assessment	Why is it important to reflect on what we have made?		End of unit assessment Low stakes test		

In the event of a full or partial closure of the year group, it will not be possible to teach all aspects of this course. Flexibility will need to be exercised by teachers and some lessons will be moved around.