Year 12 D&T Curriculum Summary

YEAR GROUP: 12 **SUBJECT: Product design**

When?	Key Questions	Teaching/Learning methods	Assessment
		Lessons are broken down into 8 minute sections subliminally (maximum attention span of young adolescents). As this is a practical based lesson with new skills being acquired and then further developed, demonstrations are kept minimal to maintain effectiveness. After 8 minutes pupils are refocused using questioning or another demonstration. Plenaries are used at the end of the lesson to tie up loose ends and embed the learning of the lesson. The aim of the year 12 Design and technology curriculum is to introduce the pupils to as many different materials processes as possible and introduce the concept of mapping and logging their ideas and work so that they are familiar with this so that in year 13 they can integrate these skills into their NEA portfolio. Demonstrations on and including Health and safety and usage of PPE : • Using the hegner saw • Bending plastic • Drilling plastic • Polishing plastic • Using the vinyl cutter • Joining plastics • Creating jigs	
	Egg cup batch production: • testing and prototypes • designing for manufacturing and project management • templates and jigs • scales of industrial production • characteristics of materials	Demonstrations on and including Health and safety and usage of PPE : • Marking out using a plan • Fly-cutting with the milling machine. • Bending of metals; hot and cold.	The pupils are assessed using the following mediums: • Higher order questioning • Peer discussion • Self-assessment • Peer assessment • Practical outcomes • Quality of portfolio work

When?	Key Questions	Teaching/Learning methods	Assessment
		• Facing off • Centre drilling • Using a tap and die. • Using metal punches.	(grading and marking based on attainment and effort) • Engagement in the lesson • End of module grading • Homework tasks Engagement and ability to work with others effectively and develop.
	<u>casting drill stand:</u> • forming redistribution and addition processes • machining using lathe and milling machine (wasting) • recycling • range of casting processes, hand and industrial • health and safety in the workplace and PPE.	Demonstrations on and including Health and safety and usage of PPE : • Initial modelling of products using basic materials • Testing of prototype • Importance of ergonomics and anthropometrics; finger distance and hand orientation. • Application of body filler.	The pupils are assessed using the following mediums: • Higher order questioning • Peer discussion • Self-assessment • Peer assessment • Practical outcomes • Quality of portfolio work (grading and marking based on attainment and effort) • Engagement in the lesson • End of module grading • Homework tasks Engagement and ability to work with others effectively and develop.
	<u>Designing a games controller:</u> • design influences • design teams and product testing • finishing materials • enterprise and marketing • modelling skills • protecting designs • testing and prototypes	Demonstrations on the following: • Initial modelling of products using basic materials • Testing of prototype • Drawing of design on 3D CAD • Testing of prototype 2 • Redesign of model.	The pupils are assessed using the following mediums: • Higher order questioning • Peer discussion • Self-assessment • Peer assessment • Practical outcomes • Quality of portfolio work (grading and marking based on attainment and effort) • Engagement in the lesson

Design & Technology Curriculum Summary

When?	Key Questions	Teaching/Learning methods	Assessment
	<u>3d printed mobile phone accessories:</u> • new materials. • new methods of manufacture. • technology and cultural changes. • major developments in technology. • digital design and manufacture. • National and international standards. **<u>Speaker design</u>** • Design influences. • Design styles and movements. • Designers and their work. • Product life cycle. • Electronic systems. • Characteristics of materials, selection of materials against construction materials. **<u>A load of rubbish</u>** • NEA practice • The 6 RS	Demonstrations on the following: • Acoustic properties of materials. • How to build an acoustic speaker. (key dimensions and sizes) • Wiring a circuit involving a speaker. • Manufacture of the speaker and key processes. Demonstrations on • Recycling and repurposing of old items. (deconstruction)(upcycling) • How to strip a pallet. • Finishes suitable for older wood (stains , varnishes, paints) • How to wire a plug and bulb holder safely.	• End of module grading • Homework tasks Engagement and ability to work with others effectively and develop. The pupils are assessed using the following mediums: • Higher order questioning • Peer discussion • Self-assessment • Peer assessment • Practical outcomes • Quality of portfolio work (grading and marking based on attainment and effort) • Engagement in the lesson • End of module grading • Homework tasks Engagement and ability to work with others effectively and develop. The pupils are assessed using the following mediums: • Higher order questioning • Peer discussion • Self-assessment • Peer assessment • Practical outcomes • Quality of portfolio work (grading and marking based on attainment and effort) • Engagement in the lesson • End of module grading • Homework tasks

When?	Key Questions	Teaching/Learning methods	Assessment
	• Recycle- repurpose • Identify a client • Selection of appropriate tools and processes.		Engagement and ability to work with others effectively and develop. The pupils are assessed using the following mediums: • Higher order questioning • Peer discussion • Self-assessment • Peer assessment • Practical outcomes • Quality of portfolio work (grading and marking based on attainment and effort) • Engagement in the lesson • End of module grading • Homework tasks Engagement and ability to work with others effectively and develop.