

# A Level Product Design

# Cycle 2

Week	Lesson	Topic	Task/project	Spec point	Page No.	Homework	Independent study: 5 hours per week	Assessment
1&2 UNIT 4 UNIT 9	1	Inclusive Design  1 off lesson	Innovation Challenge: adapt an existing design/product to make it more inclusive for specified user group. (plug make/do challenge)  Re-design everyday object with ergonomics for specific user group.	3.1.8 The requirements for product design and development	32	Question worksheet with specification  <b>Challenge:</b> include justifications and further specification points  <b>Further Challenge:</b> complete a product analysis of a product's inclusivity	Target user worksheets	Design skills  Creativity  Analytical and evaluation skills  Literacy & Vocabulary
	2	<b>Manufacturing Processes</b>  • Metal forming  Unit 4:Performance Characteristics of Metals  Unit 9:Processing & Working with Metals	Create a step by step diagram to explain each process with product examples. Explain the advantages and disadvantages of the process and explain why the product examples suit the process. .	3.1.4 Forming, redistribution and addition processes	18—19	Complete research and make the needed improvements.  <b>Challenge:</b> include product examples  <b>Further Challenge:</b> make comparisons and investigate properties of metals used in processes	Continuation of:  Unit 4:Performance Characteristics of Metals  Unit 9:Processing & Working with Metals	Presentation  Analytical skills  Literacy & Vocabulary
	3	Introduction to Pewter Casting project	Research design inspiration—create moodboard.  Develop a design idea	3.1.4 Forming, redistribution and addition processes	18—19		Continuation of: Unit 4 & Unit 9	Research skills  Design skills
	4	Pewter Casting Project	Create card template  2D Design CAD drawing of mould	3.1.4 Forming, redistribution and addition processes	18—19		Continuation of: Unit 4 & Unit 9	CAD skills —passport
	5	Pewter Casting Project	Complete 2D Design CAD drawing of mould  Laser cutting	3.1.4 Forming, redistribution and addition processes	18—19		Continuation of: Unit 4 & Unit 9	CAD skills  Assessment of laser cutter independence—passport
	6	Pewter Casting Project	Pewter casting  Finishes	3.1.4 Forming, redistribution and addition processes	18—19	Create manufacture diary  <b>Challenge:</b> include PPE  <b>Further Challenge:</b> technical issues & solutions	Continuation of: Unit 4 & Unit 9	Practical skills
	7	Pewter Casting Project	Finishes	3.1.4 Forming, redistribution and addition processes	18—19		Completion of: Unit 4 & Unit 9	UNIT Worksheets
	8	Papers & Boards	Mock Exam revision  Perforating; creasing; cutting; folding; bending	3.1.4 Forming, redistribution and addition processes	17			
	9	<b>Printing Processes</b>	Research into printing processes	3.15 The use of finishes	24		Printing Processes—consolidation	Research task

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3&4 UNIT 11	1	Material properties	Exploring different papers and boards—sketchbook investigation activity	3.1.2 Performance characteristics of materials: Papers and Boards	4	Complete material investigation  <b>Challenge:</b> include samples from home  <b>Further Challenge:</b> make comparisons and investigate properties of papers & boards used in processes	Revision	Material investigation— presentation and analytical skills
	2	Timber defects Working properties of pine	Videos and notes—timber seasoning Workshop investigation into timbers activity	3.1.2 Performance characteristics of materials: Woods	6 & 7		Revision	Practical skills assessment
	3	COMMAND words Timber joining methods	TEAMS quiz on definitions of command words Workshop activity—making timber joints—consolidation	3.1.2 Performance characteristics of materials: Woods	6	Photograph practical work and present outcomes in sketchbook—annotated	Revision	Peer assessment of timber joints
	4	Scales of Production	Student research and teach each other task	3.1.6 Modern industrial and commercial practice	27		Revision	Self assessed against teacher exemplar information
	5	Working properties of metals	<b>Consolidation quiz—end of Unit 4 Test</b>	3.1.2 Performance characteristics of materials: Metals	9		Revision	End of Unit 4 test
	6	Working properties of metals	<b>Consolidation quiz—end of Unit 9 Test</b>	3.1.2 Performance characteristics of materials: Metals	9		Revision	End of Unit 9 test
	7	Testing—destructive and Non-destructive	Videos and worksheets	3.2.9 Design for manufacture and project management	47		Revision	
	8	Workshop Testing Techniques	PG Online & workshop practical activity	3.1.1 Materials and their applications	3	Complete the Homework 1 for PG Online  <b>Challenge:</b> carry out further research  <b>Further Challenge:</b> create revision resources for topic	Complete worksheet for PG Online	
	9	<b>Exam practice</b>	Exam style questions—mixed topics				Identify weak areas/gaps in knowledge and further consolidate	

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5&6 UNIT 11	1	CAD uses Datum points	Videos and activities CAD challenges	3.1.7 Digital design and manufacture	29		Revision	Practical self assessment
	2	The Design Process	Multiple topics—modelling— foam board; styrofoam foam; polymorph  Practical activities	3.2.4 Design processes  3.1.2 Performance characteristics of materials: Polymers  3.1.2 Performance characteristics of materials: Modern materials  3.1.9 Health and safety	43  5  16  33		Revision	Practical self assessment
	3	Inclusive Design project	Re-design cutlery based on different target markets  Exploring the needs of different target audiences—research and design tasks	3.1.9 The requirements for product design and development	32	Complete design ideas in sketchbook—annotated  <b>Challenge:</b> use range of design communication techniques  <b>Further Challenge:</b> use editing tools in PowerPoint to visually enhance design work	Revision	Design Communication skills
	4	Inclusive Design project	Use inspiration and design ideas to begin modelling concepts in 3D—physical	3.1.10 Protecting designs and intellectual property	34		Revision	Practical skills
	5	Inclusive Design project	Practical continues for inclusive design	3.1.11 Design for manufacturing, maintenance, repair and disposal	35		Revision	Practical skills; Problem solving Time management
	6	Product Design Considerations	Examination question practice: focus on <b>Command words</b>	3.1.9 The requirements for product design and development		Complete PG Online worksheets  <b>Challenge:</b> carry out further extended research into topics covered  <b>Further Challenge:</b> self assess your answers—review and improve ahead of marking	Revision	Responses to exam style questions—PG Online
	7	Product Design Considerations	<b>Consolidation quiz—end of Unit 11 Test</b>	3.1.9 The requirements for product design and development			Revision	Answers to questions—review and improve
	8	Multi	Knowledge review—consolidation lesson ahead of mock exam				Revision	Answers to questions—review and improve
	9	Multiple topics	<b>Mock Exam</b>					Mock exam grade

<b>My Expected Grade</b>				
<b>Teacher Assessed Grade (circle)</b>				
SBE	BE	E	AE	SAE
<b>Comment:</b>				

**Student Self Evaluation**

WWW	EBI
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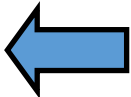
## LEARNING TOOLS

*Tick when you think you are able to define the meaning of the keyword*

KEYWORDS	Ferrous & non-	Alloys	JIT	Batch
Mass	Continuous	Pewter	Forming	Re-distribution
Non/	Lithography	Flexography	Finishes	Seasoning

**Challenge!**

Add more keywords/terms to the table



*Why are we exploring inclusive design*

You are researching inclusive design so that you:

- ◆ Can begin to form an understanding of how design should be inclusive and the barriers that specific user groups might face
- ◆ Can explain why not all products can be inclusive
- ◆ Can reference and use this information to help you answer questions in the your examinations and also enhance your design portfolio for the NEA

*Why are we researching material properties (metal focus) & their suitability?*

- If you can demonstrate understanding of material properties you will be able to apply this knowledge to both your NEA and the examinations.
- Understanding characteristics of material helps us make appropriate choices for our product concepts.

*Why should I have a full understanding of Scales of production*

You must have an understanding of how products are manufactured and what processes are suited to each type of production. This is for examination and application of knowledge for your NEA folder.