

NEA & theory

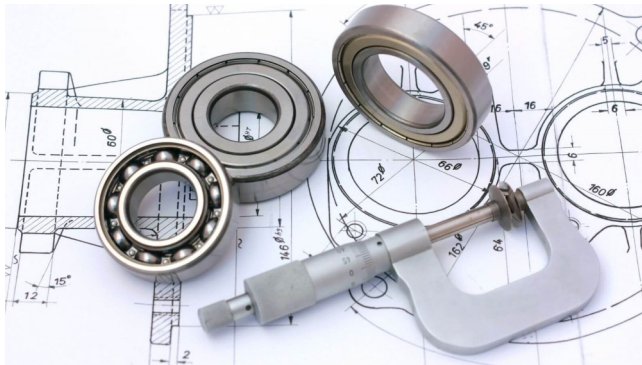
Year 13

Name

Teaching Group

Teacher

multi-topic for Mock Examination



Work completed: BLACK pen.

Teacher assessment—RED pen

Student assessment/improvements—GREEN pen

RECALL activities—BLUE pen

Leadership Tasks carried out: *(tick existing or add others)*

Cycle 1 Chosen Student Leader? - Yes No

RECALL task planner

Led a team

Demonstrated a practical task

Created a plenary

Presented to class

Explained a topic to others

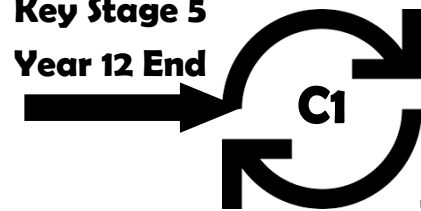
Helped my peers

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Key Stage 5

Year 12 End









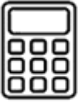



Yr13

Key Stage 5

Cycle 1 Multi topic theory for Mock Examination & NEA — Curriculum Journey

During the course of this cycle, you will cover content pertaining to the NEA and examination within the following categories:

Pre-Learning 	Vital prior knowledge you can obtain before lessons to further your understanding of the topic.	COSHH: COSHH Safety Training Video UK- Control of Substances Hazardous to Health Safetycare preview DVD - YouTube Six Sigma: Six Sigma In 9 Minutes What Is Six Sigma? Six Sigma Explained Six Sigma Training Simplilearn - YouTube	Cross-curricular links 	Aspects of the project that link	Computer Science—manufacturing systems Maths—multi topic exam questions English—long answer questions—structure
Skills 	Specific skills you will learn and use during the project.	Practical modelling/prototyping skills; skilful use of equipment; planning and project management; appropriately acting upon feedback; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Looking forward to the EXAMINATION: 	Aspects of the project related to further study of Design & Technology at GCSE.	Examination practice - mini mock questions
Knowledge 	Specific knowledge you will obtain throughout the project.	Knowledge: correct use of a range of tools/ equipment; CAD CAM proficiency; forming & redistribution processes; design theory; accuracy in design	Building challenge 	Tasks that encourage you to test yourself and exceed targets/expectations.	Building challenge: students will need to plan and project manage NEA in order to meet final deadline in next cycle. Students are expected to independently book the workshop and arrange time with technician and teachers.
Literacy 	Aspects of the project that will improve your reading, writing, spelling, grammar and comprehension.	Reading exam questions; decoding markschemes and use of specialist technical language in NEA	Careers 	Aspects of the project that display the relevant career paths that can be taken using the skills and knowledge acquired.	Product Designer; Project Manger; CAD Designer
Maths 	Aspects of the project that will develop your attainment in Maths related to Design & Technology.	Accuracy in CAD CAM; Examination questions	PSHE/SMSC 	Aspects of the project that consider the spiritual, moral, social and cultural impact of the project and its adherence to British values.	Spiritual: reflection - students will reflect upon client feedback in NEA as well as analysing examination mark schemes. Moral : students responsible for using equipment independently. Social :revision groups and sharing equipment. Cultural: awareness of cultural diversity/inclusive design for final proposal.

Transition Test & UCAS predicted grades

Links between learning in KS4 that prepare you for this cycle

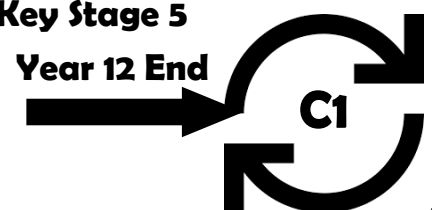
Prior learning from Year 12

Previous cycle links: continuation of NEA

Examination skills are built upon from Year 12—RDPA and COMMAND word responses.

Key Stage 5

Year 12 End



Yr13

Key Stage 5

A Level Product Design Year 13 Cycle 1

Week	Lesson	Topic	Task/project	Spec point	Page No.	Homework	Independent study: 5 hours per week	Assessment
1&2	1	NEA	Section D/E- ongoing	3.2.9 Design for manufacture and project management 3.2.1 Design methods and processes	47 39		Continuous of : Section D/E - practical modelling/prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	2	NEA	Section D/E- ongoing	3.2.4 Design processes 3.2.5 Critical analysis and evaluation 3.2.7 Accuracy in design and manufacture	43 45		Continuous of : Section D/E - practical modelling/prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	3	NEA	Section D/E- ongoing	3.2.8 Responsible design 3.2.9 Design for manufacture and project management	46 47		Continuous of : Section D/E - practical modelling/prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	4	NEA	Section D/E- ongoing	3.2.6 Selecting appropriate tools, equipment and processes 3.1.9 Health and safety	45 33		Continuous of : Section D/E - practical modelling/prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	5	Theory	Smart materials Health and safety	3.1.2 Performance characteristics of materials: smart materials 3.1.9 Health and safety	15 & 33	Complete homework sheet on theory learnt. Challenge: complete a exam style question based on topic from lesson and using marking criteria. Further challenge: Peer or self assess your work with green pen and make improvements needed to consolidate learning.		Research and Analytical skills Spelling, punctuation and grammar Response to examination question
	6	Theory	Metal processes & the environmental impact Eco labelling	3.2.8 Responsible design 3.1.4 Forming, redistribution and addition processes 3.1.8 Inclusive design	46, 19 & 48	Complete homework sheet on theory learnt. Challenge: complete a exam style question based on topic from lesson and using marking criteria. Further challenge: Peer or self assess your work with green pen and make improvements needed to consolidate learning.		Research and Analytical skills Spelling, punctuation and grammar Response to examination question
	7	NEA	Section D/E- ongoing	3.1.4 Forming, redistribution and addition processes 3.2.10 National and international standards in product design	18 48		Continuous of : Section D/E - practical modelling/prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	8	Theory	Inclusive design Trigonometry , Surface area, Calculate area, Decimals, Percentages , Volume	3.1.8 Inclusive design Maths	32 & 49	Revise for upcoming mini mock.		Research and Analytical skills Spelling, punctuation and grammar Response to examination question
	9	Mini Mock Exam—in class 1hours	End of transition assessments					

A Level Product Design Year 13 Cycle 1

Week	Lesson	Topic	Task/project	Spec point	Page No.	Homework	Independent study: 5 hours per week	Assessment
3&4	10	NEA	Section D/E- ongoing	3.2.9 Design for manufacture and project management 3.2.1 Design methods and processes	47 39		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	11	NEA	Section D/E- ongoing	3.2.4 Design processes 3.2.5 Critical analysis and evaluation 3.2.7 Accuracy in design and manufacture	43 45		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	12	NEA	Section D/E- ongoing	3.2.8 Responsible design 3.2.9 Design for manufacture and project management	46 47		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	13	NEA	Section D/E- ongoing	3.2.6 Selecting appropriate tools, equipment and processes 3.1.9 Health and safety	45 33		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	14	NEA	Section D/E- ongoing	3.1.4 Forming, redistribution and addition processes 3.2.10 National and international standards in product design	18 48		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	15	NEA	Section D/E- ongoing	3.2.9 Design for manufacture and project management 3.2.1 Design methods and processes	47 39		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	16	NEA	Section D/E- ongoing	3.2.4 Design processes 3.2.5 Critical analysis and evaluation 3.2.7 Accuracy in design and manufacture	43 45		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	17	NEA	Section D/E- ongoing	3.2.8 Responsible design 3.2.9 Design for manufacture and project management	46 47		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	18	NEA	Section D/E- ongoing	3.2.6 Selecting appropriate tools, equipment and processes 3.1.9 Health and safety	45 33		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management

A Level Product Design Year 13 Cycle 1

Week	Lesson	Topic	Task/project	Spec point	Page No.	Homework	Independent study: 5 hours per week	Assessment
5&6	19	Theory for MOCK Cycle 2	Properties of materials CNC laser cutting Brand awareness	3.1.1 Materials & their applications 3.1.7 Digital design and manufacture 3.1.10 Protecting designs and intellectual property	2, 29 & 34	Complete homework sheet on theory learnt. Challenge: complete a exam style question based on topic from lesson and using marking criteria. Further challenge: Peer or self assess your work with green pen and make improvements needed to consolidate learning.		Research and Analytical skills Spelling, punctuation and grammar Response to examination question
	20	NEA	Section D/E- ongoing	3.2.4 Design processes 3.2.5 Critical analysis and evaluation	43 & 44		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	21	Theory for MOCK Cycle 2	Scales of production and suitability of materials for different methods of production Quick Response Manufacturing Sub-assembly	3.1.6 Modern industrial and commercial practice 3.1.6.2 Efficient use of materials	27 & 28	Complete homework sheet on theory learnt. Challenge: complete a exam style question based on topic from lesson and using marking criteria. Further challenge: Peer or self assess your work with green pen and make improvements needed to consolidate learning.		Research and Analytical skills Spelling, punctuation and grammar Response to examination question
	22	NEA	Section D/E- ongoing	3.2.4 Design processes 3.2.5 Critical analysis and evaluation	43 & 44		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	23	Theory for MOCK Cycle 2	Materials: polymer types Polybutadiene	3.1.2 Performance characteristics of materials: Polymers 3.1.2 Performance characteristics of materials: Elastomers	10, 11 & 12	Complete homework sheet on theory learnt. Challenge: complete a exam style question based on topic from lesson and using marking criteria. Further challenge: Peer or self assess your work with green pen and make improvements needed to consolidate learning.		Research and Analytical skills Spelling, punctuation and grammar Response to examination question
	24	NEA	Section D/E- ongoing	3.2.4 Design processes 3.2.5 Critical analysis and evaluation	43 & 44		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	25	Theory for MOCK Cycle 2	Product Testing Design development Quality Assurance & quality control	3.1.7 Digital design and manufacture 3.2.9 Design for manufacture and project management 3.1.9 Health and safety 3.2.1 Design methods and processes	30, 47, 34, 39	Complete homework sheet on theory learnt. Challenge: complete a exam style question based on topic from lesson and using marking criteria. Further challenge: Peer or self assess your work with green pen and make improvements needed to consolidate learning.		Research and Analytical skills Spelling, punctuation and grammar Response to examination question
	26	NEA	Section D/E- ongoing	3.2.4 Design processes 3.2.5 Critical analysis and evaluation	43 & 44		Continuous of : Section D/E - practical modelling/ prototyping skills; skilful use of equipment; modifying; improving; accuracy and mathematical measurements ; physical & CAD modelling	Research and Analytical skills Self / peer assessment Presentation Project management
	27	Theory for MOCK Cycle 2	Modelling techniques Prototype development Rapid prototyping	3.2.4 Design processes 3.1.7 Digital design and manufacture	43, 44, 30	Complete homework sheet on theory learnt. Challenge: complete a exam style question based on topic from lesson and using marking criteria. Further challenge: Peer or self assess your work with green pen and make improvements needed to consolidate learning.		Research and Analytical skills Spelling, punctuation and grammar Response to examination question

My Expected Grade				
Teacher Assessed Grade (circle)				
SBE	BE	E	AE	SAE
Comment:				

Student Self Evaluation

WWW	EBI
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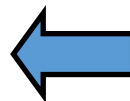
LEARNING TOOLS

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

KEYWORDS	Vertical in house production	Six Sigma	electroluminescent wire	TQM
Iterative	Registered design	6 R's	Open Design	
CNC	QRM	FEA	PPC	
Patents	UPS	Elastomers	Circular	

Challenge!

Add more keywords/terms to the table



Why are we exploring the work of others?

You are researching the work of others so that you:

- ◆ Can begin to form an understanding of how design changes over time
- ◆ Can explain why design changes over time
- ◆ Can reference and use this information to help you answer questions in your examinations and also enhance your design portfolio for the NEA

Why are we researching material properties & 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 Quality Control & Quality Assurance?

All products must conform to safety standards and you must be able to assess how this might be achieved on a mass scale.