

## Scheme of Work 2020 - 2021

### Subject: Engineering

**Year Group: Y13**

**Specification: AQA L3 Engineering**

Lesson No	Topic & Objectives	Big Question – What will students learn?	Key Activities & Specialist Terminology (Do Now Task / Starter/Tasks/Plenary)	Planned Assessment	Homework or flipped learning resources  DODDLE resources	Lit Num SMSC Codes
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### Term One First Half

**ADP Codes:**

Sp2 – Students have access to outstanding learning opportunities – The department is resourced to ensure all students have access to outstanding learning experiences.

C5 – Students reach full potential as barriers have been removed – All learning objectives and tasks – allow scope for differentiation – ensuring all learners are given a chance to learn and progress.

Sp5 – Students take responsibility for their own learning journeys – This is encouraged and facilitated with all internal assessment tasks.

Sp9 – Creating enjoyment and fascination in learning – Practical component of Engineering allows students to gain first-hand experience of curriculum content – creating a more enjoyable and fascinating learning experience.

C3 – Foster a passion for learning – Specialist teachers with a passion and enthusiasm for their subjects bring first-hand experience into the classroom – fostering a passion for learning.

M1 – All stakeholders’ model resilience, positive relationships attitudes and behaviours – all social opportunities in lessons and behaviour expectations made clear by teachers. Attitude to lifelong learning modelled by teaching staff.

Week 1	<p><b>Customer design brief</b></p> <p>identify describe the customer</p>	What conclusions can you come to from being the customer design brief?	Study the design brief and write a in depth review on what the customers want from the design brief.	End of lesson review by teacher.	H/W – Ongoing development of coursework on Teams	Lit – opportunity for extended writing – opinionated review
Week 1	<p><b>customer design brief</b></p> <p>Target market for the product</p>	What would be your target market?	Fun teams write a customer design brief review lining out the details needed to be designed within your new product.	end of week review	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab

Week 2	Customer design brief  Design constraints  Internal stakeholders	What design constraints will you have to use on the product?	Within groups you can discuss the design brief and the constraints that would be needed. Try to think of the internal stakeholders during this process.	In class review by the teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 2	Customer design brief  External stakeholders	What are external stakeholders?	This work will be done using the design brief and a table on the unit 4 coursework	End of week review	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 2	Start performance outcome 2  Operation and performance	What kind of operation and performance are needed on this product?	Look in detail at the three topics given and describe how they are measured and completed.	End of day review via teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 3	Continue performance outcome 2  Product qualities  Product life  Marketplace positioning	How long do you think they live?	Look into detail at the three topics given and describe how they are measured or completed.	End of lesson review with teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab

Week 3	<p>Continue performance outcome 2</p> <p>Product use and function</p> <p>Styling and aesthetics</p> <p>Ergonomic considerations</p>	What kind of aesthetics should be use product for it to sell well?	Look into detail at the three topics given and described how they measured or completed.	End of lesson review with teacher	H/W – Ongoing development of coursework on Teams	
Week 4	<p>Performance outcome 2</p> <p>Engineering systems</p> <p>Power</p>	How will you power the product?	Look into detail at the three topics given and described how they measured or completed.	End of lesson review with teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 4	<p>Performance outcome 2</p> <p>Safety issues</p> <p>Materials and parts selection</p> <p>Materials and usage casting estimates</p>	Will there be any safety Issues with product?	Look into detail at the three topics given and described how they measured or completed	End of lesson review with teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 5	<p>Performance outcome 2</p> <p>Legal and ethical considerations</p>	What maintenance is needed?	Look into detail at the three topics given and described how they measured or completed	End of lesson review with teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab

	Maintenance Environmental considerations					
Week 5	Performance outcome 2 Review an existing product	What existing products are similar to the one you are designed?	Look at an existing product similar to the one that you are designing. Think about ergonomics aesthetics electronics and moving parts	End of lesson review with teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 6	Performance outcome 2 Review a second existing product.	Can you think of 1/3 product similar to the one you are designing?	Look at an existing product similar to the one that you are designing. Think about ergonomics aesthetics electronics and moving parts	End of lesson review with teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 7	Performance outcome 2 Review a third existing product	What is a SWOT analysis?	Look at an existing product similar to the one that you are designing. Think about ergonomics aesthetics electronics and moving parts	End of lesson review with teacher	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab

Term One  
Second Half

Week 1	Performance outcome 2 task 3 Design idea one	Using what you've learned can you think of a design?	Create a design idea by sketching it on An A four piece of paper. Include a SWOT analysis your design.	End of lesson review will teacher	H/W – Ongoing development of coursework on Teams	
Week 1	Performance outcome 2 task 3 Design idea 2 and 3	Can you elaborate on your design in the last lesson?	Create a design idea by sketching it on An A four piece of paper. Include a SWOT analysis your design.	End of lesson review will teacher	H/W – Ongoing development of coursework on Teams	

Week 2	Performance outcome 2 task 3  Health and safety legislations	What kind of health and safety issues are there in the manufacturing industry?	Creates a section for each of the following legislations PUWER  COSHH  British Standards (BS)  Electromagnetic compatibility (EMC) directive  CE marking  HSWA  Is the product safe?	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	
Week 2	Performance outcome 2 task 3  Final idea	What is your final idea?	Create a Fusion drawing of your final idea. This includes materials, processes and dimensions.	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 3	Performance outcome 2 task 3  Aesthetics feedback	What is a survey?	Create a survey which to be handed out and gather information about the aesthetics of your design.	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 3	Performance outcome 2 task 3  Ergonomics	What is ergonomics?	Take a look at your design, is it ergonomic. Also mention about how you may batch produce mass produce your product.	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab

Week 4	Performance outcome 3 task 4  Produce detailed engineering designs.	What kinds of cat drawings could you use?	Produce a CAD drawing that meets all elements of the CDB and PDS and complies with all relevant regulations, standards directives or codes of practice. (P8)	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	
Week 4	Performance outcome 3 task 4  Produce detailed engineering designs.	What software is used by engineers to create technical drawings?	Produce a CAD drawing that meets all elements of the CDB and PDS and complies with all relevant regulations, standards directives or codes of practice. (P8)	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 5	Performance outcome 3 task 4 Produce detailed engineering designs	What software is used by engineers to create technical drawings?	Produce a CAD drawing that meets all elements of the CDB and PDS and complies with all relevant regulations, standards directives or codes of practice. (P8)	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	Lit – subject specific vocab
Week 5	Performance outcome 3 task 4 Produce and maintain design documentation	What is maintenance documentation?	Produce a diary of all the tasks you have completed so far	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	Lit – Recording thoughts and observations
Week 6	Performance outcome 3 task 4 Produce and maintain design documentation	Can you think of a maintenance document template for the product?	Produce a diary of all the tasks you have completed so far	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	Lit – Recording thoughts and observations
Week 6	Performance outcome 5 task 5 Manage engineering designs	What kind of tests can you use to test the design without actually making it?	Produce a test plan that reflects all aspects of the design, highlighting where the design problem has been solved.	Works submitted by teams and will be marked. Feedback given	H/W – Ongoing development of coursework on Teams	

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