

Year 13

Theory

| Timing | Unit Title | Knowledge | Assessing Understanding |
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| Autumn term (2 lessons /week) | Technical principles 2 | <p>Digital design and manufacture</p> <ul style="list-style-type: none"> ● Computer aided design ● Computer aided manufacture ● Virtual modelling ● Rapid prototyping ● Electronic data interchange ● Production planning and control <p>Modern industrial and commercial practice</p> <ul style="list-style-type: none"> ● Scales of production ● Efficient use of materials ● The use of computer systems ● Sub-assembly | End of unit tests |
| | Design and making principles 2 | <p>Responsible design</p> <ul style="list-style-type: none"> ● Environmental issues (consolidation) ● Conservation of energy and resources (consolidation) <p>How technology and cultural changes can impact on the work of others</p> <ul style="list-style-type: none"> ● Social, moral and ethical issues (recap) <p>Design methods and processes</p> <ul style="list-style-type: none"> ● Iterative design processes ● The iterative design process in industrial or commercial contexts <p>National and international standards in product design</p> <p>Design for manufacture and project management</p> <ul style="list-style-type: none"> ● Quality control ● Quality assurance ● Planning for accuracy and efficiency | |
| Spring term 1 (1 lesson /week) | Technical principles 3 | <p>Health and safety</p> <ul style="list-style-type: none"> ● Safe working practices ● Safety in products and services to the customer <p>Protecting designs and intellectual property</p> <p>Feasibility studies</p> | Mock exam |

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| Spring term 2 (1 lesson /week) | Technical principles 4 | Design communication The requirements for product design and development <ul style="list-style-type: none"> ● Product development and improvement ● Inclusive design Designing for manufacturing, maintenance, repair and disposal <ul style="list-style-type: none"> ● Manufacture repair maintenance and disposal ● Ease of manufacture ● Disassembly | End of unit tests |
| | Design and making principles 3 | Critical analysis and evaluation Testing and evaluating commercial products | |
| Summer term 1 | Design and making principles 4 | Selecting appropriate tools, equipment and processes Accuracy in design and manufacture | Past papers |
| | Revision | Paper 1: Technical principles Paper 2: Designing and making principles | |

Non-Exam Assessment (NEA)

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| Autumn term: 2 lessons per week | Non-exam assessment | <ul style="list-style-type: none"> • Students must undertake a small-scale design and make task. Students must produce a final prototype based on a context identified and explored by them. • With reference to the context, students will develop a design brief that meets the needs of a user, client or market. • The brief must be of an appropriate level of complexity and contain a degree of uncertainty so that students can engage in an iterative process of designing, making, testing and evaluating. • Students must produce a final practical prototype based on the design brief they have developed, along with a supporting digital design portfolio. | Formative and summative assessment against AQA marking criteria |
| Spring term 1: 3 lessons per week | | | |
| Spring term 2: 4 lessons per week | | | |