



The Grey Coat Hospital

Key Stage Four Curriculum Plan - *Subject: Design & Technology: Product Design & Textiles.*



Year 10 D&T: Product Design

Half Term (HT)	Topic Area / Focus
	Note: All classes will be taught the same project, however they may be taught in another order due to rooming and equipment.
HT1	Mitred Pencil Box Project Design skills: Researching, designing, isometric/ 2-point perspective drawing, orthographic projection & evaluation. Making skills: Accurate mitre jointing, routing, personalised sliding lid, finishing skills. Exam theory content: • The work of others: AQA Designers. • Material properties • Material categories: Timbers and manufactured boards • Stock forms, types and sizes (all core materials). • Sources and origins: timber. • Communication of design ideas Drawing skills: Orthographic and exploded view. • Specialist techniques and processes - The use of production aids • Surface treatments and finishes • Specialist techniques and processes: Surface treatments and finishes (All core material areas). • Traditional wood joints.
HT2	Casting and sheet metal Project. Design skills: Researching, designing, isometric/ 2-point perspective drawing & modelling & evaluation. Making skills: Accurate marking out, cutting, smoothing of sheet metal. Using CAD to make a mould and casting metal & finishing metal. Exam theory content: • Material categories: Material properties metals. • Sources and origins: metals. • Using and working with materials: Annealing. • Specialist techniques and processes: Metal: addition, deforming or reforming. • Tolerances. • Material management: Cut materials efficiently and minimise waste. • Forces and stresses.



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	• Mechanical devices. • Systems approach to designing.
HT3	Salad Server Project Design skills: Researching, designing, modelling, orthographic projection & evaluation. Making skills: Accurate CAD and laser cutting, wood lamination & finishing techniques. Exam theory content: • Material categories: Polymers. • Sources and origins: Polymers. • Tools, equipment and processes: Timber addition lamination. Polymers: deforming. Timber, metal, polymers: wastage, addition, deforming or reforming. • Energy generation and storage: Fossil fuels, nuclear power, renewable energy, energy storage systems including batteries. • Deforestation, possible increase in carbon dioxide levels leading to potential global warming, fair trade. • New and emerging technologies: Environment. FSC timber. • Ecological issues in the design and manufacture of products • The six Rs & Life cycle assessment • Social issues in the design and manufacture of products • Scales of production: prototype, one-off, batch, mass, & continuous. • Production techniques and systems: Automation, computer aided design (CAD), computer aided manufacture (CAM), flexible manufacturing systems (FMS), just in time (JIT) & lean manufacturing.
HT4	Child's Chair Modelling Project Design skills: Researching, designing, modelling, orthographic projection & evaluation. Making skills: Model making skills using a range of materials & joining methods. Exam theory content: • Use primary and secondary data to understand client and/or user needs • Write a brief & specification • Ergonomics and anthropometrics • Interviews, questionnaires, focus groups • Communication of design ideas - Isometric, orthographic projection. • Material categories: Material properties paper and boards, textiles. (modelling materials) • Prototype development. • New and emerging technologies: Industry, Enterprise, Sustainability, People, Culture, Society, Environment, Technology push & market pull. • Developments in new materials: Smart, modern and composite materials, technical textiles.



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	planned obsolescence, design for maintenance, ethics, the environment. Preparation for end of year 10 summer assessments. The department will provide students with a targeted revision list outlining the topics that will be assessed.
HT5	The last project will take place over HT4 and HT5. End of year Summer Assessments & Feedback. Exam theory content: - Developments in new materials. - How the critical evaluation of new and emerging technologies informs design decisions.
HT6	Non-Exam Assessment (50%) AQA Contexts released on 1st June. The department will share the internal deadlines for each section of the NEA. Section A: Researching the context and users' needs. Exam theory content: - Investigation, primary and secondary data - Design strategies - Prototype development

Year 11 D&T: Product Design

Half Term (HT)	Topic Area / Focus
HT1	NEA: Section A: Researching the context and user's needs. Section B: Design Brief & Specification. Exam theory content: - Scales of production - New and emerging technologies: Production techniques and systems - Design strategies - The work of others - Smart, modern, composite materials and technical textiles. - Sources and origins of materials - Stock forms, types and sizes, standard components.
HT2	NEA: Section C: Initial Ideas



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	• Section D: Development of the final design. Exam theory content: • Ergonomics. Aesthetics and anthropometrics • Mechanical devices • Environmental, social and economic challenge. • Ecological and social footprint • A short assessment is sat in class towards the end of this term, it will include theory taught in HT1 and HT2.
HT3	NEA: Section D: Development of the final design Section E: Realising design ideas. Exam theory content: • Prototype development • Tolerances • Material management & Quality control. • Prototype development • Developments in new materials.
HT4	NEA: • Section E: Realising design ideas. • Section F: Analysing & evaluating. Exam revision is started when the NEA is handed in.
HT5	Exam revision.
HT6	No further lessons take place

Year 10 D&T: Textiles

Half Term (HT)	Topic Area / Focus
HT1	Skills Project



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	Design skills: Researching, designing material experimentation, recording processes & evaluation. Making skills: Seams, hems, darts, gathers, pleats, fastenings, pockets & decorative techniques. Exam theory content: • Material categories: Textiles, Timbers and Manufactured Boards • Developments in new materials: Smart, modern and composite materials, technical textiles. • Stock forms, types and sizes • The use of production aids • Drawing skills: Orthographic and exploded view
HT2	Skills Project Design skills: Researching, designing material experimentation, recording processes & evaluation. Making skills: Seams, hems, darts, gathers, pleats, fastenings, pockets, decorative techniques. Exam theory content: • Tolerances • Forces and stresses • Mechanical devices • Systems approach to designing Shift Dress Project Design skills: Research & analysis, design brief and specification, material sampling, designing skills, toile development, manufacturing of final outcome & evaluation. Making skills: Pattern cutting, application of the skills learnt in the skills project to make their chosen design. Exam theory content: • Use primary and secondary data to understand client and/or user needs • Ergonomics and anthropometrics • Scales of production • Production techniques and systems • Industry, Enterprise, Sustainability, People, Culture, Society, Environment, Technology push & market pull.
HT3	Shift Dress Project Design skills: Research & analysis, design brief and specification, material sampling, designing skills, toile development, manufacturing of final outcome & evaluation. Making skills: Pattern cutting, application of the skills learnt in the skills project to make their chosen design. Exam theory content: • Surface treatments and finishes



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	- Specialist techniques and processes: Textiles - Communication of design ideas - How the critical evaluation of new and emerging technologies informs design decisions: planned obsolescence, design for maintenance, ethics & the environment - Material management: lay plan, nesting, tessellating - Energy generation and storage
HT4	Shift Dress Project Design skills: Research & analysis, design brief and specification, material sampling, designing skills, toile development, manufacturing of final outcome & evaluation. Making skills: Pattern cutting, application of the skills learnt in the skills project to make their chosen design. Exam theory content: - Environmental, social and economic challenges - Ecological and social footprint - Preparation for summer assessment.
HT5	The last project will take place over HT3,4 and HT5. End of year Summer Assessments & Feedback. Exam theory content: Investigation, primary and secondary data. Use primary and secondary data to understand client and/or user needs
HT6	Non-Exam Assessment (50%) AQA Contexts released on 1st June. The department will share the internal deadlines for each section of the NEA. Section A: Researching the context and users' needs. Exam theory content: - Carry out investigations in order to identify problems and needs - How to write a design brief and produce a design and manufacturing specification - Design strategies - Generate imaginative and creative design ideas using a range of different design strategies - Explore and develop their own ideas - Prototype development
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Half Term (HT)	Topic Area / Focus
HT1	NEA: Section A: Researching the context and user's needs.



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	• Section B: Design Brief & Specification. Exam theory content: • Scales of production • New and emerging technologies: Production techniques and systems • Design strategies • The work of others • Smart, modern, composite materials and technical textiles. • Sources and origins of materials • Stock forms, types and sizes, standard components.
HT2	NEA: • Section C: Initial Ideas • Section D: Development of the final design. Exam theory content: • Ergonomics. Aesthetics and anthropometrics • Mechanical devices • Environmental, social and economic challenge. • Ecological and social footprint A short assessment is sat in class towards the end of this term, it will include theory taught in HT1 and HT2.
HT3	NEA: Section D: Development of the final design Section E: Realising design ideas. Exam theory content: • Prototype development • Tolerances • Material management & Quality control. • Prototype development • Developments in new materials.
HT4	NEA: • Section E: Realising design ideas. • Section F: Analysing & evaluating.



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	Exam revision is started when the NEA is handed in.
HT5	Exam revision.
HT6	No further lessons take place