Design and Technology- Resistant Materials : Start of Year 11 Information

Cambridge IGCSE Design and Technology (Course Code: 0445)

Starting in Year 11 (or during Year 10)

Welcome to Design and Technology at DCSG. If you have any questions, please ask your teacher or email Miss Booth the Head of Design and Technology rachel.booth@dulwich.org

Areas covered during Year 9

Year	Michaelmas Term	Lent Term	Trinity Term
9	Introduction to the course. Workshop Health & Safety. Assessing levels of existing D&T Knowledge within the class. Project 1, Timbers Introduction to RM theory with specific focused practical tasks. Woods, tools, machinery, manufacturing, Health and Safety, Quality Control and Evaluation skills Focus on criterion 6 & 7 of assessment criteria	Project 2, Metals & Alloys Introducing the complete Design Cycle. With a focus metals, soldering, casting and brazing, enameling, quality of finish and Manufacturing techniques, analysis of products and writing of specifications. RM theory with specific. Focused practical tasks. Focus on criterion 1,2, 6 & 7 of assessment criteria	Project 3, Polymers, Smart & Modern Materials. Developing the complete Design Cycle. With a focus on plastic, thermoforming, resin casting, CAD, laser cutting, 3D printing, quality of finish and Manufacturing techniques, analysis of products and writing of evaluations. RM theory with specific. Focused practical tasks Focus on criterion 2,5,6 & 7 of assessment criteria

Areas covered during Year 10

Year	Michaelmas Term	Lent Term	Trinity Term
10	Project 4, User Centered Design, Creativity and Production Planning focusing on Generation and exploration of design ideas, development of proposed solutions assessment criteria. RM and Design theory with focus on prototyping and creativity and combining materials. Focus on criterion 1,2,3&4,5,6,7 of assessment criteria.	Project 5, User Centered Design and Problem solving Design theory with focus on problem finding and solving, inclusive design, user centered design and prototyping, CAD, 3D printing and laser cutting. Focus on criterion 1,2, 3&4 of assessment criteria. Full theory past papers.	Coursework Internally assessed based on task selected from exam board. Past paper questions. Start work on Criterion 1,2,3

Topics covered include:

Product Design	Resistant Materials
Health and Safety Sketching Drawing in isometric and 2 point perspective Design development Model making Prototyping Use of technology Scales of production Design and technology in society Environment and sustainability Design styles and movements	Physical and Working properties of materials Wood (sources and processing, types, properties) Metal (sources and processing, types, properties) Plastics (sources and processing, types, properties) Smart and modern materials (types, properties) Composites (types, properties) Preparation of materials Marking out Shaping Joining and assembly Finishes Industrial processes

Work to complete before you arrive (optional)

- Drawing practice. Draw in isometric, 2 point perspective and exploded drawing views. Include shading and rendering to show materials and textures of surfaces.
- Read about the physical and working properties of materials. What properties of materials make them suitable for different uses? e.g. Why is Metal used for saucepans? Why is plastic used for electrical plugs?
- Read about Wood, Metal and Plastic, their sources, processes, types and properties.
- Find a client that you would like to make a product for, observe them and talk to them about any problems they have currently in their day to day living.

Additional resources

www.technologystudent.com
https://www.youtube.com/c/productdesignermaker/playlists
https://www.bbc.co.uk/bitesize/examspecs/zby2bdm (not the same exam board, but still has valuable content and theoretical knowledge that is common for all exam boards covering design and technology)