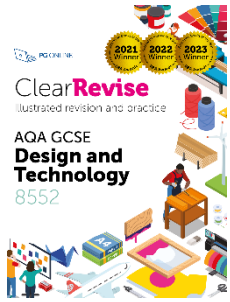
AQA GCSE Design & Technology PLC

Please use the Clear Revise textbook to help you with your revision. Please see Mr Beardsall if you don't have a copy. One can be purchased on ParentPay for £6



Section A: (20%) Core Technical Principles	Section B: (30%) Specialist Technical Principles (Timbers Focus)	Section C (50%) Designing & Making Principles
1.1 New and Emerging Technologies • Impact of new technologies on Industry, Enterprise & Sustainability **Pages 2-6** • Market Pull and Technology Push **Page 7** • Changes in job roles and the workplace (automation and robotics) • **Pages 3 & 9** • Sustainable design and environmental consideration **Pages 5,10, 11**	**2.1 Selection of Materials or Components** • Properties of Timbers **Pages 32, 33, 64** • Stock Forms **Page 64, 65, 66** • Physical & Working Properties **Page 30**	**3.1 Investigation and Analysis** • Conducting research to identify user needs. Primary & Secondary Research **Page 110** • Analysing existing products (disassembly and reverse engineering **Page 111** • Ergonomics & Anthropometrics **Page 112, 113**
1.2 Energy Generation and Storage • Renewable energy sources (wind, solar, tidal, etc.) **Page 14, 15** • Non-renewable energy sources (coal, gas, oil) **Page 13** • Energy storage systems (batteries, kinetic energy recovery systems) **Page 16**	**2.2 Timber Processes** • Wood Lamination **Page 66** • Tools **Page 83, 84,85** • Turning – Lathe + CNC **Page 86** • Health & Safety **Page 136, 137**	**3.2 Communication of Ideas** • Use of sketches, annotated drawings, and CAD tools **Pages 124, 125** • Technical drawings (e.g., orthographic projection) **Pages 126, 127**
1.3 Developments in Modern and Smart Materials • Properties and uses of modern materials (e.g., graphene, titanium) **Page 17** • Properties and uses of smart materials (e.g., shape-memory alloys, thermochromic pigments) **Page 18** • Composite materials and their advantages **Page 19**	**2.3 Scales of Production** • One-off, batch, mass, and continuous production methods **Page 104, 105** • Appropriate manufacturing techniques for each scale **Pages 104, 105,106**	**3.3 Development of Ideas** • Iterative design process and prototype development **Page 128** • Testing and evaluating design ideas • Design Strategies **Page 122, 133**

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1.4 Systems Approach to Designing • Input, process, and output components in systems **Page 22. 23** • Control devices (e.g., sensors, switches, microcontrollers) **Page 23** • Mechanical systems: levers, linkages, cams, gears, pulleys **Pages 24, 25, 27**	**2.4 Surface Treatments and Finishes** • Processes to enhance the aesthetic and functional qualities of products **Page 67** • Preparation and application techniques (e.g., sanding, painting, anodizing)	**3.4 Material Management** • Minimizing waste and maximizing efficiency **Page 134, 135**
1.5 Materials and their Working Properties • Papers and boards (e.g., cartridge paper, corrugated card)] **Page 31** • Natural and manufactured timbers **Pages 32, 33** • Metals and alloys (ferrous and non-ferrous metals) **Pages 34, 35** • Polymers (thermoforming and thermosetting plastics) **Pages 36, 37** • Textiles (woven, non-woven, knitted fabrics) **Pages 38, 39**	**2.5 Polymer Processes** • 3D Printing, Vacuum Forming, Injection Moulding **Pages 79,80**	**3.5 Ethical and Sustainable Design** • Ethical, Social & Cultural considerations in design and manufacture **Pages 42, 43, 48** • Fairtrade & Deforestation **Page 116**
1.6 Ecological and Social Footprint • Life cycle assessment (LCA) of products **Page 46** • Reduce, reuse, recycle principles **Page 47**	**2.6 Quality Control and Quality Assurance** • Difference between quality control and assurance **Pages 131, 132** • Methods for ensuring product quality (e.g., testing, tolerances) **Pages 131, 132** • Templates & Jigs **Page 133**	**3.6 The Work of Others** • Know at least 3 x designers and 3 x design companies **Page 117-121**
1.7 Sources and Origins • Conversion of raw materials into usable forms • Sources of natural and manufactured timbers **Page 62**		