Subject: DT: Design Technology **Qualification:** AQA GCSE Design and Technology (9-1) **Exam Date:** June 2020

HELP - Resources you could use

1. Use the links (in Blue and Underlined) on this document eg **Technology Student** which has a special area dedicated to the new AQA DT GCSE Course. Technology Student.Com is an excellent free online resource with animations and information such as flip cards that can be printed out. **BBC Bitesize** also explores and tests different topics
2. Focus education is excellent for information on Mechanisms, Energy, Materials and Manufacturing. Excellent multiple choice testing section.This available for free online to students using this link - **Focus Resources**
    a. Smart, Modern and Composite Materials
    b. Focus on Mechanisms
    c. Focus on Plastics Manufacturing Processes
    d. Energy use and Environment
3. The school has recommended **Collins Revision book 'GCSE AQA Design and Technology (9-1 Course)'** - The topics shown in RED in the section below refer to the headings in this revision book.

The Written Paper

A 2 hour paper split into 3 sections.

- Section A (20 Marks) - Core Technical Principles
- Section B (30 Marks) - Specialist Technical Principles
- Section C (50 Marks) - Designing and Making Principles

You will be given a mixture of **Multiple Choice** (1 Mark), **Short Answer** (between 3 and 8 Marks) including questions that require **analysing** and **evaluating**, and **Extended Answer** (8 Marks) Questions. **Maths questions** can occur in all sections.

The following are command words

- **'Evaluate'** means that you have to make a *judgement from available evidence*.
- **'Discus'** means you should *present key points*.
- **'State'** means that you should answer in *clear terms* - you do not need to explain.
- **'Illustrate'** means that you need to present *examples*.
- **'Explain'** means that you need to set out *reasons*.

Section A (20 Marks) - Core Technical Principles

This section covers the basic information you need across a wide range of materials and technologies. You should **understand all of this content** though you will not be expected to have an in depth knowledge - that is for the next section. Some of this content you will have covered at KS3.

If you are using the CGP revision book to revise then focus on Section One - Key Ideas in Design and Technology and Section Two - An introduction to Materials and Systems

WHAT TO REVISE Key topics for revision	**HOW TO REVISE** Subjects to help you get started using CGP revision book	**Links to Technology Student.Com**	**Other resources and Booklet Questions**
1.1 New and Emerging technologies	• Technology in Manufacturimg • Production Systems - CAD/CAM • Product Sustainability • Product Sustainability and Social Issues • Products in Society	NEW AND EMERGING TECHNOLOGIES - Look near the top of the page on industry, enterprise, sustainability, people, culture, society environment and production techniques and systems. Revision cards for Environment about ¾ way down the page. Revision web at the bottom of the page.	
1.2 Energy Generation and Storage	• Powering Systems	ENERGY GENERATION AND STORAGE - Look about ¼ of the way down the page for sections on Energy generation and storage including fossil fuels, nuclear and batteries. Revision cards for Energy near bottom of page. Revision web at the bottom of the page.	Energy generation
1.3 Developments in new materials	• Developments in New Materials	DEVELOPMENTS IN NEW MATERIALS Look about ¼ of the way down the page for sections on Modern materials, Smart Materials and Composite Materials	
1.4 Systems approach to designing	• Electronic systems	SYSTEMS APPROACH - Electronic	

		systems including programmable components to provide functionality to products and processes, and enhance and customise their operation	
1.5 Mechanical Devices	• Mechanical Systems	MECHANICAL SYSTEMS Look about ⅓ of the way down the page for further links eg types of motion, forces, levers, cams etc	• **Focus Resources** Go to Mechanisms. Excellent multiple choice section.See also mechanical toys.
1.6 Materials and their working properties	• Properties of Materials • Paper, Board and Timber • Metal's Alloys and polymers • Textiles • Textiles and Manufactured boards	Materials - Wood, Metals, Plastics and Composites Materials - Papers and Boards about ½ way down the page. Materials - Natural and Manufactured Timbers about ½ way down the page. Materials - Metals about ½ way down the page. Materials - Polymers about ½ way down the page. Materials - Textiles about ½ way down the page. Poster - Paper and Boards Revision cards for Materials about ⅓ way down the page. Revision web at the bottom of the page.	

Section B (30 Marks) - Specialist Technical Principles

This section covers the in-depth knowledge and understanding you need in relation to electrical and mechanical systems and components. You should also have knowledge of Materials. Other DT subjects will have a different content in this section.

If you are using the CGP revision book to revise then focus on Section Three - More about Materials, Section Five - Wood, Metals and Polymers and Section Seven - Electronic and Mechanical Systems.

WHAT TO REVISE Key topics for revision	**HOW TO REVISE** Subjects to help you get started using CGP revision book	**Links to Technology Student.Com**	**Other resources and Booklet Questions**
2.1 Selection of materials and components	• Selecting materials • Properties of Components in Systems	Revision cards for Materials about ⅓ way down the page	
2.2 Forces and stresses	• Forces and Stresses	Forces, Moments and Equilibrium	
2.3 Ecological and social footprint	• Product sustainability • Product sustainability and Social Issues • Products in Society	Revision cards for Obsolescence about ⅔ way down the page Ecological and Social Footprint about ½ way down the page.	• Making Polyester Fibre from Plastic Bottles Youtube video showing how plastic bottles can be recycled
2.4 Sources and origins	• Production of Materials • More on the production of materials	Sources and Origins about ⅔ way down the page.	
2.5 Using and working with materials	• Shaping Materials - Hand Tools • Moulding and Joining • Properties of Components in Systems • Cutting, Drilling and Soldering • PCB Production and Surface Treatments	Printed Circuit Boards Soldering Safety and Soldering Flow Solder Video	• Materials and their working properties Powerpoint Presentation
2.6 Stock forms, types and sizes	• Standard Components in Systems • Stock forms and standard components - WMP • More standard components	Electronics and Systems about ¾ way down the page. Electronic Systems Microcontrollers	• Electronic Systems - Powerpoint looking at Mechanical and Electronic Systems
2.7 Scales of Production	• Scales of production • Production Aids	Revision cards for Production Methods and Comerce about ⅔ way down the page Scales of Production about ⅔ way down the page.	

		Flow or Wave Soldering	
2.8 Specialist Techniques and processes	• Shaping Materials - Power and Machine Tools • Shaping Techniques • Quality Control • Moulding and Joining	Materials - Working with woods, metals and polymers about ¾ way down the page.	
2.9 Surface treatments and finishes	• Treatments and Finishes	Surface treatments and finishes very near the bottom of the page.	

Section C (30 Marks) - Designing and Making Principles

This section covers the in-depth knowledge and understanding you need in relation to electrical and mechanical systems and components. Other DT subjects will have a different content in this section.

If you are using the CGP revision book to revise then focus on Section Eight - Designing and Making.

WHAT TO REVISE Key topics for revision	**HOW TO REVISE** Subjects to help you get started using CGP revision book	**Links to Technology Student.Com**	**Other resources and Booklet Questions**
3.1 Investigation, primary and secondary data	• Understanding User Needs • Market research • Product Analysis • Design Briefs and Specifications	Revision cards for Anthropometrics, Ergonomics and Inclusive Design about ½ way down the page Primary Sources of Data about ¾ way down the page.	
3.2 Environmental, social and economic challenge	• Product sustainability and Social Issues		
3.3 The work of others	• Looking at the Work of Designers	The work of designers, design movements and design companies Revision cards for Art Movements and Designers and Companies about ⅔ way down the page	
3.4 Design strategies	• Design Strategies	Designing and Making Principles about ¾ way down the page.	
3.5 Communication of Design Ideas	• Drawing techniques	Communicating Design Ideas near the	

	• More on drawing techniques	bottom of the page.	
3.6 Prototype development	• Exploring and Developing a Design • Developing Prototypes	Revision cards for Model Making about ⅓ way down the page	
3.7 Selection of materials and components	• Manufacturing Specification • Selecting materials	Manufacturing Specification	
3.8 Tolerences	• Quality Control • Standard Components in Systems and Control	Tollerances near the bottom of the page.	
3.9 Materials management	• Using Materials Efficiently	Material Management near the bottom of the page.	
3.10 Specialist tools and equipment	• Shaping materials - Power and Machine Tools • Shaping Techniques • Moulding and Joining • Cutting, Drilling and Soldering	For a range of equipment and tools go to the following links, although you may want to explore several sections on www.technologystudent.com Equipment and Processes Resistant Materials Computer Numeric Control (CNC)	
3.11 Specialist techniques and processes	• Treatments and finishes	Finishes to wood and metals Look about ½ way down the page for some revision cards. Surface treatments and finishes very near the bottom of the page.	