

2021 Design and Technology Spring - Revision Topics

Length of paper: 2 Hours

28 Questions (some have two parts to them)

		Total Marks for section
Section A	Core Technical Principles	20
Section B	Specialist Technical Principles	30
Section C	Designing and Making Principles	50
TOTAL:		100

SECTION A: Core Technical Principles Multiple Choice Mark Range 1-1 Marks	Reflection questions, key knowledge and tasks to aid revision:	Useful revision activities, Notes, Videos, Textbook or Website Links: BITESIZE AQA TOPIC LINK: https://www.bbc.co.uk/bitesize/topics/zkcpknn
Business Models	Know several types of Business models and how businesses are set up and run.	https://www.bbc.co.uk/bitesize/guides/zn4bcj6/revision/2 <ul style="list-style-type: none"> Knowledge Test
Renewable Energy	Know the various sources of renewable energy.	https://www.bbc.co.uk/bitesize/guides/zf8ck2p/revision/1
Product Maintenance	Ways that you can maintain a product so that it keeps working.	Review work on 6Rs https://www.bbc.co.uk/bitesize/guides/zbn6pbk/revision/4
Biodegradable materials	Know what makes a material biodegrade. Know several kinds.	https://www.bbc.co.uk/bitesize/guides/zfq8jty/revision/1 <ul style="list-style-type: none"> Knowledge Test
Packaging materials	Know what materials are used in food packaging.	Study a fast-food package and identify what materials have been used and why. Technology student: https://technologystudent.com/despro2/crdpap2.htm
Input systems – sensors, switches etc.	Know how an electronic circuit can be switched on and off in various levels of light.	https://www.bbc.co.uk/bitesize/guides/z6kr97h/revision/1 <ul style="list-style-type: none"> Knowledge Test Technology student: https://technologystudent.com/elec1/ldr1.htm
Categorising materials	Types of Hardwood and Softwood	https://www.bbc.co.uk/bitesize/guides/zjgyb82/revision/3

		<ul style="list-style-type: none"> • Knowledge Test
Types of motion	Types of motion	https://www.bbc.co.uk/bitesize/guides/zbt26yc/revision/1 <ul style="list-style-type: none"> • Knowledge Test
Global warming	Know several factors that contribute to global warming.	https://www.bbc.co.uk/bitesize/guides/zf8ck2p/revision/1 <ul style="list-style-type: none"> • Knowledge Test
Calculating area	Calculating the area of a flat surface.	
SECTION A: Core Technical Principles Short answer Mark Range 2-4 Marks	Reflection questions, key knowledge and tasks to aid revision:	Useful Notes, Video, Textbook or Website Links:
Modern and Smart Materials	Know several types of Modern and Smart Materials. Know several of their properties. Know how they are constructed and how this helps make them fit for purpose.	https://www.bbc.co.uk/bitesize/guides/zfq8jty/revision/1 <ul style="list-style-type: none"> • Knowledge Test Technology student: https://technologystudent.com/joints/kevlar1.html
Properties of materials	Properties of Hardwoods, Softwoods and Manufactured boards.	https://www.bbc.co.uk/bitesize/guides/zjgyb82/revision/1 <ul style="list-style-type: none"> • Knowledge Test
Manufacturing techniques	JIT (Just In Time) - benefits	DT Textbook – Pages 11 and 24 Technology Student: https://technologystudent.com/prddes1/justintime1.html Revision Cards: https://technologystudent.com/joints/revcard_jit1.html
SECTION B: Specialist Technical Principles Short answer and Extended Mark Range 1-8 Marks	Reflection questions, key knowledge and tasks to aid revision:	Useful Notes, Video, Textbook or Website Links: BITESIZE AQA TOPIC LINK: https://www.bbc.co.uk/bitesize/topics/zd9sd6f
Types of forces	Know the main types of forces and how they act on various products.	https://www.bbc.co.uk/bitesize/guides/znq8jty/revision/2 DT Textbook – Chapter 19 – Pages 102-104 Technology Student:

		https://technologystudent.com/forcmom/force1.htm Find examples of each type of force in everyday products.
Manufacturing Processes Choose 2 materials that can be laminated - to focus on	Process of laminating– tools, equipment, step by step process.	Laminating – 107, 138 - Paper – 146 - Plastics – 190 - Textiles – 205 - Wood – 148, 157 Break down the process into stages and steps to explain how lamination is achieved.
Sawing and Drilling	Know the process of sawing or drilling a piece of material.	Review your photo frame work and the processes for removing waste that you undertook.
Quality Control	Know what the term ‘quality control’ means and the purpose of it. Methods of quality control.	Technology Student: https://www.technologystudent.com/prddes1/qual2.html
Origins of materials	Know the various sources of materials: Metal, Paper, Textiles, Polymers and Timber.	Look through the whole section on the Bitesize website. https://www.bbc.co.uk/bitesize/topics/zd9sd6f
Preparing materials for use	Know how various materials are prepared for use – paper and board, textiles, timber. From the videos: Create a flow diagram to show how the process can be broken down into a simple step by step process What tools and equipment are used? What are the key features of each process?	Watch the video and write down the process of how each material is prepared for use. Textiles - Cotton - https://www.youtube.com/watch?v=YlaG7KTbzwA Paper - https://youtu.be/jmgMdDH14sE https://technologystudent.com/despro2/crdpap1.htm Timber - https://youtu.be/SwxinbpQ9B4 https://www.youtube.com/watch?v=dzRulwr-ksc
Consumer decision & choices (extended answer)	Know what can influence consumer decisions when purchasing items.	https://www.bbc.co.uk/bitesize/guides/zbn6pbk/revision/4 What factors do you consider before buying a product?

		What will help drive your final decision?
SECTION C: Designing and Making Principles Short answer and Extended Mark Range 2-6 Marks	Reflection questions, key knowledge and tasks to aid revision:	Useful Notes, Video, Textbook or Website Links: BITESIZE AQA TOPIC LINK: https://www.bbc.co.uk/bitesize/topics/zj8yjhv
Product Analysis (extended answer)	Analysing and evaluating products against a list of criteria – users needs, suitability and safety.	Practice analysis skills – picking out features on a product and then evaluate how their inclusion in the design, helps the user, fitness for purpose of the product.
Anthropometric Data	Know what ‘Anthropometric’ data is. How it is used by designers.	DT Textbook – 239-240 Technology Student: https://www.technologystudent.com/despro_flsh/revise11.html
Tolerances in manufacturing	Calculation of %	DT Textbook – 161, 222, 273 Technology Student: https://www.technologystudent.com/prddes1/tolera1.html https://www.technologystudent.com/prddes1/tolera2.html
Design Strategies (extended answer)	Understand and know the benefits of collaborative design.	DT Textbook - 254
Health and Safety	Using cutting tools safely.	https://www.bbc.co.uk/bitesize/guides/zbstng8/revision/3
Surface Finishes (extended answer)	Know several types of surface finishes for varied materials and why they might be used.	https://www.bbc.co.uk/bitesize/guides/zbstng8/revision/4 Technology Student: https://www.technologystudent.com/despro_flsh/mats_finish1.html DT Textbook – 284 - 287
3D and 2D Drawing	Know the advantages of different drawing styles.	https://www.bbc.co.uk/bitesize/guides/z6jkw6f/revision/1

		DT Textbook 259-263
Orthographic Drawing	Know what an 'Orthographic Drawing' is. How to 'read' and interpret an Orthographic Drawing. Drawing in Isometric.	https://www.bbc.co.uk/bitesize/guides/zbstng8/revision/2 Technology Student: https://www.technologystudent.com/prddes1/orthogrp1.html
Volume	Calculation of volume.	
Modelling Ideas	Why is modelling used by designers?	Think about why you have made a model of your idea for your NEA - how has it helped you? Technology Student: https://www.technologystudent.com/prddes1/prototype1.html

DT Textbook AQA Design and Technology Textbook – have a go at the sample questions in the book that relate to each topic

Revision Exercises and Tasks:

Core Technical Principles – 77-78, 99-100

Specialist Technical Principles – 127-128, 234-235

Designing and Making Principles - 268, 288-289

Other Revision Resources:

Revision Websites: Information and End of Topic Quizzes.

BBC Bitesize – AQA Design and Technology Menu <https://www.bbc.co.uk/bitesize/examspecs/zby2bdm>

BBC Bitesize – AQA Design and Technology – Core Technical Principles <https://www.bbc.co.uk/bitesize/topics/zkcpkmm>

BBC Bitesize – AQA Design and Technology – Specialist Technical Principles
<https://www.bbc.co.uk/bitesize/topics/zd9sd6f>

BBC Bitesize – AQA Design and Technology – Designing and Making Principles
<https://www.bbc.co.uk/bitesize/topics/zj8yjhv>

Technology Student covers the whole of the New AQA GCSE Specification

https://technologystudent.com/despro_flesh/NEW_GCSE3.html

Other useful videos:

A Quick Guide to Smart & Modern Materials:

<https://www.youtube.com/watch?v=FgrlDibPmJo> (2.55 min)

Modern and Smart Materials GCSE DT

<https://www.youtube.com/watch?v=ggQjmN3N92w> (11 min)

What is Kevlar?

<https://www.youtube.com/watch?v=dJgeeQ5S86c+%285.08+min%29>

Watch In Slow-Motion As Kevlar Fibers Are Put To The Test

<https://www.youtube.com/watch?v=ybgMEjl9j-g+++%282.41+min%29>

MANUFACTURING TECHNIQUES

Just in Time (JIT) <https://www.youtube.com/watch?v=AH5Bn8iguNM+++%285.06+min%29>

Just-in-Time (JIT) Manufacturing System

<https://www.youtube.com/watch?v=ov9o7-xTAd8+++%283.11+min%29>

PROCESS OF LAMINATION

Lamination of Paper

How to laminate paper:

<https://www.youtube.com/watch?v=xhMQu0Qiull+++%283.52+min%29>

How to Use A Laminator:

<https://www.youtube.com/watch?v=wRmzD5PgTm4+%281.58+min%29>

Lamination of Plastics

Processes - Plastic Laminating:

<https://www.youtube.com/watch?v=b5o-fpkGorc+++%281.34+min%29>

Lamination of Textiles

Fabric lamination

<https://www.youtube.com/watch?v=3u-6QASTW6o>

Lamination of Wood

How Laminate is made

<https://www.youtube.com/watch?v=GHyiBeJeTJo+%284.26+min%29>

QUALITY CONTROL EXPLAINED

<https://www.youtube.com/watch?v=18cN8MZvJRA>

HOW TIMBER IS PREPARED FOR USE

<https://www.youtube.com/watch?v=NvbgwdTGoyo>

<https://www.youtube.com/watch?v=SwxinbpQ9B4>