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KS4 D&T Exam Support

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Final version

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Exam support for D&T

[Insert main document]

Reviewing how to support this years cohort to achieve top grades

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As teachers, do we know what is expected?

Changes to this year's course requirements from JCQ (2022)

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Changes to the NEA

GCSE design and technology: decision for 2022

Permit exam boards to accept mock-ups and/or clear and detailed intentions of prototypes. Exam boards to provide clarification about their requirements.

Permit demonstration of using machinery, tools and/or processes.

NEA

- Remember it is better to have a little bit of everything, rather than a lot of one and nothing of everything else
- Always link everything back to the context and the design brief

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JCQ CIC Joint Council for Qualifications CIC

In September 2021, the government announced the intention of returning to examinations this summer, following the disruption experienced over the last two years due to the Covid-19 pandemic.

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Advance Information for Ofqual Regulated General Qualifications

Each awarding organisation will provide advance information on the focus of the content of summer 2022 exams in the majority of subjects at GCSE, AS and A level1 . The policy intention of providing advance information is that it will support students' revision. It will enable teachers to plan to adapt their teaching in the second half of the spring term if necessary, in the time before the examination, in the context of the coronavirus (Covid-19) pandemic which has disrupted the education of students sitting exams in summer 2022.

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JCQ CIC Joint Council for Qualifications CIC

The materials are intended to communicate, in advance, the focus of the content of the 2022
examination papers.
In line with the Department for Education's policy decision in England, awarding organisations
will make advance information available on their public websites at the same time by
7 February 2022 at the latest. The Department for Education has also decided to retain the
flexibility for advance information to be deployed at other points ahead of 7 February 2022
if circumstances require. At least a week's notice will be given if it is decided that advance
information will be released earlier than 7 February 2022.
The materials may be used at any point from the date of release. The advance information
cannot however be brought into the actual examinations

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What is advance information and what does it allow?

- Advance information is intended to communicate in advance some of the aspects of the specification that will be assessed in the examination papers.
- The breadth, depth and presentation of the advance information will vary between subjects to reflect their different characteristics.
- The information will detail the focus of particular aspects of the examination; for example, the content, contexts, texts, topics, sub-topics, themes and skills that will be assessed in the 2022 exams.
- This may be different, depending on the nature and design of the subject and each specification's assessment arrangements.
- It will support revision in the time before the examination.

What is advance information and what does it allow?

Advance information does not require any changes to a question paper's usual structure2, which means that the examination assessments will:

– be familiar to teachers and students.

– allow continued relevance of associated assessment and teaching resources, including past papers.

– support student confidence in minimising the unexpected in the layout or structure of question papers.

• Different qualifications require different advance information solutions to maximise the value of the approach. This means that while there will be a common approach across specifications within each subject at a particular level, what that approach looks like for individual specifications might be different as the advance information is tailored to suit those individual assessment approaches. There will also be a variety of approaches across subjects. All awarding organisations are working to the same principles and following the same Ofqual process in creating advance information.

• The advance information will not always detail everything that is in the examination. In some cases this would risk good education, progression, or fair results; in others it would be unhelpful to teachers and students, for example by listing topics that could lead to excessive teaching or revision on areas that are worth few marks

What are the key principles behind advance information?

Awarding organisations are working to the following key principles when developing advance information:

• We have avoided providing so much detail that answers to likely questions could be pre-prepared and memorised.

• We have made sure advance information does not:

– undermine the value of the qualification in supporting student progression.

– directly provide answers to other, potentially low tariff, questions.

– compromise the capability of the examinations to sufficiently differentiate between students' performances

How and when should advance information be used?

- Advance information can be used from the point of release.
- It can be used flexibly by centres to achieve its purpose of supporting revision. It should not, however, be used to narrow teaching and learning.
- It can be used by teachers in supporting their students' revision and referred to by students in their revision and final examination preparation.
- It cannot be brought into the examinations.
- It will not be at a level that allows questions to be predicted or answers prepared.

Preparation should continue to focus on knowledge and understanding that can be applied appropriately in the context of unseen examination questions.

What will advance information look like?

- The varying nature of subjects, including the characteristics of the assessment, means that the information will focus on different aspects for different subjects and be presented in different ways depending on the individual specification's assessment design.
- The advance information could focus on areas of knowledge, skills, contexts, sources, texts and/or themes.
- Presentation will take the most appropriate form for clear communication of the information.
- The advance information will be designed to be as accessible as possible. However, centres will be allowed to make reasonable adjustments as appropriate to ensure the information is accessible to all, including students with particular needs. Awarding organisations will continue to provide their usual support to teachers with advice and guidance on how to modify these notices.
- In some subjects advance information will focus on all or the majority of the examined content in 2022 but in other subjects it will focus on one paper or section due to the nature of the subject or the assessment.

Example A: Mirroring specification layout in a table

Example based on GCE Geography

The following table summarises the subject content targeted in the June 2019 examination papers.

1. How important are water and carbon to life on earth?	
Key Ideas	**Content**
1.b. The carbon and water cycles are systems with inputs, outputs and stores.	The distribution and size of the major stores in the carbon and water systems, including the atmosphere, oceans, water bodies, ice (cryosphere_, soil, vegetation and groundwater.
1.c. The carbon and water cycles have distinctive processes and pathways that operate within them.	The processes of water cycle, including evaporation, transpiration, condensation (including formation of clouds), precipitation (including causes of precipitation), interception, abiation, runoff (including overland flow and saturated overland flow) catchment hydrology (including infiltration, percolation, throughflow, groundwater flow and cryospheric processes.

Example B: Bullet point list indicating the focus of high tariff extended response questions

Example based on GCSE Sociology

For each a paper, the list shows the major focus of the higher tariff extended response questions. Students are expected to be familiar with explanations of this content.

Topics **not** included on the list below **may** appear in questions with a lower tariff.

Paper 1

3.3 Families

3.3.1 Functions of families

- Differing views of the functions of families.

3.3.4 Changing relationships within families

- Changing relationships within families.

3.4 Education

3.4.2 The relationship between education and capitalism

- Different views of the correspondence principle on the relationship between education and capitalism as developed from a Marxist perspective by Bowles and Gintis.

3.4.3 Factors affecting educational achievement

- Factors affecting educational achievement.

Etc.

Example C: Lists of subject content separated from skills

Example based on GCE Economics

The specification will be assessed in the June 2019 question papers as indicated below.

Paper 1

Subject content

4.1.2.3 Aspects of behavioural economic theory

4.1.2.4 Behavioural economics and economic policy

4.1.3.1 The determinants of the demand for goods and services

4.1.3.2 Price income and cross elasticies of demand

4.1.4.5 Economies and diseconomies of scale

Etc

Quantitative skills

- Calculate, use and understood percentages and percentage changes.
- Construct and interpret a range of standard graphical form.
- Calculate and interpret index numbers.

Example D: Content and form of sources outlined

Example based on GCSE Media Studies

The focus of the June 2019 assessment will be as follows:

Paper 1	Area/s of the theoretical framework/content	Media Form/s and/or set products
Section A	Media language Representation Media Contexts	Advertising – *Unseen* Magazines – *Reveal*
Section B	Media industries Audiences	Video games – Pokemon Go Film – not notified
Paper 2	**Area/s of the theoretical framework/content**	**Media Form/s and/or set products**
Section A	Media language Representation Media Contexts	Television – Unseen extract from set product: *Cuffs*
Section B	Media industries Audiences	Newspapers – *The Times and Daily Mirror*

Quick overview of the D&T GCSE exam

- Written paper is weighted at 50% of the whole GCSE and all exam papers are worth 100 marks.
- Students sit one exam paper for all boards and there's only one level of entry.
- There are no pre-release papers for any exam board.
- Students write directly on to the exam papers for all exam boards. (except 2022)
- All exam papers assess the core technical principles, specialist technical principles and designing and making principles.
- All exam papers MUST include a minimum of 15% assessing mathematical skills with a design and technology context (calculators are permitted).
- Section A core content has a broader materials focus which includes types of materials, their sources, uses, properties rather than detailed knowledge about manufacturing with that material.
- Section B allows students to demonstrate specialist knowledge of one or more material area.
- There are no design questions in the format of the design question from the 2009 legacy exam.

Assessment objective weightings

Assessment Objective	Exam paper	Non Exam Assessment	Overall weighting
AO1: Identify, investigate and outline design possibilities to address needs and wants	0	10%	10%
AO2: Design and make prototypes that are fit for purpose	0	30%	30%
AO3: Analyse and evaluate: • design decision and outcomes including for prototypes made by themselves and others • wider issues in design and technology	10%	10%	20%
AO4: Demonstrate and apply knowledge and understanding of: • technical principles • designing and making principles	40%	0	40%

Assessment objectives are set by Ofqual and are the same across all D&T GCSE specifications and exam boards

The written exams at a glance

Exam board	Length	Section A Core Technical Principles (broader understanding of D&T)	Section B Specialist Technical Principles (focusing on at least one material area)	Section C Designing and Making Principles	Total number of marks
AQA	2hrs	20 marks	30 marks	50 marks	100
Edexcel	1hr 45	40 marks	60 marks	No separate section – this is integrated into other sections	100
Eduqas	2hrs	75 marks	25 marks	No separate section – this is integrated into other sections	100
OCR	2hrs	55 marks	45 marks	No separate section – this is integrated into other sections	100

Click on the name of the exam board to visit the D&T GCSE page on their website

AQA exam in more detail

Exam board	Length	Section A Core Technical Principles (broader understanding of D&T)	Section B Specialist Technical Principles (focusing on at least one material area)	Section C Designing and Making Principles
AQA	2hrs	A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding. 20 marks	Several short answer questions (2–5 marks) and one extended response to assess a more in-depth knowledge of technical principles. 30 marks	A mixture of short answer and extended response questions. 50 marks

Click on the name of the exam board to visit the D&T GCSE page on their website

AQA: Useful to know

- The knowledge students need for the exam is quite wide across all material areas but the depth is quite limited. This can feel overwhelming but it has its advantages, particularly as this allows much of this content to potentially be covered at KS3.
- Some questions are potentially more open ended and students can choose to answer from the perspective of their specialist material or from that of another material. This allows students to answer from a wider knowledge base if they wish.
- Multi choice questions are used in Section A and they often use common misconceptions as part of the answers making them more challenging than they might seem at first.
- This is the only exam board with a Section C focusing separately on designing and making. This section focuses more on product analysis and general concepts around designing and making that are relevant to all material areas.

Edexcel exam in more detail

Exam board	Length	Section A Core Technical Principles (broader understanding of D&T)	Section B Specialist Technical Principles (focusing on at least one material area)	Section C Designing and Making Principles
Edexcel	1hr 45	Mixture of different question styles, including open-response, graphical, calculation and extended-open-response questions. There will be 10 marks of calculation questions. 40 marks	Mixture of different question styles, including open-response, graphical, calculation and extended-open-response questions. There will be five marks of calculation. 60 marks	No separate section – this is integrated into other sections

Click on the name of the exam board to visit the D&T GCSE page on their website

Edexcel: Useful to know

- This board places more emphasis on the student's specialist material area in the exam than any other board. The depth of knowledge required is potentially deeper than other exam boards.
- Students sit completely separate papers depending on their material specialism. The beginning of each paper is the same core content but the second half of the paper has questions just on the student's specialist material area. Teachers will therefore have to submit the number and type of papers the school requires some time before the exam is sat. This differs from all other exam boards where there's only one exam paper and where students answer specialist questions by selecting different options they are given from within the paper.

Eduqas exam in more detail

Exam board	Length	Section A **Core Technical Principles** (broader understanding of D&T)	Section B **Specialist Technical Principles** (focusing on at least one material area)	Section C **Designing and Making Principles**
Eduqas	2hrs	A mix of short answer, structured and extended writing questions. Students answer all questions in this section. 75 marks	A mix of short answer, structured and extended writing questions. Students choose one set of questions to answer based on their specialist material area. 25 marks	No separate section – this is integrated into other sections.

Click on the name of the exam board to visit the D&T GCSE page on their website

Eduqas: Useful to know

- This board places more emphasis on core content that assesses broader knowledge in the exam than any other board. Although this means students will need to know more about a range of materials the depth of this knowledge is potentially limited meaning it may be possible to cover some of this content as part of KS3.
- There's still a focused specialist material area set of questions which are presented at the end of the paper. These are laid out as six Question number 6s, one labelled for each material area, and students select the Question 6 that is relevant to them. Each Question 6 has a range of questions to make up the 25 marks for this section. It will be important that students know which specialist material area set of questions they have to look for, and that they know that they only answer these questions rather than carrying on with questions in the rest of the booklet.

OCR exam in more detail

Exam board	Length	Section A **Core Technical Principles** (broader understanding of D&T)	Section B **Specialist Technical Principles** (focusing on at least one material area)	Section C **Designing and Making Principles**
OCR	2hrs	Three sets of wider questions that predominantly require learners to demonstrate their 'core' knowledge, however, there may be some questions that rely on learners ability to drawn on their 'in-depth' toolkit of knowledge. One extended response question. 55 marks	Predominantly assesses 'in-depth' knowledge via a product within a situational context in order to demonstrate deeper understanding of materials and/or systems and the developments and manufacture of prototypes and products in relation to their main area of learning. One extended response question. 45 marks	No separate section – this is integrated into other sections

Click on the name of the exam board to visit the D&T GCSE page on their website

OCR: Useful to know

- The knowledge students need for the exam is quite wide across all material areas but the depth is quite limited. This can feel overwhelming but it has its advantages, particularly as this allows much of this content to potentially be covered at KS3.
- Some questions potentially have more of an open-ended approach targeting knowledge common across all material areas with some questions allowing students to answer from the perspective of any material.
- There's a separate insert paper with photos and text relevant to some of the questions.
- As the specification is less specific on details this potentially gives students more flexibility with answers they give.
- The specification has a document mapping the maths content for GCSE against the OCR maths GCSE and this might support maths and D&T departments to work together to support students in both exams.

Technical Principles: Core content (1)

Below are the core principles set by the DfE on which all students are assessed in the core content questions at the beginning of all exam papers. This content includes learning from all material areas. All exam boards have to use these statements as a starting point but they decide on the approach, depth and specific detail.

- the impact of new and emerging technologies on industry, enterprise, sustainability, people, culture, society and the environment, production techniques and systems
- how the critical evaluation of new and emerging technologies informs design decisions; considering contemporary and potential future scenarios from different perspectives, such as ethics and the environment
- how energy is generated and stored in order to choose and use appropriate sources to make products and to power systems

To see the DfE Subject Content for the D&T GCSE visit https://goo.gl/cwIxzZ

Technical Principles: Core content (2)

- developments in modern and smart materials, composite materials and technical textiles
- how electronic systems provide functionality to products and processes, including sensors and control devices to respond to a variety of inputs, and devices to produce a range of outputs
- the use of programmable components to embed functionality into products in order to enhance and customise their operation
- the functions of mechanical devices, to produce different sorts of movement, changing the magnitude and direction of forces
- the categorisation of the types and properties of the following materials: papers and boards, natural and manufactured timber, ferrous and non-ferrous metals, thermoforming and thermosetting polymers, natural, synthetic, blended and mixed fibres, and woven, non-woven and knitted textiles

To see the DfE Subject Content for the D&T GCSE visit https://goo.gl/cwIxzZ

The core content

- All students are assessed on the core content in the specification. This learning is generally at KS3 level and could be included as part of the KS3 curriculum and then revised at GCSE, reducing time pressures at GCSE and embedding learning.
- Students are assessed on a range of materials as listed below but knowledge is restricted to types of materials, uses, and properties rather than them knowing how to manufacture products. Again this is at a basic level and could be part of the KS3 curriculum.

Papers & boards	Natural & manufactured timbers	Ferrous & non ferrous metals	Thermoforming & thermosetting polymers	Natural, synthetic, blended and mixed fibres, & woven, non-woven and knitted textiles

Note: although electronic systems and programmable components are not listed as a material they are listed separately as part of the core content that all students are assessed on.

The core content and KS3

- Does this question require in-depth knowledge?
- How might the learning and exam question be built into KS3? (Don't forget it isn't necessarily just about students answering the question but about them gaining the subskills of exam technique – see more on this later).

For each of the products shown, give a property of the material it is made from that makes the material suitable for the product. The first one has been done for you. (4)

Edexcel sample paper Q1

Description of product (image also shown on exam paper)	Property
A polystyrene cup	Good insulator of heat
A balsawood boat	
An aluminium paint tube	
An acrylic bath	
A fleece hat	

Technical Principles:
In relation to at least one material area (1)

As well as the core content, all student are assessed on the technical principles that the DfE sets out in relation to at least one material area. These are tested in the second half of the exam papers and students can choose to specialise in any material area. Note all points below are assessed even if they don't apply to all material areas. All exam boards have to use these statements as a starting point but they decide on the approach, depth and specific detail.

- the **sources, origins, physical and working properties of the material categories** or the components and systems, and their ecological and social footprint
- the way in which the **selection of materials or components** is influenced by a range of factors, such as functional, aesthetic, environmental, availability, cost, social, cultural and ethical

To see the DfE Subject Content for the D&T GCSE visit https://goo.gl/cwIxzZ

Technical Principles:
In relation to at least one material area (2)

- the **impact of forces and stresses** on materials and objects and the ways in which materials can be reinforced and stiffened
- **stock forms, types and sizes** in order to calculate and determine the quantity of materials or components required
- **alternative processes** that can be used to manufacture products to different scales of production
- **specialist techniques and processes** that can be used to shape, fabricate, construct and assemble a high quality prototype, including techniques such as wastage, addition, deforming and reforming, as appropriate to the materials and/or components being used
- **appropriate surface treatments and finishes** that can be applied for functional and aesthetic purposes

To see the DfE Subject Content for the D&T GCSE visit https://goo.gl/cwIxzZ

Choice of specialist material area

As well as core content that covers all material areas, students are assessed on an area they choose to specialise in. The choice of material areas are the same as those in the core content, with the addition of electronic systems and programmable components, which in the core content is listed separately, but which is listed as a specialist material area in this section.

Papers & boards	**Natural & manufactured timbers**	**Ferrous & non ferrous metals**	**Thermoforming & thermosetting polymers**	**Natural, synthetic, blended and mixed fibres, & woven, non-woven and knitted textiles**	**Electronic systems & programmable components**

AQA: Specialist material area

- The AQA exam paper often asks students to choose a product from a group of images or list of products and the questions that follow are about the student's chosen product.
- Students should become familiar with what the specialist material area questions might look like and where they will be in the exam paper.

Study the images here and choose <u>one</u> product.
Describe <u>two</u> features of your chosen product that make mass production appropriate.

[2 x 2 marks]

		
Card pizza packaging	Flat pack unit	Polymer kettle
		
Printed Circuit Board	Steel fan	Cotton towels

Edexcel: Specialist material area

- Edexcel places the most emphasis in the exam on the specialist material area and it's worth 60% of the marks.
- Students don't have to find their specialist material area as they receive an exam paper with the core content at the beginning (which is identical across all exam papers) and which has their specialist material questions at the end. The teacher informs the exam board how many of each exam paper will be needed beforehand. Although students don't need to search for their specialist material area they will need to make sure they sit the right exam paper.
- The specialist material area uses a lot of images to illustrate questions which emphasises the importance of product analysis activities before the exam.

Eduqas: Specialist material area

- Eduqas places the least emphasis in the exam on the specialist material area with 25% of the marks.
- The specialist material questions are at the end of Eduqas exam paper labeled as Question 6. There are six different Question 6s each with a different material heading. This may be confusing for some students especially as the headings for each section are quite small so students need to be aware where to find the section they need to answer.

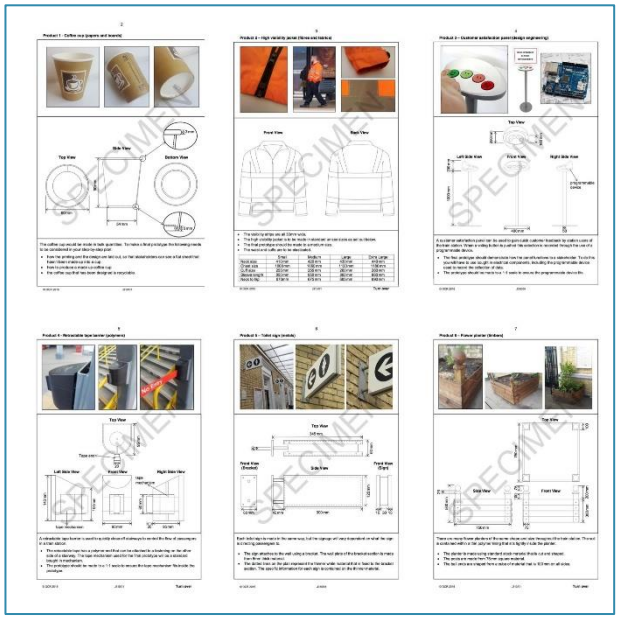
Section B
Answer one of the questions in this section

6. Electronic systems and mechanical devices
6. Papers and Boards
6. Natural and manufactured timber

6. Ferrous and non-ferrous metals
6. Thermosetting and thermoforming plastics
6. Fibres and textiles

OCR Specialist material area

- OCR use an eight-page insert booklet for the specialist material area in the exam with images and information on products for each specialist material area. Students should practice identifying the product relevant to their specialist material area as well as practising working with a separate document.
- Over time these documents will provide a useful set of product analysis resources.



OCR sample paper insert booklet

Designing and making principles

The Non-Exam Assessment assesses designing and making but this will also be assessed in the exam, both as part of the core content of the exam paper, as well as part of the specialist material area. Below is a summary of the types of focus areas that might be tested. The full statements can be seen in the the DfE Subject Content.

- Use of primary and secondary research
- User needs and wants
- The design process, design strategies and prototyping
- Impact of designing and manufacturing e.g. environmental, economic, social challenges
- The work of past and present professionals and companies
- Selection of materials and material management
- Manufacturing techniques, quality control and tolerances
- Tools and equipment

To see the DfE Subject Content for the D&T GCSE visit https://goo.gl/cwIxzZ

Designing and making principles

- It's important to make links between the NEA and the exam paper as designing and making questions in the exam are directly related to the design process students have followed as part of their NEA.
- The use of product analysis, along with links to the design process as the NEA folder and practical work is produced, are the most effective way of preparing students for assessment of designing and making in the exam. This might be done, for example, through the use of low stakes questions as starters and plenaries in NEA lessons.
- Most exam boards include these questions mixed in with other questions but AQA has a Section C that focuses specifically on this area (see next slide).

Designing and making principles: AQA approach

Most exam boards include designing and making questions mixed in with other questions but AQA has Section C that focuses specifically on this area.

These sound reducing headphones allow commuters to listen without disturbing other passengers.

Specification:

- **Features include: sealed and cushioned fit, choice of input jacks, Bluetooth connectivity**
- **Rainproof components**
- **Light in weight**
- **Range of colours**

Evaluate them in terms of their:

- Suitability for the user (4)
- Aesthetic qualities (4)
- Ergonomics (4)

Maths and science

- All exam papers MUST include a minimum of 15% assessing mathematical skills with a design and technology context (more on this later).
- The science element is covered though learning on, for example, materials, electronics, energy, smart and modern materials, new and emerging technologies, levers and mechanisms and forces and stresses. Many of these concepts link to the science curriculum and it may be relevant for departments to investigate potential links.

This sports training shirt has been made using a thermochromatic smart material. Explain why a thermochromic smart material has been used. (3)

Eduqas sample paper Q2a

Eight top tips for exam success

This section outlines eight top tips which might help students develop a successful approach to the written exam. The tips are not listed in any particular order and are guidance rather than a conclusive list.

Eight top tips for success in written exams

1. Develop a five-year curriculum using distributed practice strategies
2. Develop product analysis skills
3. Identify how the exam board thinks
4. Practice makes perfect
5. Develop higher order thinking skills
6. Develop notetaking and memory prompts
7. Link the exam to the Non-Exam Assessment
8. Develop self belief

The following slides gives more detail on each tip listed.

Top Tip 1

Develop a five-year curriculum using distributed practice strategies

Develop a five-year curriculum

- The GCSE specifications have been designed to follow on from KS3 and much of the learning for the core is tested at KS3 level and might be included in KS3 teaching.
- A five-year curriculum across Years 7-11 facilitates a ‘distributed practice’ approach which is an evidence based strategy where cramming for an exam is discouraged. Instead students develop effective learning habits that reduce stress, increase retention and improve performance. In particular this strategy helps student develop independent learning skills and the ability to apply knowledge in different contexts.
- For a short summary on distributed practice read this article from the TES. For more detailed information read the book by Daisy Christodoulou called Making Good Progress.
- The Learning Scientists website has some excellent free downloads on distributed practice.

A quick guide to distributed practice

The Learning Scientists website identifies the following six strategies for learning and exam preparation:

1. Spaced practice – study of a topic spaced out over time with regular learning reviews and going back to key elements in order to embed the knowledge and to identify links to other learning.
2. Retrieval practice – practising retrieving learning through regular targeted activities e.g. making cue card summaries, quick tests.
3. Elaboration – asking questions and make links and connections.
4. Interleaving – moving between ideas when studying, going back to idea done before and thereby making new links and connections.
5. Concrete examples – collecting real examples and sharing ideas with others.
6. Dual coding – Recording ideas in different ways, taking notes previously written and transferring them into a different format.

Distributed practice

Things to think about when planning a curriculum

- How can the KS3 and GCSE curriculum be mapped against each other so that learning progresses across the key stages?
- What are the key elements of learning in a module that need revisiting? How and when will these key elements be revisited both in the module and after the module is complete (including across all key stages)? Does a log need to be kept?
- What strategies and targeted activities will be used to develop retrieval skills?
- How can teacher questioning be used to develop elaboration skills? How can students develop their own questioning skills to help them make connections between learning?
- How can learning be planned so that interleaving takes place both across a module as well as across a range of modules?
- What concrete examples can the teacher give to help bring learning alive? How can students collect and log their own examples?
- How will students record learning? How can learning review time be built into modules of work?

KS3: Creating a basis for GCSE

- Do exam questions, especially in the core content, require in-depth knowledge?
- What learning might be built into KS3 and revised at GCSE?
- How might exam questions be added to KS3 schemes of learning e.g. through product analysis activities? (Don't forget it isn't necessarily just about students answering the question but about them gaining the subskills of exam technique – see more on this later.)

Which one of these is not a hardwood?

a. Ash
b. Oak
c. Pine
d. Mahogany

(1)

Top Tip 2

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Develop product analysis skills

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Product analysis

- The specifications for all exam boards focus on ’real world D&T’ and one of the best ways to do this is for students to experience a range of different products. In the Learning Scientist model this helps develop ‘concrete examples’.
- When looking at a product the following are examples of what students should be able to do e.g. be able to draw it, describe it, annotate it, analyse and evaluate it, think about how the materials are used and how it is made, compare it to others, justify decisions, develop the idea, substitute materials and techniques.
- There are are many different ways of doing product analysis activities. One method is to use the acronym WWWWWH which stands for who, what, where, when, why, and how. There is more information on this on the next slide.

Product analysis activity

Who	Who is the typical user? Who are the other stakeholders?
What	What is it used for? What problem does it solve? What are the needs of the users? What materials have been used? What techniques and finishes have been used?
Where	Where might it be used?
When	When might it be used?
Why	Why has it been designed and made the way it has? Why have the chosen materials and techniques be used?
How	How has it been manufactured? How does it compare to other similar products? How could it be improved?

These questions are examples only and are not a conclusive list.

Develop a product handling box

- Link the learning in as many lessons as possible back to a product to help give the learning a real context. Do this preferably with a real product or an image if this isn't possible.
- Get together a product handling box, along with materials and samples, and map them against the curriculum to think about how they might support learning.
- Make sure you include products made of a range of materials as well as products outside of those students will come across on a daily basis.

Use exam questions

Link exam questions from past papers to real products, as well as using these questions with other products in order for students to apply the same knowledge but in a different context.

In this case a department might have a real pizza box or an image to use with this question. What other products might your department collect in order to for students to answer this question but from a different context?

Give two reasons why manufacturers choose corrugated cardboard for pizza packaging (2)

Build product analysis into KS3

- Does this exam question require in depth knowledge?
- Could this learning be covered at KS3 and revised at GCSE?
- How might exam questions be added to KS3 schemes of learning?

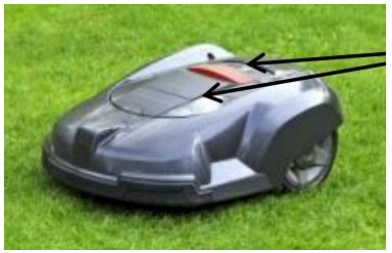
Features of a child's high chair are listed below. Join each feature to the correct description. One has been done for you. (3)

OCR Q1a

Padded seat	A part of the chair that provides extra comfort
Reinforced corners	A part of the chair that is made from sustainable material
Seat back	A part of the chair that has a function that helps with its storage
Fairtrade cotton straps	A part of the chair that adds extra strength
Folding legs	A part of the chair that is ergonomically designed

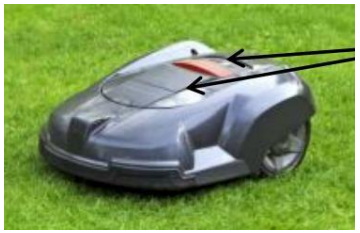
Transferring learning

- Many exam questions, especially in the core content section of the exam paper, cover learning that is relevant to many material areas. Students must develop the ability to transfer learning from one context to another. This can best be done through regular product analysis activities.
- For example, on the next slide, OCR uses the a lawnmower in an electronics question in the core content of the exam paper. The questions are assessing knowledge of inputs, outputs and electronic components. What other products might students look at, for example to show the same learning in a textiles based product?



Transferring learning

The lawnmower has a number of inputs and outputs in its circuits that sense obstacles in its path and allow it to move around them. The table below shows some of the functions of the robotic lawnmower. Complete the table with the missing inputs or outputs and electronic components. (4).

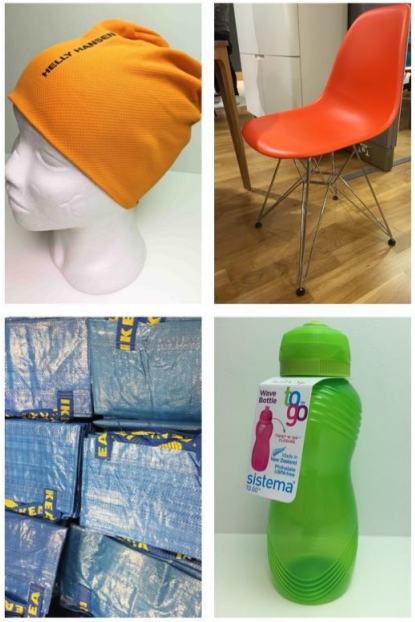


Function	Input or Output	Electronic component
Sensing obstacles		Push to make switch/infrared
Moving wheels	Output	Motor
Making a sound when it hits an obstacle	Output	
Warning light to show when the power level is low		
Triggers the mower to switch off it it topples over	Input	Tilt switch

OCR sample paper Q3a

Using products to link learning

Make links across material areas so students can see how their learning can be applied in different contexts



These products are all made out of polypropylene. The products or images might be shown when learning about thermoforming materials to help students make the link between plastics and textiles so that students can apply their knowledge in a different context.

What other examples can you collect to help students see links across material areas and other areas of learning?

Top Tip 3

Identify how the exam board thinks

How the exam board thinks

- Use exam board past papers to get an overview of patterns of questions e.g. in question styles, popular images used, the layout and wording of questions, the use of language, the number of marks
- Read the examiners' reports and mark schemes to get an overview of the styles of answers and the type of content required along with tips on what the exam board is looking for.
- Develop self-marking skills in students – if they were the examiner where would they allocate marks in a student answer?

Multiple choice questions

- Multiple choice questions only appear on AQA's exam paper.
- Although multiple choice questions may seem easy, care must be taken as answer choices usually include common misconceptions and nearly correct answers and students often answer without thinking about the question in detail.

Which of the following is resistant to corrosion?

a. Steel
b. Aluminium
c. Copper
d. Iron (1)

Short answer questions

- These types of questions are often worth 1-3 marks, with 2 being a popular mark range.
- Although they require a short answer it's important that students check they have secured all marks e.g. by giving additional detail and examples. Many students miss out on the second mark as they don't think about how the marks will be allocated. Developing self-marking skills will help with this.

Explain one disadvantage of relying on wind power to produce energy (2)

Eduqas sample paper Q1bi

Synoptic and extended answer questions

Synoptic and extended answer questions are the most challenging ones on the exam paper. They require a more detailed answer and can be worth up to 10 marks.

Questions often cover broader issues requiring students to bring together learning from a number of different areas. An essay type response with a coherent and logical argument is required with detailed analysis and examples. Students may find it useful to do a mini plan before answering the question.

A multi national company produces desk lamps to be sold in the UK.
The table shows information about the desk lamp.
Analyse the information in the table. Evaluate the desk lamp with reference to its ecological footprint. (9)

Edexcel sample paper Q8

Raw material	Bauxite
Material	Aluminium
Source of material	USA
Manufactured in	Taiwan
Power source	220-240AC
Wattage	40W

Product analysis questions

- All exam paper questions focus on ’real world D&T’ and they use a lot of examples of real world products. It’s therefore important that students experience seeing, handling and thinking about as many products across all material areas as possible. Remember this doesn’t mean they have to be able to make them apart from those products in the specialist material section of the exam paper.
  (See Tops Tips 2 section on product analysis for more information).

Think about the wording of the question

Many exam questions start with a sentence that ‘sets the scene’, as well as sometimes referring to an image. Students must take care to read the question carefully as often these sentences are not particularly related to the question. Students can fall into the trap of latching onto the content of the sentence, focusing on irrelevant words rather than answering the actual question.

It is important that designers consider the world we live in and the needs of future generations.
(this sets the scene but doesn’t impact on the question)

Evaluate how designers can lessen the impact on our environment when designing new textile products made from natural materials. (6) (this is the actual question)

Eduqas sample paper Q6d

Maths questions

- It's a DfE requirement that 15% of the exam assesses maths in relation to design and technology.
- Maths is tested at high end KS3 level.
- Questions can appear in any section of the paper and will be asked within an applied context.
- Calculators can be used in the exam.
- The maths in design and technology can be mapped against what is taught by your maths department as the content is related (OCR's specification does this for you). It would be useful to co-ordinate with your maths department to identify when design and technology related concepts are taught so that you can compliment this work in D&T lessons and vice versa.

Maths in design and technology

- Flag up maths on a regular basis to show how it is used all of the time in design and technology, e.g. with quick starters and plenaries, along with pointing out the maths as it happens in lessons, particularly during practical work where maths is a natural part of many elements of the design process.
- It's important the layout of student answers are in line with how maths questions are marked, e.g. students should show their working out. Use the mark scheme to help with this. Your maths department should also be able to provide you with appropriate past questions and mark schemes that illustrate how maths answers should be laid out.

If the earphones are priced at £17.50, calculate how much profit is made if 80 sets are sold. (Show all workings.) **[2]**

The profit per earphone is 15%.

Therefore the profit for one set of ear phones would be 15% of £17.5.

$\frac{15}{100}$ **x 17.5 = £2.62** **1 mark**

80 x 2.62 Total profit would be £209.60 **1 mark**

Eduqas sample paper Q5dii

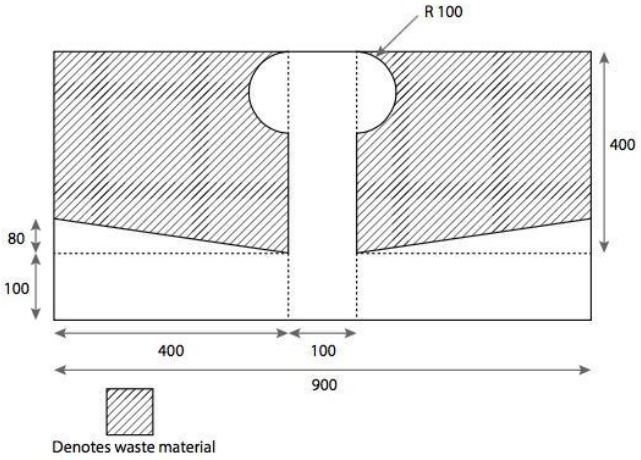
Arithmetic and numerical computation

Examples related to D&T might include:

- Calculating quantities of materials, costs and sizes.
- Using ratios, fractions and percentages to scale drawings or analyse responses in a table.
- Calculating areas and volumes to calculate quantities.

Figure 17 shows an aluminium sheet that is fitted over the front of the go-kart frame.

Calculate how much aluminium sheet is wasted from the whole piece, in cm2.



All measurements are in mm
R = radius

Give your answer to 2 decimal places.
Area of a circle = π × r^2
Area of a triangle = ½ × base × height
Use π = 3.142

(5)

Edexcel sample paper Q7c

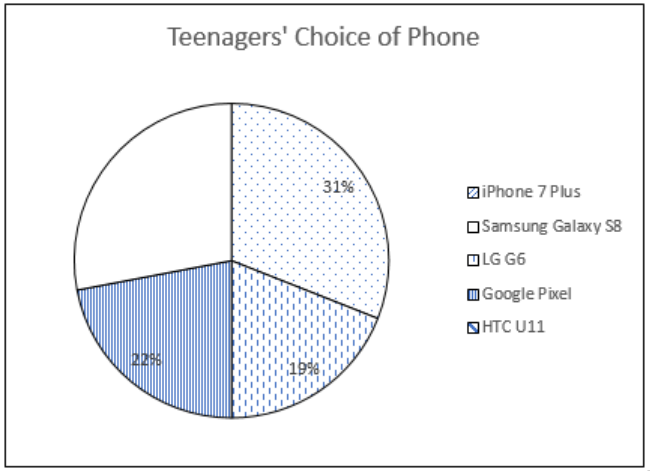
Handling data

Examples related to D&T might include:

- Presenting data in diagrams, bar charts and histograms, for example to present information on decisions, or to create and interpret frequency tables.

Using the information from the table, complete the pie chart showing the percentages of teenagers' choice of phone. Show your calculations. [2 marks]

Choice of Phone	Percentage %	Number of teenagers
iPhone 7 Plus		40
Samsung Galaxy S8	31%	62
LG G6	19%	38
Google Pixel	22%	44
HTC U11		16
	100	**200**



Graphs

Examples related to D&T might include:

- Plotting, drawing and interpreting graphs, for example analysing survey responses.
- Translating information between graphical and numerical form e.g. using technical specifications.

(c) Figure 9 shows a graph of the approximate number of people employed in solar-power-related industries between 2012 and 2016.

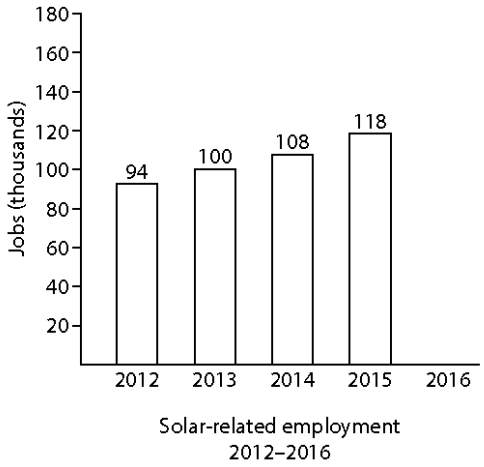


Figure 9

Analyse the graph. Calculate the expected increase in the number of people employed in solar-power related industries in 2016, based on the current trend. (1)

Edexcel sample paper Q4c

Geometry and trigonometry

Examples related to D&T might include:

- Using and measuring angles to measure, mark out and create tessellated patterns.
- Visualising and representing 2D and 3D forms through drawings.

Fig. 2 shows an isosceles triangle that is formed from the floor when the chair legs are fully opened.

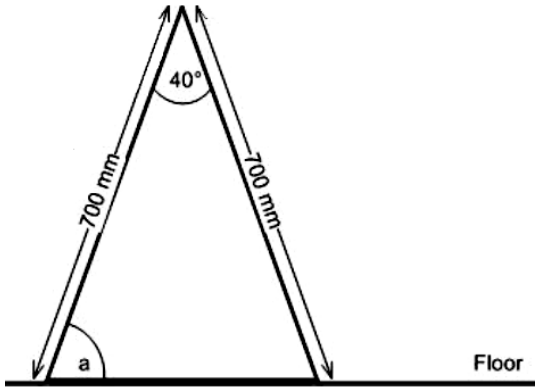


Fig. 2

Calculate angle a.

OCR sample paper Q1d

Top Tip 4

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Practice makes perfect

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Practice makes perfect

- Use the exam board past papers to practice answering questions. Some of these can be marked by the teacher but it's also important that students experience marking their own answers, as well as doing peer marking exercises, using the exam board mark schemes and examiner's reports. This helps students get a better understanding and ownership of their weaknesses, along with helping them pick up tips on what the exam board is looking for.
- Remember that as part of the distributed practice model, low and high stakes practice testing should be spaced out over time, rather than only being crammed in just before an exam. Low stakes testing should be quick and have an element of fun to it whereas high stakes testing will be more like the real exam. Both types of testing should be used in a diagnostic way.

Practice makes perfect

- Get past papers back from the exam board for key students e.g. ones who did particularly well, as well as ones who got average and low grades. Use these to review how the exam board actually marks in practice.
- Consider becoming an examiner for at least a year as this is the best way to learn what the exam board is looking for when marking.
- Use data on the exam board secure areas to analyse areas where your students do better or worse than other students nationally as this will help you identify areas you could teach more effectively.

Developing subskills

- Although doing practice papers and questions is important it's just as important to focus on the subskills required to be successful in an exam.
- Subskills are what you get when you break down success in an exam paper, or a particular type of question, into all of its component parts.
- Practising individual subskills in isolation means the teacher can focus on each skill until the student has perfected it. It's also easier to control the learning and assessment of these subskills and it can feel less overwhelming for students with more low stakes testing.
- Once students are more skilled at the subskills of sitting an exam, and of answering particular types of individual questions, they are less likely to feel overwhelmed when approaching the full exam paper.

Subskills: Technical vocabulary

- This is an important subskill as students must be able to use technical vocabulary, particularly in order to access higher grades.
- Keeping a glossary of key words and definitions can be a useful way of doing this. A key word keyring is also a way of pulling together key words and definitions.
- Activities where students have to regularly use notes and diagrams to describe and explain concepts are another good way of developing technical vocabulary.

Examples of subskills

- Getting used to seeing exam questions and having strategies to stay calm.
- Writing in a short time frame in a legible way with good grammar and spelling.
- Linking the writing timescale to the number of marks (approximately a mark per minute which leaves spare time for checking, reading, planning etc.)
- Identifying exactly what the question is asking.
- Avoiding just repeating the question in the answer (which can fill up space and make students think they have finished answering the question).
- Developing self marking skills.
- Reading the whole paper before starting to write to get an overview.
- Reading questions and picking out key words, command words and qualifiers (this will be dealt with in more detail later).

More examples of subskills

- Using the number of marks to guide how detailed an answer should be e.g. 1 mark per point made.
- Skills in planning an answer e.g. as a mind-map.
- Using strategies such as PEE (point, explanation, example) to structure more detailed answers.
- Activities identifying images as well as sketching images relating to keywords.
- Avoiding ‘stock answers’ which give vague information without detail and justification e.g. quicker, neater, quality, cheap, better, value for money. This type of wording is often flagged up in the mark scheme so build a list based on the specific exam board.
- Being able to ask questions as well as answer them (more on this later).

Don’t just answer questions…

Practising questions doesn’t have to mean just answering them and getting them marked. These activities will also help to develop subskills in answering questions:

- Collect similar questions.
- Highlight the keywords in the question.
- Collect images relevant to the question.
- Mind-map ideas and thoughts around the question.
- Discuss the question with others and pool ideas.
- Start with the exam board answer e.g. what could the question be? Mind-map the exam board answer around the question to understand their thinking.
- Review an example answer by a student e.g. what could the question be? Mind-map the answer around the question then compare the answer to the mark scheme.

Top Tip 5

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Develop higher order thinking skills

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Higher order thinking skills

- Learning works best when students understand a little bit about how metacognition and higher order thinking works and how they can best maximise their potential. This links to the distributed practice model in that if students understand strategies like spaced and retrieval practice it helps make learning both more manageable and more successful and and students are more likely to engage with it.
- It's important that students feel in control of the learning and revision process rather than seeing it as something that is 'done' to them and understanding metacognition and thinking skills can do this.
- It can also help students if they understand the purpose of exams and that to some extent they need to learn 'how to play the game' rather than them just needing to be super intelligent.

Using taxonomies

- There are a number of taxonomies that can be used to help students ‘structure’ their thinking. These help students ‘decode’ the process of learning enabling them to move away from a fixed mindset approach to a growth mindset where they recognise they can develop the skills necessary to be successful.
- Taxonomies also help students ask questions. This is an important part of the distributed practice process and in particular helps students develop retrieval and elaboration skills.
- Taxonomies that might be used include Bloom’s Taxonomy, De Bono’s Thinking Hats, Socratic Thinking and Solo Taxonomy. Information on all of these taxonomies can be found through internet searches but here we will focus on the use of Bloom’s Taxonomy as this is regularly used to structure exam questions.

Bloom's Taxonomy

Bloom identified six levels of learning and these were later adapted.

Knowledge based questions are said to be the easiest with evaluation based questions being the hardest.

The taxonomy can be used to to ensure differentiated levels of challenge are used.

Bloom's Original Model	Anderson & Krathwohl Adapted Model
Knowledge	Remembering
Comprehension	Understanding
Application	Applying
Analysis	Analysing
Synthesis	Evaluating
Evaluation	Creating

For a detailed explanation of the original Bloom's Taxonomy along with examples visit https://mikegershon.com/?p=7

Bloom's Taxonomy and command words

- Exam boards use Bloom's Taxonomy when creating questions. They often call these 'command words'.
- Being able to read a question and pick out key command words is essential to success in an exam. Introducing students to Bloom's Taxonomy helps them understand why certain command words have been chosen when writing questions. It can help also indicate to students what type of answer is expected.
- Students can also use Bloom's Taxonomy to create their own questions as practising creating questions helps students read and understand questions better.
- As well as the ones listed in the previous slide most of the exam boards list other command words in their specifications and textbooks.
- A useful and quick subskill activity is for students to regularly identify command words in a question, explaining what they mean, along with students writing their own questions for each other using command words.

Examples of Bloom's Taxonomy in an exam

Knowledge based questions – these types of questions often require short one or two word factual answers. They are usually worth 1 or 2 marks.

Anthropometric data is used when designing products. Give two pieces of anthropometric data that the designer of a child's high chair would need to know. (2)

OCR sample paper Q1ei

Go-karts are four-wheeled vehicles used for motorsport, fun and entertainment. Give one method of increasing the strength of the frame of the go-kart. (1)

Edexcel sample paper Q7a

These examples use the original Bloom's Taxonomy model but the more recent Anderson and Krathwohl model could also be used.

Examples of Bloom's Taxonomy in an exam

Comprehension based questions – these types of questions usually require slightly longer answers with more detail or examples. They are usually worth 2 or 3 marks (with the 3rd mark usually for an additional point or reason).

Explain one disadvantage of relying on wind power to produce energy. (2)

Eduqas sample paper Q1bi

Describe two ways in which paper products or materials can be strengthened or reinforced. Give examples in your answer. (2x2)

These examples use the original Bloom's Taxonomy model but the more recent Anderson and Krathwohl model could also be used.

Examples of Bloom's Taxonomy in an exam

Application based questions – these types of questions are often ones that require a description of a process using notes and diagrams. Practising doing technical drawings of processes, along with annotation, is important to the success of this type of question.

Piping has been added to the strap of a school bag. Use notes and/or sketches to show the process of constructing and inserting the piping onto the strap of the school bag. (4)

Edexcel sample paper Q6b

These examples use the original Bloom's Taxonomy model but the more recent Anderson and Krathwohl model could also be used.

Examples of Bloom's Taxonomy in an exam

Analysis based questions – these types of questions usually require students to consider something, often by comparing it with something else or by having to justify something.

Analyse the impact that recent developments in materials technology has had on a specific name household product. (2)

Eduqas sample paper Q2d

These examples use the original Bloom's Taxonomy model but the more recent Anderson and Krathwohl model could also be used.

Examples of Bloom's Taxonomy in an exam

Synthesis based questions – these types of questions are very challenging and usually require students to think in different ways e.g. creating or modifying a design or writing a plan. They are often worth many marks.

Designers make prototypes to show their designs to key stakeholders. Study and use the images and technical information about your chosen product given on the insert. Produce a step by step plan to explain the stages that you would take if you were making a final prototype of your chosen product in a school workshop (12)

OCR sample paper Q5a

These examples use the original Bloom's Taxonomy model but the more recent Anderson and Krathwohl model could also be used.

Examples of Bloom's Taxonomy in an exam

Evaluation based questions – these types of questions are usually extended response open-ended questions that are challenging. They require detailed justified answers with examples, as well as strong arguments and conclusions. Good organisation of the answer is also usually important to success.

Evaluate the importance of using anthropometric data when designing. To support your answer, refer to products, other than the high chair (mentioned in previous question), that you are familiar with. (8)

OCR sample paper Q1eii

These examples use the original Bloom's Taxonomy model but the more recent Anderson and Krathwohl model could also be used.

Qualifying words

- As well as command words students need to understand any qualifying words in a question e.g. a specific number being referred to, such as ‘two examples’ or words such as ‘only’ or ‘exactly’.
- This is a useful subskill to practice with low stakes testing as it is a common mistake that students only give one example of something when more are asked for in the question.
- Where numbers are stated they are often in bold and the space for the answer is sometimes broken down into ‘a, b’ or ‘i, ii’ etc.

State **two** properties of steel that make it suitable for kitchen equipment (2)

Using connectives

Many of the command words and qualifiers require more depth, detail and examples in an answer. It can be useful for students to know a range of connectives to use in sentences and with regular practice these will help students automatically add additional depth to their answers.

And	For example	But	Because
Consequently	Therefore	Despite this	Next
As shown by	As a result	On the other hand	Afterwards
By contrast	However	In addition	Most importantly

Banded marking

- Exam boards use banding when marking higher mark questions that require a more extended answer. The banding helps distinguish between the different levels of answer.
- Students should do self marking exercises using the banded information in the mark schemes. In particular this helps students understand that it isn't always more information that is needed to get a higher marker but more analysis and examples related to what they have already written.

Band descriptors and mark allocations

	AO3 2a 5 marks	
BAND 3	A coherent answer demonstrating detailed, relevant knowledge and understanding, to analyse the benefits for a third world country of supplying parts of the car park barrier system. There will be evidence of relevant examples and a well-developed logical chain of reasoning, sustained throughout.	**4-5**
BAND 2	Answer has some coherence, demonstrating partial knowledge and understanding, to analyse the benefits for a third world country of supplying parts of the car park barrier system. There will be some evidence of mostly relevant examples and a logical chain of reasoning, but this may not be sustained throughout.	**2-3**
BAND 1	Answer demonstrates only basic knowledge and understanding, to analyse the benefits for a third world country of supplying parts of the car park barrier system. There will be limited evidence of relevant examples or a logical chain of reasoning.	**1**
	Award 0 marks for incorrect or irrelevant answers	

Eduqas sample paper Q6c

Top Tip 6

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Develop notetaking and memory prompts

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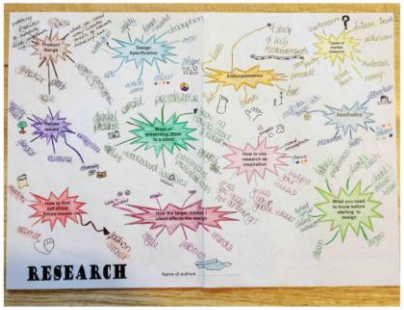
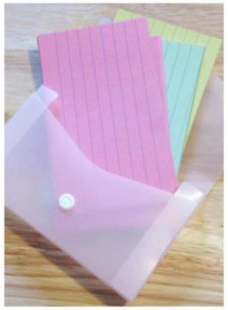
Notetaking and memory prompts

- It's useful to get students to identify memory prompts they can attach learning to. This could be an image, notes or an activity that helps them recall the learning. This can help them develop their retrieval skills.
- Students can also attach memory prompts linked to things in the exam room they will be in on the day. If they are able to sit in the room before hand they can identify prompts especially linked to learning they find difficult e.g. when I look at the clock I will think of…
- Displays in the classroom can also act as useful memory prompts that students can visualise when they are in the exam room so consider what you display and how you get students to interact with them.

Notetaking

- Students should revisit their notes regularly and review them (not just at revision time). This is part of spaced practice in the distributed learning model and time for this should be planned into the curriculum.
- Dual coding activities are useful when doing reviewing activities e.g. picking out key words and adding them to a key word keyring, creating a summary chart of key points. This act of transferring learning from one format to another is a useful way to embed learning and to develop retrieval skills.





Active learning

Develop memory prompts through active learning e.g.

- Putting sticky notes on foreheads with key words and students have to guess the word from the clues given
- Hands-on making activities related to key learning e.g. batch production
- Pass the parcel with questions in each layer
- Writing songs and poems summarising key learning
- Quizzes
- Games, e.g. Find the Fib

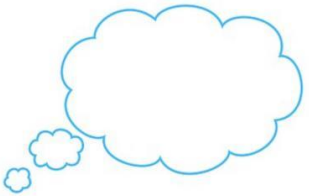
Find the Fib
Cotton is a synthetic fibre
Cotton grows on plants
Cotton is often blended with polyester

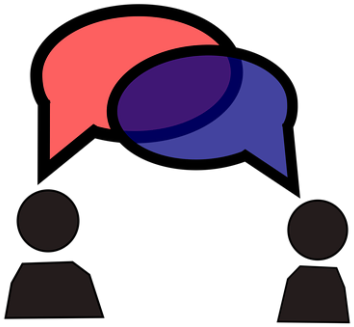
Mnemonics

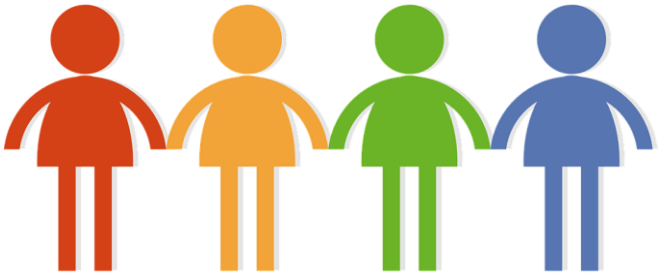
- A mnemonic is like a code you use to help you remember a number of facts or key words. It can be a word, sentence or song where key elements remind you of things you want to remember. Often a word is used and each letter stands for something that needs to be remembered.
- Richard of York Gave Battle In Vain is a famous mnemonic for remembering the colours of the rainbow (ROY G BIV is another one).

Think, Pair, Share

- Think, Pair, Share is an active way of working both on your own and with a group to think about something. It develops individual thinking skills as well as supporting students to learn from others.
- When posed with a problem students initially get time to think on their own. They then pair up and share ideas. They then get together as a group of four to pool ideas together.







Top Tip 7

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Link the exam to the non-exam assessment

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Link the exam to the non-exam assessment

- The designing and making principles are assessed in the non-exam assessment but this area is also included in the exam so it's important to make links between the design process and the exam paper.
- As students produce their non-exam assessment use this as an opportunity to flag up learning linked to the exam e.g. this question comparing costs of materials might be useful when students are considering materials and their costs as part of their development work.

You have been asked to make 15 hooks out of either aluminium or mild steel. Each hook is 210mm long and you need to allow 3mm for cutting / waste.

Use the information in the table to calculate the difference in materials costs of producing 15 hooks in aluminium or mild steel, using the readily available lengths of bar shown in the table. (Show all workings.) [5]

Material	Length of bar	Cost of bar
Aluminium	1m	£5.10
Mild Steel	2m	£3.80

Eduqas sample paper Ferrous and non-ferrous metals 6b

Top Tip 8

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Develop self belief

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Develop self belief

- Although doesn't require learning and revision it's just as important as all the others. It's important students believe they can be successful as otherwise they will have no incentive to work hard.
- Help students visualise success and develop a growth mindset.
- Encourage them to see time spent learning as an 'investment' in their future – a bit like saving money in a piggy bank.
- Demonstrate strategies that reduce stress and anxiety.

Further advice and support from exam boards

AQA

https://www.aqa.org.uk/contact-us

OCR

https://www.ocr.org.uk/

Pearson

https://qualifications.pearson.com/en/contact-us.html

WJEC Eduqas

info@eduqas.co.uk

Advance information is not applicable to CCEA

Please refer to https://ccea.org.uk/ for CCEA arrangements

Hampshire Services
HIAS SCHOOL IMPROVEMENT

Design and Technology

sarah.pook2@hants.gov.uk

For further details on the full range of services available please contact us using the following email:

htlcdev@hants.gov.uk

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Upcoming courses

Keep up-to-date with our learning opportunities for each subject through our Upcoming Course pages linked below. To browse the full catalogue of learning offers, visit our new Learning Zone. Full details of how to access the site to make a booking are provided here.

- English
- Maths
- Science
- Geography
- RE
- History
- Leadership
- Computing
- Art
- D&T
- Assessment
- Support Staff
- SEN