EDEXCEL GCSE Product design Revision guide

So, your coursework is worth 60% which leaves the remaining 40% for the written exam paper.

Everyone sits the SAME paper. SO it is crucial you revise thoroughly as there will be some tough questions on here. Likewise, it is important you do your best in the coursework to give yourself the best chance of getting a good grade in the summer.

Remember..... We are NOT setting you up to fail. But you MUST work hard .

This guide has been written to help you prepare for your exam, but you must revise thoroughly so the paper doesn't shock or freak you out!

You should be well prepared for your exam. SO read this guide carefully, it is full of hints and tips along with the subject content you need

What's in-

- Hints and tips for revision
- Exam paper content
- Revision topics
- Useful websites
- Revision books
- Key words

Another ETH publication to help YOU

SUCCESS is getting what you want. HAPPINESS is wanting what you get. DALE CARNEGIE AND OTHER QUOTES



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REVISION TIPS: The Approach

- If you feel it will help you, set a revision timetable, revising certain subjects at certain times.
- If you feel the need for silence while revising, try to make this possible.
- If you like to work to music, get some headphones and listen to your favourite album whilst you work. Try to listen to something that is familiar and "one of your favourites" - this will help to put you in a positive frame of mind during your revision - it can also reduce the risk of distraction, under the right circumstances.
- Maybe listen to the same music each time you revise for that subject, your brain will start to associate that artist with the subject content. (if you can, avoid any-thing with a banging beat..... A 4 beat tempo is good to stabilise your heart rate whilst revising...it keeps you calmer!)
- Make sure you have a break from revision try to arrange things so that you
 have a "day off" revising. This will mean when you re-start your revision, you will
 be a little fresher.
- Try to revise one section of notes, or one set of topics together.
- If you have trouble with specific details of topics, at least try to understand the
 topic generally and try not to get too bogged down with details. If you just
 choose to "ignore" topics, you may be limiting your options too much when it
 comes to answering questions try to gain a broad understanding, as this is often sufficient to answer most or part of a question. (Quite often, details are
 supplied anyway you just have to tie them together.)

In a nutshell.....

- Preparation in the
- keyThe earlier your
- start to revise the better
 Listen to music,
- nothing too heavy

Revising **isn't** something that should be **challenging** or **difficult** at all. What revising is, unfortunately, is time consuming. **It takes a while**. That's why you might like to **start early** (nothing to do on a Sunday?!)....

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REVISION TIPS: TECHNIQUES

Try to develop your own technique for revision. Different techniques work for different people and depending on the type of subject being revised, some techniques are more suitable than others. Here are some:-

- Read and Memorise.
- Summary notes short version of main notes.
- List of keywords for each topic covered, which can act as "triggers" for other ideas.
- Some kind of diagrammatic representation of notes can be helpful.
- Revise with a friend if possible, exchange ideas during revision this can be very helpful to both people in understanding topics and building confidence.
- Questions and Answers get a friend to ask you specific questions about topics and think up questions to ask your friend. This will test and help to build your own understanding.
- Make up a set of revision cards with one main topic per card, each topic listing
 ideas or information for this topic. You can carry these cards with you and, if you
 choose, get them out and revise whilst a passenger in a car or on the bus or train,
 or when queuing somewhere.
- If possible, ask your teacher or tutor to revise topics you are unsure about and try to get the tutor to help you to fully understand the topic.

In a nutshell.....

- Revision cards work!
- Make your revision interesting to look at, add colour and highlight key elements

You hit home runs, not by chance but by preparation

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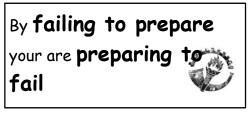
REVISION TIPS: PREPARATION

 Try not to treat the exam as anything other than a normal school or college day, other than that you are doing an exam.

- Try to follow your normal routine as this will help you relax.
- Try to think that at least after the exam, you can relax and won't have to do any further revision - this will help you relax before the event too.
- Get a good night's sleep do not stay up till "all hours" revising unless you feel this is vital. A final review of topics and a review of your "strong" and "weaker" areas would be best.
- Take sufficient pens / pencil, rubber ruler etc. Try to use the same pens etc. as you would normally use in class as this too, can be a small psychological booster - just use new pens for "spares".
- Take a wristwatch or small traveller's clock make sure any alarms / hourly chimes are disabled.
- Attend your subject warm up session before the exam. Your teacher will tell you when this is, where and what time
- Relax!

In a nutshell.....

- Keep a sense of normality
- Have a good
 breakfast
- Get an early night
- Keep hydrated-



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REVISI TIPS YOUR EXAM

Make your way slowly to your position and sit yourself comfortably. You will be sat in candidate number order. Check the exams board in main reception to find your location.

> AC=Assessment Centre CH=Concert Hall STC=Staff Training Centre

- Make sure you listen very carefully to instructions that are given • or any announcements that are made. If anything is unclear, ask questions before you start as this may save you a great deal of time later.
- Set out your pens / pencils etc. and set up your clock or wrist-• watch so that you can see it just by looking up and not having to move anything out of the way.
- Turn off mobile phones and hand it in at the front. Or just leave it at home!
- Make sure that you have everything necessary question paper, answer papers, additional sheets etc. Ask the invigilator if something appears to be missing.

In a nutshell.....

- Have a bottle of water on your desk
- Equipment should be in a clear bag/pencil case
- Hand in mobile

Once in the venue, you must

NOT communicate in any way with another candidate. This may result in you being removed from the exam. You will NOT be all lowed to resit it



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REVISION TIPS: DURING YOUR EXAM

- Read all the paper and all the instructions carefully in your product design paper, you will be expected to answer ALL the questions.
- Speed Read" the paper to get an idea of what questions are in it but then...
- Read each question carefully and thoroughly and make sure you understand what it is asking. Read all parts of the question before deciding whether or not to answer it. Underline key words in the question. This will help you answer them.
- Try to write neatly and clearly.
- Relax as much as possible and try to think clearly and keep confident.
- In a given question, concentrate of what you do know rather than what you don't know.
- Use what you know to maximum effect, but remember to ANSWER THE QUESTION.
- Do the questions you feel most confident about first (it rarely matters which order you answer questions in). This will help to build your confidence and you may find yourself remembering more things.
- Sometimes, intense thought whilst answering a question can facilitate understanding. If you find this happening, try to use it to maximum effect.
- Keep thinking positive and do the best you can. Just answer as much as you can.
- If, after reading a question, you genuinely feel it is ambiguous or too broadly based, state this in the first part of your answer and explain briefly your reason for trying to answer a question in a particular way. The examiner will then have a better chance of empathising with your answer.
- Answer the question.

In a nutshell.....

- Read the paper first
- Answer all the questions
 fully





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REVISION TIPS: Your exam...

- The GCSE Product Design paper is **2** hours long. Everyone sits the same paper
- There are 120 marks on offer
- You will be given a pre release theme sheet before the exam. It usually available after March 1 in the year of the examination
- Your paper is divided into 2 sections.
- Section A is designing worth approximately 30 marks
- Section B covers the rest of the specification and is worth approximately 90 marks
- You are to answer ALL the questions on the paper

What do you need to take into the exam with you?

- Pens
- Pencils
- Pencil Crayons
- Ruler
- Rubber
- Pencil Sharpener

In a nutshell.....

- Read the paper
 - Have pencils
- and pens ready
- Use pencil crayon to add colour

RELAX.....



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REVISION TIPS: ANSWERING THE QUESTIONS

Give/State/Name (1 mark)

Normally a one-word or two-word answer, at the very most a sentence. eg Give the name of the symbol below. This will result in only one correct answer. The mark scheme lists the single answer with the mark allocation being a single mark. eg Give two reasons ______.

The mark scheme will give a number of possible reasons. The mark allocation would be 2 x 1 (2answers, 1 mark for each answer).

Exactly the same style should be adopted for State, Name etc.

eg Name a specific item ...

This requires students to give a specific item. Generic answers such as wood or plastic would gain no marks. These type of questions will usually appear at the beginning of the paper or question part and are designing to ease you into the question with a simple statement or short phrase.

Describe/Outline (2 + Marks)

A higher level of response than GIVE/STATE/NAME.

Normally requires a statement or account of something, consisting of one or two sentences making reference to a number of points.

Allocation of marks is normally at least 2 (1 mark for each point accounted for). If more points are required in the description, then mark allocation is increased accordingly. These type of questions are quite straightforward. They will ask you to simply describe something in detail. Some questions may also ask you to use notes and sketches therefore, you can gain marks with the use of a clearly labelled sketch.

Explain/Justify (2 + Marks)

A higher level response than DE.SCRIBE. Normally requires a clear or detailed account of something which normally includes justification, reasons or examples.

Allocation of marks is normally at least 2 (1 mark for each point with justification). If more points are required to be justified, then mark allocation is increased accordingly. eg Explain how

Normally the mark scheme will give a number of key points expected in the answer with a

statement such as '1 mark for each key point'.

This is exactly the same procedure for such instructions as describe, discuss, evaluate etc. These type of questions are asking you to respond in detail to the question. No short phrases will be acceptable here. Instead, you will have to make a valid point and develop/justify it to gain full marks.

Evaluate/Discuss/Compare (+ + Marks)

These type of questions are designed to stretch and challenge you.

They will always be awarded the most amount of marks because they require you to make a well balanced argument, usually involving both advantages and disadvantages.

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Materials and Components

Candidates should have a knowledge and understanding of the processes and techniques which aid manufacture and of the commercial and industrial applications of a range of materials involved in manufacturing their products in quantity. It is expected that designing and making will address complete product issues and therefore deal with materials which would aid manufacture, such as moulds, cutting dies, printing blocks, jigs etc. as well as dealing with issues such as labelling, packaging etc. It will be important therefore that candidates can utilise a variety of suitable materials and components.

Whilst undertaking product analysis activities, it is expected that candidates will make detailed references to the materials used as well as the associated manufacturing issues.

Classification and working properties of materials

The following materials and components are considered to be suitable for candidates following this course of study. Candidates are not required to study all materials, but centres must provide opportunities for candidates to learn about a range of materials and to use them in practical contexts, during both the development and manufacture of products and during product analysis. As a minimum, candidates should study Paper/Card and one other material area. Those studying the electronic and control components are strongly advised to also study one other material area in addition to paper/Card.

Candidates may employ/use any necessary materials in the modelling, prototyping or manufacture of their products.

Candidates will be required to demonstrate their application of knowledge, understanding and skills in both assessment units.

Health and Safety factors should be a major consideration when working with any of the materials.

Paper/card

When working with paper/card materials candidates should:

- be able to identify common papers such as layout, cartridge, tracing, grid, card, corrugated card, duplex board, solid white board, foam core board;
- understand the different properties and uses of such materials both as a media for communication and as a material for manufacturing products such as packaging;
- understand the availability of common components e.g. to fasten, seal, hang, pour, join, bind, index;
- understand that many paper based boards are laminated to other materials and that the composition can be adjusted to create different properties for specific purposes e.g. foil-backed for food packaging;
- understand the stock forms for paper/card materials i.e. size, thickness, weight and colour;
- have a basic understanding of the source of pulp and the primary processes involved in conversion to workable materials.

Timber based materials

When working with timber based materials candidates should:

- be able to identify common timbers such as pine, mahogany, teak, ash, beech used in the manufacture of products
- be able to identify common manufactured boards i.e. MDF, plywood, chipboard, blockboard, hardboard;
- understand the different properties and uses of such materials within commercial products;
- understand that many timber-based materials are manufactured therefore the composition can be adjusted to create different properties for specific purposes;
- understand the stock forms for timber based materials i.e. rough sawn, PSE, sheet sizes and mouldings;
- have a basic understanding of the source of timber and the primary processes involved in conversion to workable materials.

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Ferrous and non ferrous metals

When working with metals candidates should:

- be able to identify common metals i.e. silver,
- stainless steel, mild steel, cast iron, brass, copper, zinc, aluminium, pewter; understand the different properties and uses of
- such materials within engineering and domestic products;
- understand that many metals are alloys or have coated finishes therefore the composition can be adjusted to create different properties for specific purposes e.g. casting alloys, plated metals;
- understand that the properties of metal can be changed by heat treatment;
- have an understanding of the stock forms for metals i.e. sheet, rod, bar, tube;
- have a basic understanding of the source of metals and the primary processes involved in conversion to workable materials.

Plastics

When working with plastic materials candidates should:

- be able to identify common thermoplastics i.e. high impact polystyrene, expanded polystyrene, acrylic, acetate, HDPE, PVC, PET;
- be able to identify common thermosetting plastics i.e. GRP, Epoxy resin, UF, MF;
- understand the difference between thermoplastics and thermosetting plastics;
- understand the ways in which plastics can be formed, especially with regard to consumer products, i.e. vacuum forming, injection moulding, blow moulding, line bending, compression moulding, extrusion;
- understand that most plastics are synthetic and that the composition can be adjusted to create different properties for specific purposes e.g. increase rigidity, reduce weight, insulation;
- understand the stock forms for plastic materials i.e. sheet, rod, powder, granules, foam;
- have a basic understanding of the source of plastics and the primary processes involved in conversion to workable materials.

Ceramics

When working with ceramic materials candidates should:

- be able to identify common clays and related materials such as St Thomas', porcelain, plaster of Paris, concrete, glass;
- understand that firing methods and temperatures affect both the material structure and the effect of applied glazes;
- understand the different properties and uses of such materials particularly with regard to domestic pottery and the electrical industry;
- understand that most ceramic products are combinations of clay and glaze and that the composition can be adjusted to create different properties for specific purposes
- understand the stock forms for such materials i.e. slip, body, pigments, oxides;
- have a basic understanding of the source of ceramic materials and the primary processes involved in conversion to workable materials.

Textiles

When working with textile materials candidates should:

- be able to identify common natural and synthetic fibres such as cotton, wool, sik, linen, polyester, Polyamide (nylon), Tactel, acrylic, elastane (Lycra);
- understand the difference between woven, knitted and bonded fabrics and the different properties and uses of such fabrics;
- understand the stock forms for yarns and fabrics i.e. fabric roll size, weight, ply;
- understand that many textile fabrics are mixtures or blends of different fibres and that the composition can be adjusted to create different properties for specific purposes;
- have a basic understanding of the source of textile fibres and the primary processes involved in conversion to workable materials.

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Food

- When working with food materials candidates should:
- be able to classify food materials as starch, sugar, protein, fats, fibre, vitamins, minerals;
- understand the working characteristics of food materials;
- understand the way food components are specified i.e. by weight and volume;
- understand that food components are available in a variety of forms i.e. fresh, frozen, dehydrated, liquid, canned;
- understand that combining and processing materials can provide different working characteristics;
- have a basic understanding of the source of basic foods and the primary processes involved in conversion to workable materials.

Electronic and Control components

When working with electronic and control components candidates should:

- be able to identify common electronic and mechanical components and understand their functions and uses i.e. power cells, transistors, resistors, capacitors, switches, integrated circuits, buzzers, speakers, solenoids, gears, pulleys, linkages, levers, chain & sprockets, pneumatic cylinders;
- understand the way in which such components are specified; e.g. volts, ohms, farads, teeth (spur gears)
- have a basic understanding of how components can be combined to create systems with specified functions.

Manipulating and Combining Materials

Candidates should learn:

- how materials can be combined and processed in
- order to create more useful, or desirable, properties; • how these properties are utilised in industrial
- contexts; how a range of materials are prepared for
- manufacture, allowing for waste and fine finishing; about a variaty of self-finishing and
- about a variety of self-finishing and applied-finishing processes, and appreciate their importance for aesthetic and functional reasons;
 that to achieve the optimum use of materials and
- components, account needs to be taken of the complex inter-relationships between materials, form and manufacturing processes; • how pre-manufactured standard components
- are used to improve the effectiveness of the manufacturing process and be able to identify a small range appropriate to the material areas studied.

Candidates should: have a knowledge and understanding that the

New materials

- development of new and smart materials are allowing designers to meet a variety of user needs
- in new and exciting ways e.g.
 Precious Metal Clays (PMC) used in jewellery manufacture,
- corn starch polymers used in packaging,
 thermochromic pigments used for thermal
- warning patches - shape memory alloys
- Quantum Tunnelling Composite (QTC) used to incorporate electronics into textiles,
- have an awareness of the importance of the development of nanomaterials and integrated electronics in the area of Design and Technology.

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Design and Market Influences

Candidates should develop an understanding of the broad perspectives of the designed world. This will not ucle the appreciation of line, shape, form, proportion, colour, movement and texture within a critical awareness of aesthetics and ergonomics.

Evolution of Product Design

Candidates should:

- identify ways in which products evolve over time because of developments in ideas, materials, manufacturing processes and technologies as well as because of social, political, cultural and environmental changes;
- have a basic knowledge and understanding of major design movements since 1900 e.g. Arts & Crafts Movement, Art Nouveau, Art Deco, Bauhaus, Modernism, De Stijl, Memphis, Post Modernism;
- recognise that design movements and cultural influences are still influencing new product development;
- have a knowledge and understanding that manufacturing industries are involved in continuous improvement (CI) and this is a major influence in product evolution:
- have a knowledge and understanding that sometimes new products are developed because of marketing pull and sometimes because of technological push.

Design in Practice

Product development

Candidates should:

- respond creatively to briefs, developing their own proposals and producing specifications for products and associated services
- discuss and analyse the situation/problem; know how to gather and respond to research, evaluate and select information and data to support the design and manufacture of products;
- consider the factors involved in the design of a product which is to be produced/manufactured in quantity;
- consider a wide range of users and create designs which are inclusive;
- determine the degree of accuracy required for the product to function as planned, taking account of critical dimensions and tolerances in determining methods of manufacture;
- understand how graphic techniques, ICT equipment and software, particularly CAD, can be used in a variety of ways to model aspects of design proposals and assist in making decisions;
- have a knowledge and understanding that design ideas are protected in law through copyright, patents and registered designs.

Communication and representation of ideas

Candidates should

- use a range of graphical techniques such as annotated sketches, formal drawing conventions, CAD to communicate design details in a clear and appropriate manner;
- develop a range of presentation techniques and media to portray materials, texture or finish such as mood boards, presentation drawings, digital photography, CAD;
- use line, tone, colour rendering using a range of media:
- use formal page layout techniques as an aid to planning and presenting drawings and information;
- use a range of prototyping and modelling methods in order to explore design alternatives during the design process as well as a means of communicating proposals which can be used for evaluation purposes;
- use a range of ICT equipment and software to communicate, model, develop and present ideas

Design Methodology

Candidates should

- understand that designing is not a linear exercise but is iterative. The traditional design cycle is just one of many methods for successful designing;
- understand that empirical problem solving, a systems approach and intuitive designing are all valid approaches to designing;
- experience a variety of design approaches Be able to use the following as starting points for
 - designing and making: natural form, pattern and structure

 - geometry and mathematics the work of well known artists, designers, craftsmen and technologists _ detailed product analysis
 - religious and cultural influences

Packaging

Candidates should

- have a knowledge and understanding of a variety of materials and processes used to package products and to be able to balance the likely impact upon the environment in terms of social responsibility and sustainability;
- understand the different basic functions of packaging such as protect, inform, contain, transport, preserve and display;
- have a knowledge and understanding of the need for product labelling and the common symbols used to indicated hazards, storage and handling, maintenance, disposal and design protection.

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Product marketing

Candidates should:

- have a knowledge and understanding of the power of branding and advertising and the effect that they have upon different consumer groups;
- be able to promote their own products using a variety of techniques, e.g. leaflets, flyers, point of sale, packaging and digital media.

Design in the Human Context

Human factors

Candidates should understand:

- that for products to be effective, designers, manufacturers and craftsmen need to take account of a wide range of human factors in an attempt to produce inclusive rather than exclusive designs i.e. access, cultural values;
- that anthropometrics and ergonomic considerations affect many design decisions;
- that design decisions for large scale manufacturing often aim to cover the needs of the 5th–95th percentile;
- the effect of colour used in product design to reinforce messages such as "danger" or to help to produce moods such as "warmth";
- social, economic and ethnic groups of people often have specific values and needs which can be an aid to focused designing, i.e. disabled, elderly, religious groups;
- that efficient manufacturing systems result from the layout of materials, equipment and controls, such as working triangles in the kitchen, production lines, assembly lines.

Safety

Candidates should understand:

- the relevance of safety with regard to themselves, the manufacturer and the product user;
- that designers and manufacturers have both a moral and legal responsibility for the products that they create;
- how to undertake simple tests to ensure that the products they make are safe for the specific user group they are designed for;
- the importance of risk assessment at all stages of designing and making.

Quality

Candidates should:

- ensure that their products are of a suitable quality for their intended user;
 understand that many judgements
- and stand matthan y judgements
 regarding quality are subjective and will be dependent upon various criteria e.g. cost, availability of resources and other social factors;
- have a knowledge and understanding of commercial methods which are used to improve quality assurance e.g. quality circles, teamworking, BS EN ISO 9000;
- be able to devise and apply test procedures to check the quality of their work at critical points during development and manufacture, and to indicate ways of improving it.

Ethical, Environmental and Sustainability Issues

Candidates should

- take into consideration the ethical, environmental and sustainability issues relating to the design and manufacture of products i.e. fair trade, product miles, carbon footprint, product disposal, and the following related principles: re-use, recycle, repair, reduce, rethink, refuse, etc.
- have a knowledge and understanding of the main factors governing environmentally friendly products, or "Green Designs" and be able to identify a range of these;
- have a knowledge and understanding of the main factors relating to recycling and/or reusing materials or products i.e. material identification, material separation, collection, processing, energy costs, subsequent usage, wastage.

Consumer issues

- have a knowledge and understanding of the work of consumer groups and pressure groups and the way products are evaluated – e.g. Which? reports;
- have a knowledge and understanding of the work of standards agencies (BSI, ISO etc) and how these standards affect product design and manufacture and subsequent testing;
- have a knowledge and understanding that a wide range of legislation exists to protect consumers and that designers and manufacturers need to conform to it.

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Processes and Manufacture

Product Manufacture

- Candidates should learn:
- how a range of materials are cut, shaped and formed to designated tolerances;
- the difference between quality control and quality assurance techniques;
- to produce detailed working schedules, e.g. flow charts, production plans, identifying critical points, i.e. QA and QC, in the making process and providing solutions to possible problems:
- to evaluate the quality of their personal project work and to devise modifications that will improve their products.

Industrial and Commercial Practice

Methods of production

Candidates should:

- · understand that products are manufactured to different scales of production i.e. one-offs, batch, mass, continuous, just in time (JIT);
- design and make for one-off, batch and mass production;
- work as part of a team on the batch production of products and/or components;
- · work as part of a team and experience different functions within simple batch production systems;
- use a range of procedures including CAD/CAM, where appropriate, to ensure consistency in the production of their products;
- use both hand and machine methods of cutting and shaping materials appropriate to the scale of production.

Manufacturing systems

- understand that commercial manufacturing is a system, or group of sub-systems which ٠ requires:
 - special buildings or places of work; the organisation of people;
 - _
 - the organisation of tools and equipment; _ risk assessment and compliance with health and safety regulations;
 - the organisation of materials; information systems to help people
 - _ communicate with each other reliably;
 - _ ways of changing the shape and form of materials to increase their usefulness;
 - ways of using tools and equipment to transform the materials into products;
 - the design and production of many products in a systematic way; quality assurance procedures and quality
 - checks to be made; efficient working methods; _
 - ways of safely taking care of the unwanted;
 - outputs of manufacturing i.e. disposing or recycling of waste materials, and ways of looking after the environment.

Use of ICT (Information and Communication Technology)

Candidates should

- understand how ICT facilitates a wide range of manufacturing functions, e.g. just in time (JIT), video conferencing, software sharing, stock control, data transfer and remote manufacturing;
- have an understanding of the application of CNC (Computer Numeric Control) in modern manufacturing as appropriate to a specific material area:
- understand how computer-aided manufacture (CAM) is used both in manufacturing in quantity and in the production of single items and small batches;
- understand how CAD/CAM allows for higher levels of accuracy, repeatability and efficiency.

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USEFUL WEBSITES & Revision books

Here are some suggestions, but add to the list as and when you find more to help vary your revision sources. DO NOT rely upon the internet alone. Use your revision books and notes too!

Websites:	Books:
designandtech.com	CGP Product Design Revision Guide
manufacturing.stanford.edu	
alessi.com	
designmuseum.org	
Flying-pig.co.uk	
www.edexcel.org	

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KEY WORDS/GRAPHICS DICTIONARY

It would be useful to develop your own graphics dictionary, here are a few words as a starting pint

Word	Meaning
Ergonomics	
Anthropometrics	
Impact adhesive	
Durability	
Mass market	
HDPE	
MDF	
Die Cutting	
Innovation	
Sustainability	
Kyoto Protocol	

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LITERACY CONNECTIVES

Use these examples to enhance your vocabulary in your exam or in your coursework written elements.

Examples:	Cause and Effect:	Changing topic:	Emphasising
For example	50	Turning to	Mainly
For instance	As a result of	As regards	Mostly
Such as	becquse	With regard to	Usually
as can be seen	This means that	Concerning	Unfortunately
qs is shown by	due to	As far asis concerned	Most often
Take the case of	therefore	Moving on to	Comparison:
This can be proven by	caused	Now to consider	Compared with
	This caused	By contrast	in comparison with
Listing points:	Contrasting:	Summing up:	Similarly
Firstly, secondly, finally	However	In conclusion	In the same way
In the first place	On the other hand	In summary	Likewise
To begin with	although	To sum up	Equally
On top of this	Despite this	Overall	As with
In addition to this	On the contrary	On the whole	are similar in that
More importantly	Un the contrary Instead	In short	
Addition	As for	In brief	Concession:
and	whereas	To conclude	Although While it is true that
also	while	So, to round off	Despite the fact that
as well	wniie		
Furthermore	Rephrasing:		In spite of
Another	In other words		Despite this
Not onlybut also	That is		Howeveryet
Before	To put more simply		Still

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