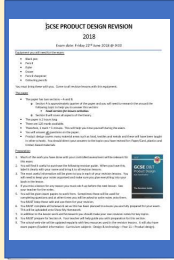
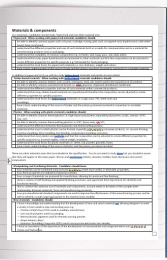



**DESIGN & TECHNOLOGY DEPARTMENT**  
**GCSE PRODUCT DESIGN**  
**Year 11 Revision**  
**Materials & components:**  
**Paper & card**

**UNITE - INNOVATE - PERSEVERE**
**ENGAGE TASK**

**Revision starts now...get organised...**

1. Glue in your GCSE revision overview sheet on the inside cover of your book. Do this neatly.
2. Glue in the Materials and components sheet to the first lined page of your book.
3. Read the two sheets through.

**LEARNING OBJECTIVE**

To understand requirements of the exam in the material area: Paper & card

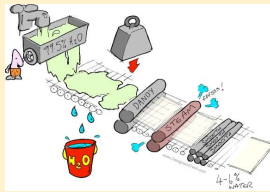
EXPLORE	ENHANCE	EXCEL
<ul style="list-style-type: none"> <li>To outline the key factors relating to paper production.</li> <li>To describe a range of paper and card materials and their applications.</li> </ul>	<ul style="list-style-type: none"> <li>To understand the key factors relating to paper production.</li> <li>To describe a range of paper and card materials. To link these materials to a range of applications with some justification.</li> </ul>	<ul style="list-style-type: none"> <li>To understand the key factors relating to paper production.</li> <li>To demonstrate a good understanding of a range of paper and card materials. To be able to evaluate their suitability for a range of applications.</li> <li>To explain the environmental impact of these materials.</li> </ul>
Grade range E - G	Grade range: C/D	Grade range A* - B

**Challenge yourself**

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**PAPER: HOW IS IT MADE?**

**TASK:**  
Annotate your design with the key aspects of the making paper process. Then, copy and complete the following statements:

- Additives are used in paper to obtain desired properties. For example...
- Paper-manufacture is on a large-scale, this is known as continuous production. It is needed on such a large scale because...
- Using recycled paper to produce pulp is good for the environment because...



**Key words:**  
**Cellulose** – plant based fibres used for paper-making  
**Wood pulp** - wood fibre reduced chemically or mechanically to pulp and used in the manufacture of paper.  
**Continuous production** – highly automated manufacture that runs continuously (24/7).

1. Tiny chips of wood are boiled in water with chemicals to create wood pulp.
2. Pulp is poured over a fine mesh (liquid drains).
3. The cellulose fibres link to form a mat.
4. The mat is squeezed between rollers to remove more water.
5. Mat is then allowed to dry.

**Video resources:**  
 How stuff works Paper Pulp:  
<https://www.youtube.com/watch?v=rZ17KAE5saA>  
 Recycled paper facts, true or false:  
<http://www.paperbackpaper.co.uk/recycled-paper-myths-facts>

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## UNITE - INNOVATE - PERSEVERE

### Common forms: Paper & Card

# SIZE

# WEIGHT

**Key words:**  
GSM = grammes per square metre

Above 200gsm is classed as **board**

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### Types of paper & card

**TASK:**  
Glue in your strip of examples on a fresh page. Label the paper and board types and make some notes.

**PAPER**

**Tracing paper**

- Used in designing.
- Transparent.
- Previous drawings can be used as an underlay.

**Layout paper**

- Used by designers for sketching.
- Translucent.
- Works well with marker pens.

**Cartridge paper**

- Used in Art and Design.
- Lightly textured, thicker at 100-135gsm
- Drawing, sketching, watercolours.

**Key words:**  
Laminating – a material formed by bonding two or more layers together.

**BOARD**

Very thick board is made by sticking sheets of paper or board together.

**Solid white board**

- Pure bleached wood pulp.
- Strong & high quality.

**Duplex board**

- Used mainly in food packaging.
- Bleached liner on one side.

**Foil lined board**

- Aluminium foil is laminated on on-side.

**Corrugated board**

- Inexpensive
- Offers good strength for relatively light weight.
- Made from 'linerboard' and the 'medium'.

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### Foam core board

**TASK:**  
Below is some examples of foam core board. It is lightweight and strong. What advantage does it have over corrugated card?

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### Finishes on paper/card

Here are many extra processes that can be added to the finished carton to enhance its appeal and aid in its display in store

**Foil Blocking**  
This is a process that stamps a design on a pack using a shiny foil and is available in a range of metallic colours.

**Embossing**  
This is a process that raises the surface of the board with a design - it can be done in a certain print position to highlight a logo or specific word(s) on the carton.

**Laminating**  
This is a process that covers the surface of a carton with a film to protect it, give it a matt or gloss finish and durability.

**Stringing**  
This is a process that adds a cord (which is available in a wide range of colours and thickness) to the product (mainly used in swing tickets).

**Hooks**  
These are the plastic hooks that are inserted into the carton for hanging purposes in store - a wide range of colours, shapes and sizes are available.

**TASK:**  
Produce a quick spider diagram of these finishes. Keep your notes brief but focus on what sort of packaging it will be used on and why it would be used.

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Exam questions **TASK:**

Complete a range of exam questions independently. These questions have been selected from the following papers:

June 2017 (15 marks)  
June 2015 (1 marks)  
June 2014 (3 Marks)

This gives a total of 19 marks. Look in the table below to see how many marks you need to get to get a good grade.

1 MARK = 1 MINUTE

19 MARKS = 19 MINUTES

**EXTENSION TASK:**

Paper is regarded as a sustainable product. What do you think this means?

A*	A	B	C	D	E	F	G
93%	88%	74%	62%	50%	39%	28%	17%
18	17	15	12	10	8	6	4

## UNITE - INNOVATE - PERSEVERE

Plenary 

## Learning check

- Go back to the checklist at the front of your books **Materials and Components**. Tick through what you feel you have learned today.
- Topic summary**
  - In your book put the heading 'topic summary' and write down a list of things that you would like to revise. It would be a good idea to include a list of key words.
  - This will become a useful list to check back on and ensure that you know what these things are.