TECHNO WORLD
‘YOUR’ Work in Product Design

MATERIALS AND COMPONENTS
Revision Sheet 1 – Paper and Board

<table>
<thead>
<tr>
<th>Name and Description</th>
<th>Uses and properties…</th>
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</table>
| LAYOUT AND TRACING PAPER | • Used for tracing and copying.  
Both translucent (you can see through them)  
• Its used for this because you can see through it. |
| CARTRIDGE PAPER | • Used for general drawing  
A tough and lightly textured paper.  
• Used for this because it takes pencils and colours well. |
| CARDBOARD | • Used for general packaging and modelling uses.  
Can be laminated together to make thicker boards. Often made of recycled material.  
• It’s used for this because it is cheap and widely available |
| SOLID WHITE BOARD | • Used for book covers and more expensive packaging.  
Made from bleached wood pulp  
• Used for this because it is strong and good for printing on. |
| DUPLEX BOARD | • Used in food packaging  
Made from pure wood pulp with a bleached liner on one side.  
• Used for this because it can be easily printed on and can be lined to protect it from drinks and foods. |
| FOIL LINED BOARD | • Lids for food liners  
Made by laminating aluminium to any of the boards above.  
• Used for this to help insulate the container and to help keep moisture in. |
| CORRUGATED BOARD | • Used for large cartons which transport smaller items.  
This is made up of a liner board (flat sheet) and the fluted sheet sandwiched in the centre.  
• Used for this because it offers strength without undue weight. |

How paper is made…
1. Tiny wood chips are cooked in water to make a mushy wood pulp.
2. Starch, dye and chalk are added to produce the required texture and surface finish.
3. Poured over fine mesh
4. As the water drains away the wood fibres (less than 1mm in length) link together when they touch.
5. This web is passed through rollers to squeeze out the excess water.

Paper is commonly available in the ‘A’ sizes e.g. A4, A3 etc.

Board is heavier, thicker and more rigid than paper and is made from several layers of pulp.

e.g. Cardboard  
Carton board  
Mounting board  
Corrugated board

Laminating – sticking several sheets of card together to make very thick card.

Composite materials – laminating (sticking together) a wide range of different materials such as aluminium foil, plaster of paris, rigid plastic foams etc. creates boards with very different properties. You are trying to get the best properties from each material.

<table>
<thead>
<tr>
<th>Product</th>
<th>A foil lined lid to a takeaway carton</th>
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</thead>
<tbody>
<tr>
<td>Composition</td>
<td>Board laminated to foil laminated to a thin plastic layer</td>
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</tbody>
</table>
| Properties | Board – adds rigidity  
Foil – preserves food and keeps in heat  
Plastic lining – keeps food dry |
Questions
1. Explain the how the properties of solid white board make it suitable for book covers.

2. Explain why Duplex board is especially used for printed goods.

3. Name a material that is suitable for large boxes – explain why you chose it.

4. In your own words explain what lamination is.

5. Name a paper based product that is laminated (not on the example sheet)

6. Explain why composite materials have been developed and give one example (not on example sheet)