

NAME: _____ FORM/GROUP _____

DESIGN AND TECHNOLOGY REVISION BOOKLET

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COMPOSITE MATERIALS - SECOND BOOKLET

PLYWOOD

FLEXI PLY (A FLEXIBLE FORM OF PLYWOOD)

KEVLAR®

THERMOPLASTIC ELASTOMERS (TPE)

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SUITABLE REVISION MATERIAL FOR:

**PRODUCT DESIGN
RESISTANT MATERIALS
GRAPHIC PRODUCTS
DESIGN AND TECHNOLOGY**

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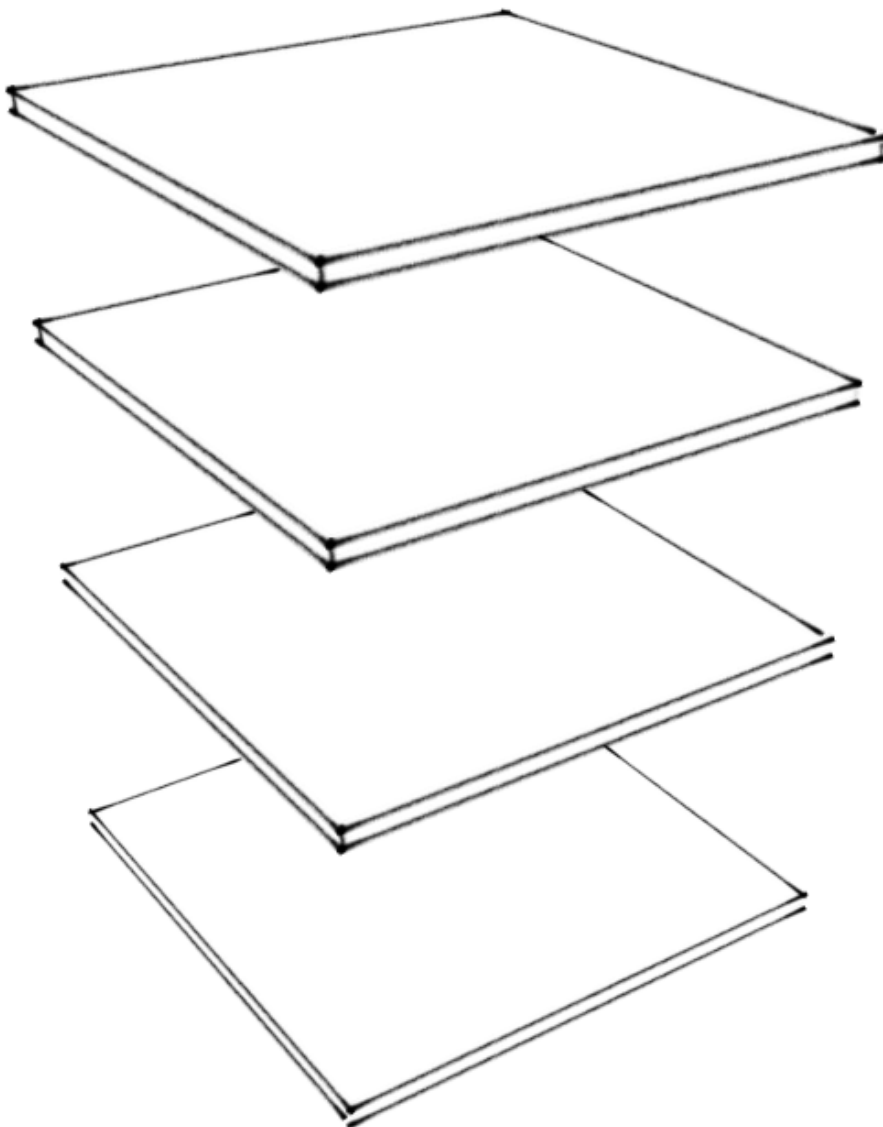
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PLYWOOD

LINK TO HELP AND INFORMATION <https://www.technologystudent.com/joints/plywood1.html>

1a. Explain why plywood can be described as a composite material. **4 marks**

1b. The incomplete sketch below shows individual plies, ready for gluing to form plywood. Add the grain to each ply, clearly showing its direction. Using colour/shade will enhance your marks. **4 marks**



1c. Explain the importance in the way the grain of each ply is positioned. **2 marks**

PLYWOOD - CONTINUED

LINK TO HELP AND INFORMATION

<https://www.technologystudent.com/joints/plywood1.html>

1d. What are the advantages of using plywood over other natural woods?

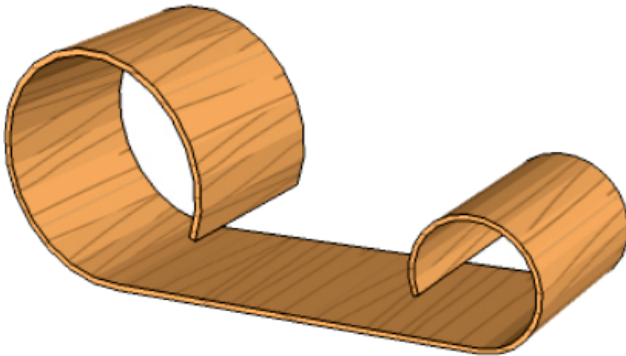
1e. List practical applications of plywood. You may also need to search the internet for examples.

FLEXI PLY (A FLEXIBLE FORM OF PLYWOOD)

LINK TO HELP AND INFORMATION

https://www.technologystudent.com/despro_flsh/flexply1.html

2a. Describe the main advantage of flexi ply, over other forms of manmade boards? Use notes and sketches in your answer. 3 marks notes **3 marks sketche(s)**



2b. Describe how the permanent form/shape seen opposite, could be manufactured from several layers of flexi ply. Use labelled sketches and notes. **3 marks notes 3 marks sketch(s)**

2c. Using the Internet, collect four images of pieces of furniture, manufactured from flex ply. For each piece of furniture, write your thoughts on the design. **2 x 4 marks**

LINK TO HELP AND INFORMATION

<https://www.technologystudent.com/joints/kevlar1.html>
<https://www.technologystudent.com/joints/kevlar2.html>

3a. What is Kevlar®? **3 marks**

3b. How is Kevlar® formed into a textile material? **3 marks**

3c. List eight products that include the material Kevlar® **8 marks**

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3d. Kevlar® is one type of Kevlar. Name the two other main types. **2 marks**

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KEVLAR® - CONTINUED

LINK TO HELP AND INFORMATION

<https://www.technologystudent.com/joints/kevlar1.html>

<https://www.technologystudent.com/joints/kevlar2.html>

4a. Apart from weight and strength, Kevlar® has other advantages. What are they? Refer to products and practical applications in your answer. **5 marks**

4b. Kevlar® has a specialist role as a material. It is not used widely because it has certain disadvantages. What are the disadvantages of Kevlar®? Refer to products and practical applications in your answer. **5 marks**

THERMOPLASTIC ELASTOMERS (TPE) **ALSO CALLED THERMOPLASTIC RUBBERS**

LINK TO HELP AND INFORMATION

https://www.technologystudent.com/despro_fish/tpe1.html

https://www.technologystudent.com/despro_fish/tpe2.html

5a. What are Thermoplastic Elastomers (TPEs)?

5b. Sketch and name a product manufactured from each of the follow TPEs:

ARNTINEL

HYTREL

KRATON

RITEFLEX

STYROFLEX

5c. What are the general properties of TPEs?

5d. List two disadvantages of using of TPEs?
