

**FERROUS AND NON-FERROUS METALS**

TO ANSWER ALL THE QUESTIONS YOU WILL NEED TO DOWNLOAD THE 'MATERIALS - WOODS, METALS, PLASTICS' APP, FROM THE INTERACTIVE MOBILE APP SECTION OF [www.technologystudent.com](http://www.technologystudent.com)

**LINK**

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**ARE YOU READY?  
USE THE MOBILE App!!**

**1**

**WHAT IS A FERROUS METAL?**  
Include the names of two ferrous metals

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**2**

**WHAT IS A NON-FERROUS METAL?**  
Include the names of two non-ferrous metals

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**3**

**WHAT IS AN ALLOY?** Use 'steel' as an example in your answer.

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**COMPLETE THE TABLE OF ALLOYS, BY ADDING THEIR USES**

| ALLOYING AGENT | PROPERTIES  | USES |
|----------------|---|------|
| CHROMIUM       | Resists wear and increases corrosion resistance. Increases hardness and toughness |      |
| VANADIUM       | Increased strength and toughness of steel, including wear resistance.             |      |
| NICKEL         | increased strength and hardness, resistance to corrosion.                         |      |

**4**

**ALUMINIUM IS A NON FERROUS METAL. DESCRIBE THIS METAL, INCLUDE PROPERTIES AND USES**

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**5**

**COPPER IS A NON FERROUS METAL. DESCRIBE THIS METAL, INCLUDE PROPERTIES AND USES**

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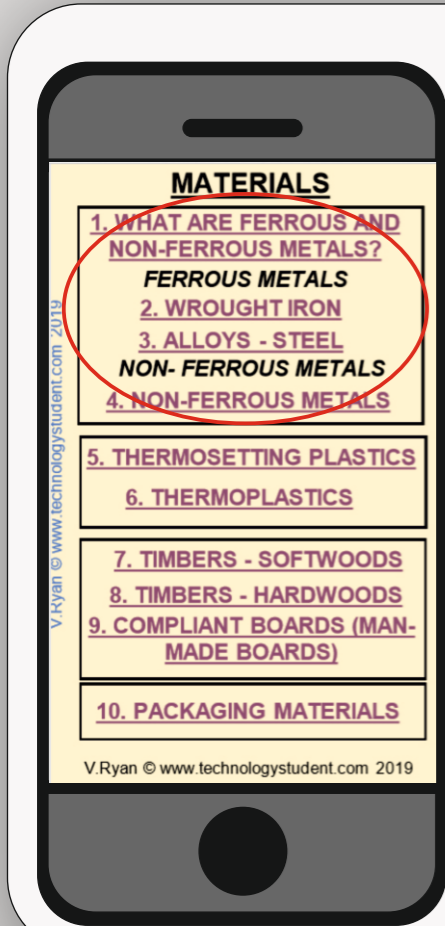
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**1**

**BRASS IS A NON FERROUS METAL. DESCRIBE THIS METAL, INCLUDE PROPERTIES AND USES**

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**PASTE IMAGES OF THREE PRODUCTS MANUFACTURED FROM BRASS.**

**2**

**THE PRODUCTS SHOW BELOW, ARE MANUFACTURED FROM THE NON FERROUS METAL, CALLED PEWTER. PEWTER IS AN ALLOY. NAME THE METALS THAT MAKE UP THIS ALLOY.**

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**DESCRIBE THREE PROPERTIES / QUALITIES OF PEWTER**

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**3**

**CAST IRON IS A FERROUS METAL BUT IT HAS LIMITATIONS. DESCRIBE ITS LIMITATIONS.**

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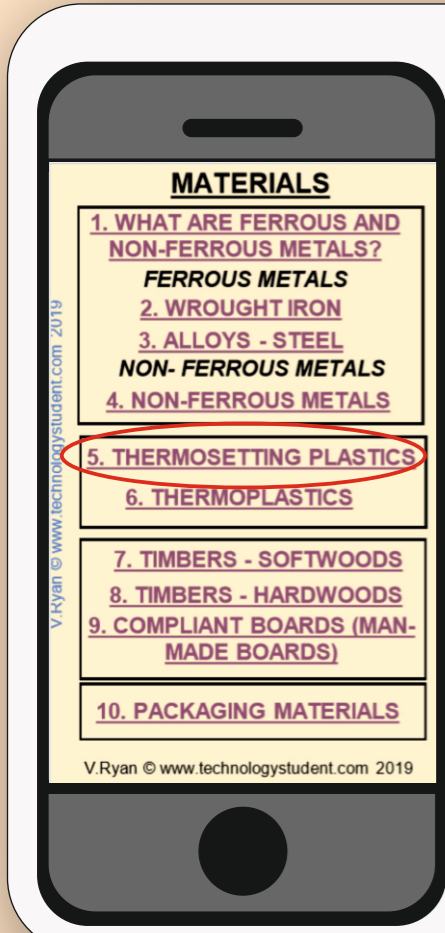
**NAME THREE PRODUCTS MANUFACTURED FROM CAST IRON**

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## THERMOSETTING PLASTICS

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**ARE YOU READY?  
USE THE MOBILE App!!**

**1** ONCE HEATED AND SHAPED, CAN THERMOSETTING PLASTICS (POLYMER) BE REHEATED AND SHAPED AGAIN? Make reference to 'cross linked molecules'.

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**2** NAME A GLUE THAT IS A THERMOSETTING POLYMER AND DESCRIBE ITS USE.

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**3** POLYURETHANE VARNISH IS A THERMOSETTING POLYMER. DESCRIBE HOW IT IS APPLIED TO A SURFACE. INCLUDE SOME OF ITS PROPERTIES / QUALITIES.




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**4** DESCRIBE SOME OF THE PRACTICAL APPLICATIONS OF MELAMINE FORMALDEHYDE.

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**5** WHY IS UREA FORMALDEHYDE (UF) SUITABLE FOR ELECTRICAL SOCKETS?




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## THERMOPLASTICS

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**ARE YOU READY?  
USE THE MOBILE App!!**

**1** ONCE HEATED AND SHAPED, CAN THERMOPLASTICS BE REHEATED AND SHAPED AGAIN?  
Make reference to the weak link between molecules.

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**2** ACRYLIC (ALSO KNOWN AS PERSPEX®) IS A THERMOPLASTIC. DESCRIBE SOME OF THE PROPERTIES OF THIS POLYMER.

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**3** THIS SOAP DISPENSER IS MANUFACTURED FROM LDPE (LOW DENSITY POLYETHYLENE). WHY IS IT SUITABLE FOR THE MANUFACTURE OF THIS PRODUCT?

Labels in diagram: PP (POLYPROPYLENE), CAP, LDPE (LOW DENSITY POLYETHYLENE), BODY.

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**4** LIST FOUR PRODUCTS THAT ARE MANUFACTURED FROM HIGH DENSITY POLYETHYLENE (HDPE)

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**5** THE SEAT OF THE CHAIR BELOW IS POLYPROPYLENE. WHY IS IT A SUITABLE MATERIAL?

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## SOFTWOODS

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**ARE YOU READY?  
USE THE MOBILE App!!**

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WHAT ARE SOFTWOODS?

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DESCRIBE GENERAL USES OF SOFTWOODS

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2

SCOTS PINE IS A COMMON NATURAL WOOD. DESCRIBE THIS WOOD AND LIST ITS USES.




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3

YEW IS ANOTHER SOFTWOOD. DESCRIBE ITS PROPERTIES AND INCLUDE SOME PRACTICAL APPLICATIONS.




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4

THE SOFTWOOD 'DOUGLAS FIR' HAS MANY USES - LIST THREE.




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LIST TWO PROPERTIES OF THIS NATURAL WOOD

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5

EUROPEAN LARCH HAS A WIDE RANGE OF USES. HOWEVER, 'KNOTS' CAN CREATE PROBLEMS. WHAT ARE THESE?




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HARDWOODS

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Once you have downloaded the App, you can use it to navigate the website. You may need to follow the links on each page of the App, to research / complete answers to all the questions.

ARE YOU READY?  
USE THE MOBILE App!!



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WHAT ARE HARDWOODS?

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2

DESCRIBE EUROPEAN OAK AND LIST ITS USES.



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3

BALSA IS AN UNUSUAL HARDWOOD. DESCRIBE ITS PROPERTIES AND INCLUDE SOME PRACTICAL APPLICATIONS.



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4

MAHOGANY HAS MANY USES. LIST THREE.



LIST TWO PROPERTIES OF THIS NATURAL WOOD.

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5

DESCRIBE SOME OF THE USES OF BEECH. INCLUDE TWO MECHANICAL PROPERTIES OF THIS WOOD.



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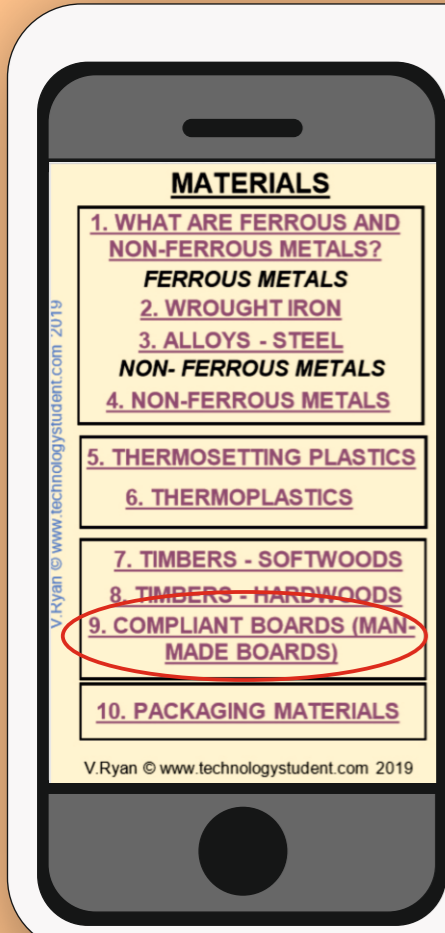
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## COMPLIANT BOARDS

(SOMETIMES CALLED MAN-MADE BOARDS)  
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**ARE YOU READY?  
USE THE MOBILE App!!**

1

WHAT ARE COMPLIANT / MAN-MADE BOARDS? Name three compliant boards.

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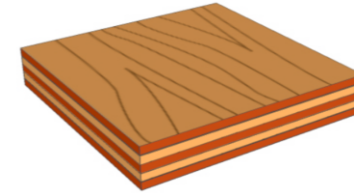
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2

WHY CAN PLYWOOD BE REGARDED AS A COMPOSITE MATERIAL?




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3

IN THE SPACE BELOW, PASTE IMAGES SHOWING THE PRACTICAL USE OF PLYWOOD.

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4

WHAT IS FLEXIPLY? EXPLAIN HOW IT CAN BE FORMED INTO VARIOUS SHAPES




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5

NAME ONE MORE COMPLIANT MATERIAL AND DESCRIBE ITS USE.

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