

## USING MATERIALS- SEPARATES

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<p>Corrosion is the destruction of materials by chemical reactions with substances in the environment. Rusting is an example of corrosion. Both air and water are necessary for iron to rust.</p> <p>Corrosion can be prevented by applying a coating that acts as a barrier, such as greasing, painting or electroplating. Aluminium has an oxide coating that protects the metal from further corrosion.</p> <p>Some coatings are reactive and contain a more reactive metal to provide sacrificial protection, eg zinc is used to galvanise iron.</p>	98	2
<p>Most metals in everyday use are alloys.</p> <p>Bronze is an alloy of copper and tin. Brass is an alloy of copper and zinc.</p> <p>Gold used as jewellery is usually an alloy with silver, copper and zinc. The proportion of gold in the alloy is measured in carats, with pure gold being 24 carat. 18 carat gold is 75% gold.</p> <p>Steels are alloys of iron that contain specific amounts of carbon and other metals. High carbon steel is strong but brittle. Low carbon steel is softer and more easily shaped. Steels containing chromium and nickel (stainless steels) are hard and resistant to corrosion.</p> <p>Aluminium alloys are low density.</p>	97	2
<p>Most of the glass we use is soda-lime glass, made by heating a mixture of sand, sodium carbonate and limestone. Borosilicate glass, made from sand and boron trioxide, melts at higher temperatures than soda-lime glass.</p> <p>Clay ceramics, including pottery and bricks, are made by shaping wet clay and then heating in a furnace.</p> <p>The properties of polymers depend on what monomers they are made from and the conditions under which they are made. For example, low density (LD) and high density (HD) poly(ethene) are produced from ethene.</p> <p>Thermosoftening polymers melt when they are heated. Thermosetting polymers do not melt when they are heated.</p> <p>Most composites are made of two materials, a matrix or binder surrounding and binding together fibres or fragments of the other material, which is called the reinforcement.</p>	96	2