



- State uses of the alloys bronze, brass and steel
- Interpret and evaluate the composition and uses of alloys given appropriate information
- Explain why alloys are more useful than pure metals



Key Facts

Alloys are a mixture of metals. They are added together when they are melted. Some metals by themselves do not have all the properties needed that the job designers and engineers need them to do. By creating alloys, the pure metal can be strengthened or have other enhanced properties.

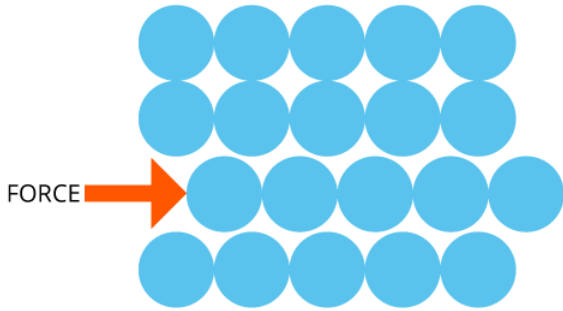
Alloys are used to make coins, bridges, some jewellery artificial joints, drinks cans, bicycles, car bodywork, tanks, screws and more.

Cut out the boxes and match each alloy to what it is made from and its uses.

| Alloy | What it is mainly made from | Uses |
|-----------------|----------------------------------|---|
| aluminium alloy | iron and carbon | jewellery |
| brass | titanium, aluminium and vanadium | sculptures and ship's propellers |
| solder | aluminium and magnesium | musical instruments, doorknobs, fixtures and fittings on a boat |
| gold alloy | copper and usually tin | to join parts of an electrical circuit |
| titanium alloy | gold and copper | used to make car bodies |
| bronze | lead and tin | replacement joints |
| steel | copper and zinc | air industry |

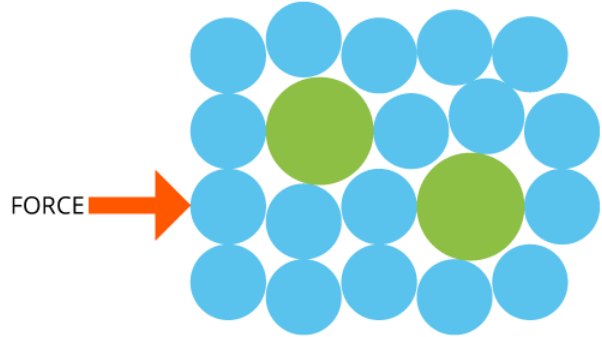
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Pure Metal



In a pure metal the layers can slide over one another

Alloy



The addition of the second atom makes this sliding difficult.

Draw a molecular diagram of brass

Draw a molecular diagram of copper

Define the terms:

alloy:

high carbon steel:

low carbon steel:

Describe the composition of common alloys and their uses.
