

Name _____

Class _____

Date _____

By the end of this worksheet I can...

- ☐ explain ferrous, non-ferrous and alloy
- ☐ describe the properties and uses of iron, cast iron, mild steel and stainless steel
- ☐ describe the properties and uses of high-carbon steel
- ☐ describe the properties and uses of aluminium, copper and brass

I DO

Worked example Read how a full-mark answer is built

A camping kettle has an aluminium body and a stainless steel handle.

1 Explain two reasons why aluminium is suitable for the kettle body. (2 marks)

Full-mark answer each ✓ is one mark

Aluminium is lightweight, so the kettle is easy to carry when camping ✓. It is a good conductor of heat, so the water boils quickly ✓.

Why marks are not awarded

X "Strong" or "light" with no link to the kettle

WE DO

Guided practice Use the starters and word bank to help you

2 Explain the difference between a ferrous and a non-ferrous metal. Give an example of each. (2 marks)

Sentence starters

One reason is ... because ...
Another reason is ... so ...

Word bank

contain · iron · ferrous · metals · Copper ·
aluminium · Mild steel · Brass

Tip: 2 marks = 2 separate, developed points.

YOU DO

On your own No notes. Check your answers afterwards.

3 Quick check: tick one box for each.

a) Why is aluminium used for drinks cans?

- ☐ It is magnetic, so cans are easy to sort ☐ It is hard and stiff, so cans keep their shape ☐ It is the cheapest metal available ☐ Lightweight and corrosion resistant

b) Which metal is ferrous?

- ☐ Mild steel ☐ Brass ☐ Aluminium ☐ Copper

c) Brass is an alloy of copper and...

- ☐ Tin ☐ Zinc ☐ Iron ☐ Aluminium

d) Cast iron is unsuitable for a product that must bend because it is...

- ☐ Brittle ☐ Ductile ☐ Malleable ☐ Lightweight

4 Key terms: write the letter of the matching description next to each term.

1. Ferrous metal	_____	A A metal mixed with other elements to improve its properties.
2. Alloy	_____	B Lightweight with good strength-to-weight ratio. Cans, ladders, aircraft.
3. Mild steel	_____	C Contains iron; magnetic (except stainless); rusts.
4. Stainless steel	_____	D Ductile, malleable, easily welded. Car bodies, nuts and bolts.
5. Aluminium	_____	E Corrosion resistant and hygienic. Cutlery, sinks.

5 Explain why stainless steel is suitable for a kitchen sink. (2 marks)

6 Give the properties and one use of Brass. (2 marks)

7 Give the properties and one use of Copper. (2 marks)

Check and reflect

Mark your answers with the answer sheet. Go back to the checklist on the site and re-rate each “I can” statement above. Which one still needs work?
