

Reactivity Series

KS3 Chemistry · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

What is the reactivity series?

Step 1 · Definition

A list of metals in order of how vigorously they react, most reactive first.

Step 2 · Evidence

It is built from experiments: reactions with water, with dilute acids, and displacement reactions.

Answer: Metals listed from most to least reactive

Check: Carbon (and hydrogen) are included points.

2. Now try one with the steps

Use reactions with water to place calcium, copper and sodium in order.

Step 1 · Sodium

Step 2 · Calcium

Step 3 · Copper

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. Which is the most reactive metal in this list: iron, potassium, copper? [1]

2. Which is the least reactive: zinc, gold, magnesium? [1]

3. Which non-metal is placed in the reactivity series between aluminium and zinc? [1]

4. Name TWO types of reaction used to build the reactivity series. [2]

5. Will iron displace copper from copper sulfate solution? [1]
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6. Will copper react with dilute hydrochloric acid? [1]
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7. Why is gold found pure metal in the ground? [1]
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8. Why is potassium never found pure metal in nature? [1]
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9. Put in order, most reactive first: zinc, copper, magnesium, iron. [2]
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10. Is carbon more or less reactive than iron? [1]
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11. Which metals can be extracted from their oxides by heating with carbon: aluminium, zinc, iron, copper? [2]
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12. Metal R reacts with cold water to give hydrogen, but less vigorously than sodium. R is above magnesium. Suggest what R might be. [1]
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13. Why should you NOT test the reactivity of potassium with acid in the lab? [1]
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14. Explain why aluminium seems unreactive (for example, saucepans don't fizz) even though it is high in the series. [2]
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4. Before you hand it in

Leaving carbon out of the series.

Carbon goes between aluminium and zinc.

"Aluminium is unreactive because it doesn't corrode."

Aluminium is quite reactive; the oxide coating hides this.

Mixing up 'most reactive' with 'strongest metal'.

Potassium is very reactive but soft enough to cut with a knife.

Thinking the series is a list to memorise only.

Be ready to place a metal using observations from water, acid and displacement.