

Chemical Reactions

KS3 Chemistry · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Is frying an egg a physical or a chemical change?

Step 1 · Is a new substance made?

Yes: the clear runny egg white turns into a white solid with different properties.

Step 2 · Can it be reversed easily?

No, you cannot un-cook an egg.

Answer: A chemical change

Check: New substance + hard to reverse = chemical.

2. Now try one with the steps

Magnesium burns with a bright white flame to form white powder. Write the word equation and name the reactants and product.

Step 1 · Reactants (on the left)

Step 2 · Product (on the right)

Step 3 · Word equation

Answer:

3. Practice

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

1. What is made in every chemical reaction? [1]

2. What are the starting substances in a reaction called? [1]

3. What are the substances made in a reaction called? [1]

4. Is melting chocolate a physical or a chemical change? [1]

5. Give THREE signs that a chemical reaction may be happening. [3]

6. Is rusting physical or chemical? [1]

7. Write a word equation for carbon reacting with oxygen to make carbon dioxide. [1]

8. Copper reacts with oxygen. Name the product. [1]

9. In a chemical reaction, what happens to the atoms? [2]

10. Why is dissolving sugar in water not a chemical reaction? [2]

11. A solution changes colour when it is heated, and changes back when it cools. Is this definitely a chemical reaction? Explain. [2]

12. Methane (CH_4) burns: $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$. How many oxygen atoms are on the left? [1]

13. How many oxygen atoms are on the right of the equation in question 12? [1]

14. Explain why baking a cake is a chemical change, giving TWO pieces of evidence. [3]

4. Before you hand it in

Writing reactants on the right of the arrow.

reactants → products.

"Bubbles always mean a chemical reaction."

Ask: is a NEW substance made? Bubbles of steam from boiling are not new.

"Atoms are used up in a reaction."

The reactant substances are used up; their atoms end up in the products.

Using = instead of → in equations.

Always use an arrow.