

Year 7 Science – Unit Overview

Atoms, elements and compounds

Unit Summary

In this unit, students learn about the basic building blocks of matter and are introduced to key chemistry ideas. They explore what atoms are and how they form elements, compounds and mixtures. Students learn to use chemical symbols and simple formulae, investigate the properties and uses of different substances, and observe chemical reactions through practical work and demonstrations. The unit builds on primary learning about materials and prepares students for future topics such as separating mixtures and understanding the periodic table.

20 questions to ask, or encourage your child to turn them into flashcards.
Answers on the reverse.

1. What is an element?
2. What is a compound?
3. What is a molecule?
4. How many **different elements** are in water (H_2O)?
5. How many **oxygen atoms** are there in one molecule of carbon dioxide (CO_2)?
6. How many **carbon atoms** are there in one molecule of carbon dioxide (CO_2)?
7. Are all metallic elements magnetic?
8. Where are the metals found on the periodic table?
9. What is the chemical symbol for hydrogen?
10. What is the chemical symbol for chlorine?
11. What does the property 'conductor of electricity' mean?
12. Why are metals used in saucepans?
13. Is copper a: A) metallic element, B) non-metallic element, C) compound, D) mixture
14. Is copper chloride a: A) metallic element, B) non-metallic element, C) compound, D) mixture
15. Is NaNO_3 a: A) metallic element, B) non-metallic element, C) compound, D) mixture
16. What is formed when iron reacts with sulfur?
17. Write a word equation for when magnesium reacts with oxygen
18. How would you write the chemical formula of a molecule with 2 hydrogen atoms, 1 sulfur atom, and 4 oxygen atoms?
19. What is one sign that a chemical reaction has taken place?
20. What state of matter are most metals at room temperature?

Further information on this topic:

<https://youtu.be/14BEh2EKrM0?si=RGfRnHOEEYcvWuB7>

<https://youtu.be/XoCpSLNNoGk?si=RV6Au005t9RtNqZN>

<https://youtu.be/WUSrEKv6x94?si=lv13cKKlh3WbcJMx>

https://youtu.be/r5QwiagXc3c?si=LQxaSo9L-TU_ogKk

<https://www.bbc.co.uk/bitesize/topics/zstp34j>

Answers

1. A pure substance made of 1 type of atom
2. A pure substance made of more than one type of atom chemically bonded
3. Two or more atoms chemically bonded
4. Two – hydrogen and oxygen
5. 2
6. 1
7. No (only iron, cobalt and nickel)
8. On the left
9. H
10. Cl
11. Allows electricity to flow through
12. Because metals are good conductors of heat and they are malleable (can be bent into a saucepan shape)
13. Metallic element
14. Compound
15. Compound
16. Iron sulfide
17. magnesium + oxygen \rightarrow magnesium oxide
18. H_2SO_4
19. Colour change, fizzing, temperature change
20. Solid