

8th Grade Science

Introduction to Matter Book

Chapter Three: Elements, Compounds & Mixtures Sections One, Two & Three: (pg 56-71)

Answer each of the following questions on a piece of notebook paper, **in a complete sentence, restating the question in your answer.** Failure to follow these rules will result in the student having to rewrite the assignment to earn their points.

1. What are some physical properties that can be characteristic properties?
2. What are some chemical properties that can be characteristic properties?
3. Name three different metals.
4. Name three different nonmetals.
5. Name three different metalloids.
6. There are eight elements that make up 98.5% of the Earth's crust: 46.6% oxygen, 8.1% aluminum, 5.0% iron, 3.6% calcium, 2.8% sodium, 2.6% potassium, and 2.1% magnesium. The rest is silicon. What percentage of the Earth's crust is silicon? [SHOW YOUR WORK TO GET CREDIT]
7. Your friend tells you that a shiny element has to be metal. Do you agree? Explain.
8. List four compounds.
9. What are three physical properties used to identify compounds.
10. Give an example of how a compound can have very different properties than elements that make it up.
11. What are two types of substances that compounds can be broken into?
12. What is the only way to break down a compound?
13. Table sugar is a compound made of carbon, hydrogen and oxygen. If sugar contains 41.86% carbon and 6.98%

- hydrogen, what percentage of sugar is oxygen? [SHOW YOUR WORK TO GET CREDIT]
14. Iron is a solid gray metal. Oxygen is a colorless gas. When they chemically combine, rust is made. Rust has a reddish brown color. Why is rust different from the iron and oxygen that it is made of?
 15. A jar contains samples of the elements carbon and oxygen. Does the jar contain a compound? Explain.
 16. List & describe 4 ways of physically separating a mixture.
 17. Using salt water, explain which is the solute and which is the solvent.
 18. When 2 liquids or gases are mixed to form a solution, which is the solvent?
 19. If a solution has less solute than another of the same solution it is said to be what?
 20. If a solution has more solute than another cup of the same solution it is said to be what?
 21. What is the concentration of solution A if it has 55 g of sugar dissolved in 500 mL of water?
 22. What is the concentration of solution B if it has 36 g of sugar dissolved in 144 mL of water?
 23. Of solution A and B, which solution is more concentrated?
 24. On a hot day you leave an open can of Mt. Dew on the patio. When you come back 20 minutes later it is flat (no bubbles). Explain what has happened.
 25. How can the particles of a suspension be separated?
 26. Suggest a procedure to separate iron filings from sawdust. Explain why this procedure works.
 27. Identify the solute and solvent in a solution made of 15 mL of oxygen and 5 mL of helium. Explain.