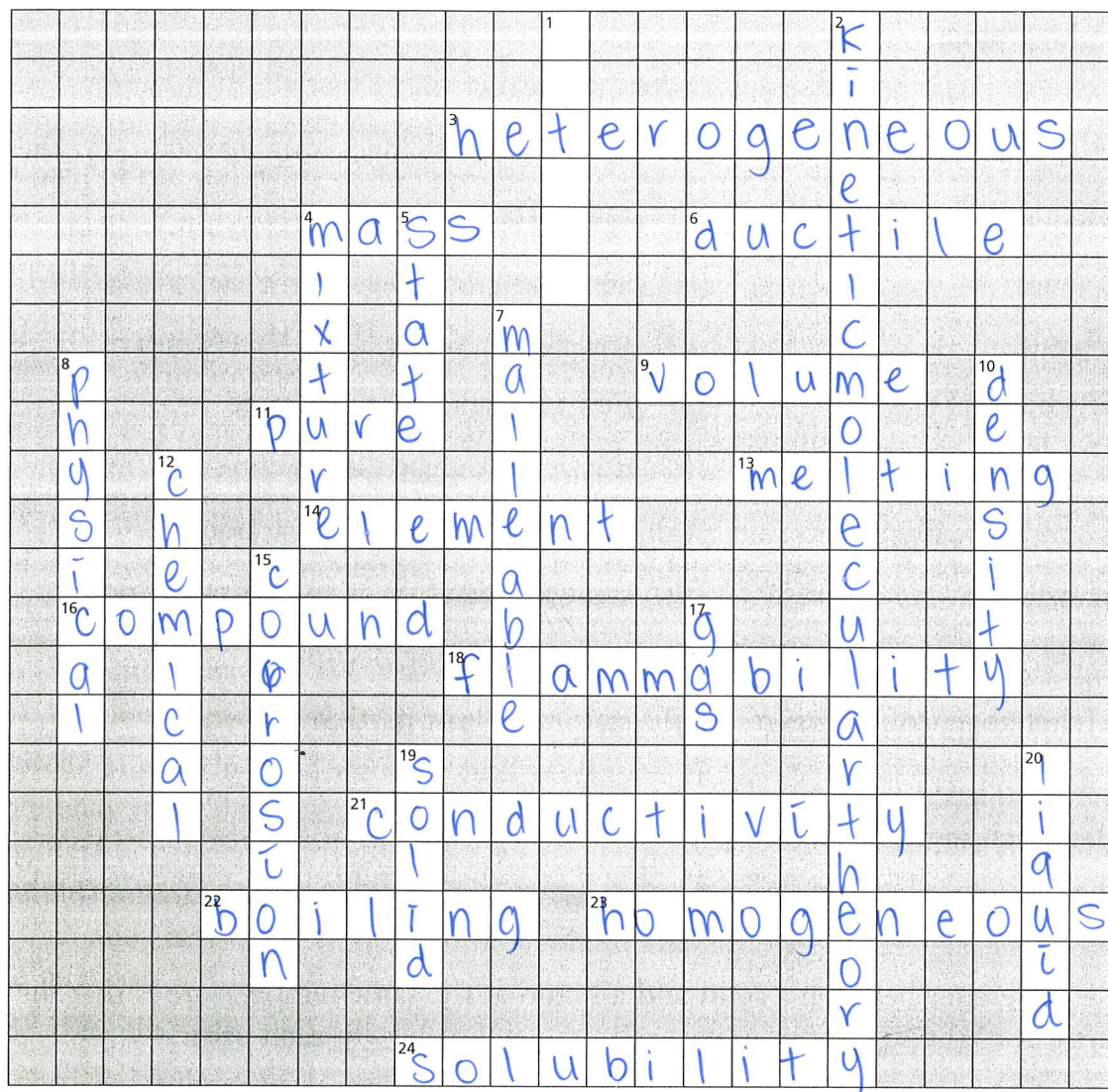


Matter and Change Crossword Puzzle



ACROSS

3. a mixture that is not uniform in its composition
4. the amount of matter that an object has
6. Copper is used for electrical wiring because it is a _____ material.
9. the amount of space that an object fills
11. A _____ substance is matter that contains only one type of particle.
13. _____ point: when a solid changes to a liquid
14. a pure substance that cannot be changed into anything simpler
16. a pure substance that consists of two or more elements
18. the rapid reaction of some substances with oxygen
21. the ability of a material to conduct electricity or heat
22. _____ point: when a liquid changes to a gas
23. A _____ mixture is made of substances that are evenly and microscopically mixed together.
24. _____ is the ability of a substance to dissolve.

DOWN

1. anything that has mass and volume
2. the idea that matter is made from moving invisible particles
4. A _____ contains two or more pure substances.
5. Liquid is one _____ in which matter can be found.
7. If a solid is _____, it can be hammered into shapes.
8. Condensation is a _____ change.
10. the mass per unit volume of a substance
12. Rusting is a _____ change.
15. the slow reaction of certain metals with oxygen
17. In a _____, the particles are very far apart.
19. A liquid becomes a _____ when heat energy is removed.
20. Water is a _____ at room temperature.

Chapter 5 Quiz

Part A: Matching

1. Match the term with the appropriate definition.

- | | |
|-----------------------------------|--|
| <u>g</u> A. evaporation | (a) macroscopic changes only, particles stay the same |
| <u>d</u> B. ductile | (b) makes frost |
| <u>f</u> C. mass | (c) can be separated using physical properties |
| <u>j</u> D. solid | (d) non-metals do not have this property |
| <u>e</u> E. chemical change | (e) new substances are produced |
| <u>b</u> F. deposition | (f) density multiplied by volume |
| <u>h</u> G. boiling point | (g) creates water vapour from liquid |
| <u>i</u> H. volume | (h) same temperature as condensation point |
| <u>a</u> I. physical change | (i) space something occupies |
| <u>c</u> J. heterogeneous mixture | (j) state with least particle movement |

Part B: Completion

Complete each sentence.

- The difference between a "cool" solid and a "hot" solid is that the particles vibrate less/slower in the cool solid.
- The difference between a solid and a liquid at the same temperature is that the particles of the liquid can move past each other.
- One difference between a hot liquid and a gas is that the particles of the gas do not attract each other.
- When the water vapour in clouds is cooled rapidly, it experiences deposition and forms snow.
- A substance dissolving is considered a physical property, while a substance's reaction with acid is considered a chemical property.
- Car bodies can have interesting shapes because metals are malleable, a physical property.
- Car bodies can also rust, which is called corrosion, a chemical property.

Chapter 5 Quiz (continued)

Part C: Multiple Choice

Circle the letter beside the answer that best completes the statement or answers the question.

9. Which of the following is not a physical property?

- (a) state (b) density (c) ductility (d) flammability

10. Which of the following geological processes are chemically created?

- (a) erosion of a riverbank (c) heaving of rock by ice formation
(b) flow of molten lava (d) formation of limestone cave

11. The 787 is a new airliner. Much of it is made of carbon fibre panels. What do you think is the primary combination of properties that make this a good choice?

- (a) flammable and low density (c) low density and high strength
(b) high density and malleable (d) high density and flexibility

12. Which property of plastic makes it useful as a handle for pots and pans?

- (a) is brittle (c) does not conduct electricity well
(b) conducts heat poorly (d) has high density

13. Giselle buys a ring and wants to find what type of gold alloy it is. She measures its volume using a graduated cylinder and finds it is 1.9 cm^3 . Then she measures its mass and discovers it to be 29.5 g. Which alloy is it likely to be? Use the table to answer the question.

$$30/2 = 15$$

Gold (k)	Density (g/cm^3)
10	11.4
14	13.1
18	15.5
24	19.3

- (a) 10k (b) 14k (c) 18k (d) 24k

14. A particle is vibrating, it is able to slip by other particles, and it moves downward. The particle must be a part of a

- (a) solid (b) liquid (c) plasma (d) gas

15. Snow and hail are formed by which two different processes?

- (a) deposition and solidification (c) condensation and evaporation
(b) deposition and evaporation (d) melting and solidification

16. Davy Lamps were used by coalminers of the 19th century. They were called safety lamps because their flame was surrounded by a copper metal screen to prevent the flame from igniting any explosive coal gas. How did the lamp work?

- (a) The screen prevented any gas from getting to the flame.
(b) The screen cooled the heat of the flame to a temperature that would not ignite the gas.
(c) The gas could not ignite inside the lamp.
(d) The gas was not flammable.

Chapter 5 Quiz (continued)

Part D: Short Answer

Use complete sentences or diagrams to answer each question.

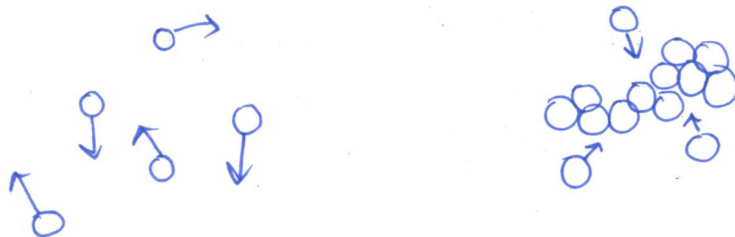
17. James accidentally spills two containers, mixing their contents. He checks and finds that one contained salt crystals, while the other contained powdered sand. Describe a method that he might use to separate the two mixtures without losing any of either mixture.

put all into H_2O → pour of liquid & keep
wash sand multiple times adding washing to
evaporate the water

18. Explain how pouring water on a fire puts out the fire in more than one way.

① water cools fire by taking in heat → liq → steam
② steam is denser than O_2 & smothers fire

19. Using diagrams, describe what happens to a gas as it is rapidly cooled to directly form a crystalline solid such as frost.



20. Describe the properties of diamonds that make them so valuable as

(a) gemstones

(sparkle)

high internal reflection, hardness

(b) industrial cutting stones

hardness

Chapter 6 Quiz

Part A: Matching

1. Match the word or symbol with the appropriate definition.

- | | |
|------------------------|--|
| <u>m</u> A. Hg | (a) developed symbols for the elements |
| <u>F</u> B. metalloid | (b) the majority of known elements |
| <u>H</u> C. W | (c) first noble gas discovered |
| <u>E</u> D. element | (d) elements combined in a specific ratio |
| <u>C</u> E. Ar | (e) tungsten |
| <u>K</u> F. Mendeleev | (f) semiconductor |
| <u>B</u> G. metals | (g) repeating |
| <u>D</u> H. compound | (h) symbol based on its German name |
| <u>G</u> I. periodic | (i) group of elements with the most gases |
| <u>A</u> J. Berzelius | (j) was thought to be an element but is a mixture |
| <u>j</u> K. air | (k) believed in a deeper structure of matter |
| <u>L</u> L. non-metals | (l) the goal of the alchemists |
| <u>L</u> M. Au | (m) the only liquid metal |

Part B: Multiple Choice

Circle the letter beside the answer that best completes the statement or answers the question.

2. If you were to ask one of the ancient Greeks, what would they say the substances in the world were?
- | | |
|----------------------------|----------------------------------|
| (a) mixtures and compounds | (c) mixtures only |
| (b) elements and compounds | <u>(d)</u> mixtures and elements |
3. Which are the four Greek elements?
- | | |
|------------------------------------|--|
| (a) air, water, wood, and silver | <u>(c)</u> earth, air, fire, and water |
| (b) earth, water, fire, and sulfur | (d) wood, fire, air, and water |
4. Which element is represented by the symbol Po?
- | | |
|---------------------|----------------|
| <u>(a)</u> polonium | (c) phosphorus |
| (b) plutonium | (d) potassium |

Chapter 6 Quiz (continued)

5. Which element is represented by the symbol Te?
- (a) technetium (c) tellurium
(b) terbium (d) tungsten
6. Which symbol represents the element copper?
- (a) Co (b) Cu (c) Cr (d) C
7. Which symbol represents the element boron?
- (a) B (b) Bo (c) Br (d) Bn
8. Which of the following is not a property of metals?
- (a) shiny lustre (c) very dense
(b) good heat conductivity (d) prevents electrical flow
9. Which of the groups of elements is most important in the manufacture of computers and microprocessors?
- (a) metals (b) metalloids (c) non-metals (d) all are used
10. The element whose name means "light bearing" in Latin is
- (a) Hg (b) Pb (c) Na (d) P
11. What are the elements and their proportions contained in acetaminophen, if its formula is $C_8H_9NO_2$?
- (a) 9 parts carbon, 8 parts hydrogen, 1 part nitrogen, 2 parts oxygen
(b) 8 parts carbon, 9 parts hydrogen, 2 parts nitrogen, 1 part oxygen
(c) 8 parts carbon, 9 parts hydrogen, 12 parts nickel, 2 parts oxygen
(d) 8 parts carbon, 9 parts hydrogen, 1 part nitrogen, 2 parts oxygen
12. Which of the following is a noble gas?
- (a) xenon (b) carbon dioxide (c) hydrogen (d) oxygen
13. A pure substance that cannot be split up by chemical reaction is called
- (a) a mixture (b) an element (c) a compound (d) a solution
14. Why were the noble gases the last elements to be found?
- (a) They were created by humans.
(b) They do not react naturally with any other elements.
(c) They do not occur naturally.
(d) They were trapped in other substances.

Chapter 6 Quiz (continued)**Part C: Completion**

Complete each sentence.

15. A non-metal that is liquid at room temperature is mercury.
16. Mendeleev arranged his elements first in order of increasing atomic weight.
17. The symbol Pb is for the element lead, based on its Latin name, plumbum.

Part D: Short Answer

Use complete sentences to answer each question.

18. Which of the properties of metals make them a suitable material to be used to transmit electricity?
ductile & conduct electricity
19. Ralph Cramden discovers a new element and is given the opportunity to name the new metal. He decides to call it cramdenite.
- (a) What are all the possible symbols he could choose using Berzelius's system?
C, Cr, Ca, Cm, Cd, Ce, Cn
- (b) Choose one of these symbols that would be acceptable to the chemistry community.
only Cn or Cm can still be used
20. Mendeleev left several gaps in his Periodic Table.
- (a) Name an element that now fills one of those gaps. any one of Scandium, Germanium, Gallium
- (b) Suggest why Mendeleev left these gaps.
Because he was confident in family properties and knew there would be an element to match

