

Study Guide

For Unit Test on Matter: Properties & Change

6TH GRADE Science

Study Guide - Unit Test: Matter: Properties & Change (Friday Nov. 30th)

1. Explain why the iceberg floats instead of sinking to the bottom of the ocean? (density)



Ice floats on water because it is less dense.

2. What is the boiling point of water in Celsius? 100°C

3. Which of these is a property of ice that allows fish to survive in ponds when air temperatures are below 0° C? Ice floats, insulating warmer liquid water below it.

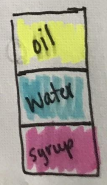
4. What is a physical change? Give an example. Substance's identity is not changed.
candle melting, ice cube → melt, paper ripping

5. Which basic units of matter have the same properties as an element?

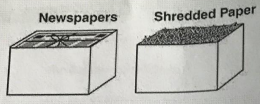
Atom

6. A student is pouring equal amounts of water, maple syrup, and cooking oil into a glass beaker and looking at how the layers settle. Which property of the liquids is the student MOST likely comparing? Recall the density lab and explain the layers you saw.

Density $d = \frac{\text{mass}}{\text{Volume}}$



7. A student has two identical boxes. The student fills one box with bundled newspapers and the second box with shredded paper.



Explain volume, mass, density with the two different boxes.
Volume = same for both boxes
mass = different
density = different

8. ¹²Mg
24.305
Magnesium

p = + nucleus
N = # nucleus
e = - electron cloud
hot

9. What is the atomic number? # protons

10. Anita heats a beaker containing water. As the temperature of the water increases, which change to the water molecules occurs? molecules move at a faster rate.

11. What happens at the boiling point of a substance?

liquid → gas

12. Two samples of gold have the same density.



13. What is the equation for density?

$$d = m/v$$

Work out the following:

① $d = 50g/25cm^3$
 $d = 2g/cm^3$

② $d = 100g/10cm^3$
 $d = 10g/cm^3$

③ $d = 125g/5cm^3$
 $d = 25g/cm^3$ highest

④ $d = 150g/10cm^3$
 $d = 15g/cm^3$

$$\frac{150}{10}$$

Masses and Volumes of Cubes

Cube	Mass (g)	Volume (cm ³)
1	50	25
2	100	10
3	125	5
4	150	10

14. Which of these elements is a solid at room temperature? Look on your periodic table.

C = solid

carbon

O = gas
oxygen

N = gas
Nitrogen

H = gas
hydrogen

15. Define Buoyant.

able to stay afloat or rise to the top of a liquid or gas.

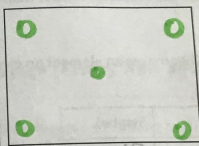
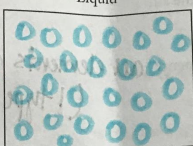
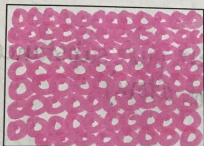
16. Appearance, texture, and density are classified as [physical / chemical] properties.

17. Draw the pictures for solid, liquid, gas.

Solid

Liquid

Gas



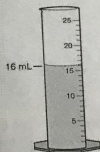
18. One characteristic that is unique to water is that it:

(solid, liquid, gas) on Earth.

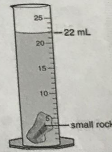
exists naturally in three states

19. Students added a small rock to a graduated cylinder with 16 mL of water. The water level rose 6 mL.

Before Adding Small Rock



After Adding Small Rock



The student subtracted the two water levels. Which property of the rock were the students measuring?

Volume

20. A salvage yard contains a mixture of iron, glass, aluminum, and plastic. Which property of iron does the salvage yard take advantage of when separating the iron from the rest of the materials?

magnetic

21. When liquid water freezes, it forms ice. What is the physical state of an ice cube?

Solid

liquid → solid

22. During a demonstration, a teacher pours CO_2 gas over a candle, putting out the flame.

Which physical property allows the teacher to pour the CO_2 gas?

- A the gas is more dense than the air.
- B the gas is more visible than the air.
- C the gas smells different from the air.
- D the gas evaporates faster than the air.

23. What makes an element an element?

all elements are pure substances.
(1 type of atom)

24.

Element	Symbol
Chlorine	Cl
Cobalt	Co
Chromium	Cr
Carbon	C