

CHANGES IN PROPERTIES VIDEO

Focus Questions

1. What is matter?
ANYTHING THAT HAS MASS & TAKES UP SPACE
2. What are atoms?
SMALLEST WHOLE UNITS OF MATTER
3. What are some different ways scientists describe matter?
BY PHYSICAL & CHEMICAL PROPERTIES
4. What are some physical properties of matter?
DENSITY, STATE, CHANGE OF STATE TEMPERATURES, SOLUBILITY, MALLEABILITY, DUCTILITY, THERMAL CONDUCTIVITY, COLOR, ODOR, MASS, VOLUME
5. What are some chemical properties of matter?
FLAMMABILITY, RADIOACTIVITY, REACTIVITY, ACIDITY
6. What is the difference between a physical change and a chemical change?
CHEMICAL CHANGE: THE CHEMICAL IDENTITY (TYPES OF ATOMS) CHANGES
⊕ PHYSICAL PROPERTIES CHANGE TOO, IS NOT REVERSIBLE
PHYSICAL CHANGE: ONLY PHYSICAL PROPERTIES CHANGE. CAN BE REVERSIBLE
7. How is an object's mass measured?
 - BALANCE (NOT A SCALE)
 - BY AMOUNT OF MATTER IN IT.
8. What is the difference between volume and density?
VOLUME: 3 DIMENSIONAL SPACE AN OBJECT OCCUPIES
DENSITY: $MASS \div VOLUME$
9. What are the phases of matter?
ALSO CALLED STATES OF MATTER: SOLID, LIQUID, GAS, PLASMA
10. What is needed for matter to change phase?
CHANGES IN TEMPERATURE (AND/OR PRESSURE)
11. How are solids, liquids and gases different from one another, in terms of their shape and volume?

STATE	SHAPE	VOLUME
SOLID	DEFINITE	DEFINITE
LIQUID	INDEFINITE	DEFINITE
GAS	INDEFINITE	INDEFINITE

12. How is heat energy involved in changing the phase of water?

INCREASE HEAT: SOLID \rightarrow LIQ. \rightarrow GAS
DECREASE HEAT: GAS \rightarrow LIQ. \rightarrow SOLID

13. How are water molecules packed when they are in a liquid state?

How are they packed when they are in a gaseous state?

LIQ. - ^{MORE} TIGHTLY PACKED THAN GASEOUS
GAS - VERY FREE

14. What happens when a substance reaches its freezing point?

ATOMS STOP MOVING FROM PLACE TO PLACE -
DEFINITE SHAPE FORMS

15. What happens when the boiling point of a substance is reached?

ATOMS MOVE FREELY AWAY FROM EACH OTHER

16. What does it mean to say that the freezing point and the melting point of water are the same?

- IF WATER COOLS DOWN TO 0°C , IT FREEZES
- IF WATER HEATS UP TO 0°C , IT MELTS

17. What does vaporization mean? Is vaporization a chemical change or a physical change?

- MEANS "TURNS TO VAPOR (GAS)"
- PHYSICAL CHANGE - SUBSTANCE STILL MADE OF SAME TYPES OF ATOMS

18. How does evaporation occur?

- SLOWLY
- BELOW BOILING POINT
- FEW MOLECULES/ATOMS AT A TIME

19. What is sublimation? What is an example of a substance that sublimates?

- SUBSTANCE GOES FROM SOLID DIRECTLY TO GAS
- ICE CAN SUBLIMATE
- DRY ICE (FROZEN CO_2)

20. How does condensation occur?

- GAS LOSES HEAT & TURNS TO LIQUID