

Chemical and Physical Changes

Important info

Atom- small particle of an object that has the same properties as the object (building block of matter)

Molecule – two or more atoms (held together by chemical bonds and act as a unit)

Element- a substance made up of one kind of atom

Mixture –two or more substances that do not change when you put them together

Compound- substance made of two or more elements that are chemically joined in a specific combination
element substance made of only one kind of atom

Physical vs. Chemical Changes

Standard:

S5P2a Investigate physical changes by separating mixtures and manipulating (cutting, tearing, folding) paper to demonstrate examples of physical changes.

Is a change that does not make a new substance.

Physical Change

Examples: Cutting paper, Carving wood, Boiling Water, Ice melting, ripping fabric, melting gold, freezing meat, freezing water to ice

Is two or more substances that do not change when you put them together. You may also separate the parts.

Mixture

Example: Mixed nuts, fruit salad, trail mix,

EQ: How can you tell if a physical change has occurred?

Study JAMs

- <http://studyjams.scholastic.com/studyjams/jams/science/index.htm>
- Survey
- Visit <http://www.unitedstreaming.com> and type the title of this task (Matter and Its Properties: Changes In Matter)

Solid, Liquid, Gas

<http://wps.prenhall.com/wps/media/objects/165/169061/blb9ch0102.html>

- Solid-
- Liquid-
- Gas-
- EQ. How do different forms of water exist on Earth?

TeamWork

- Workbook 46-47

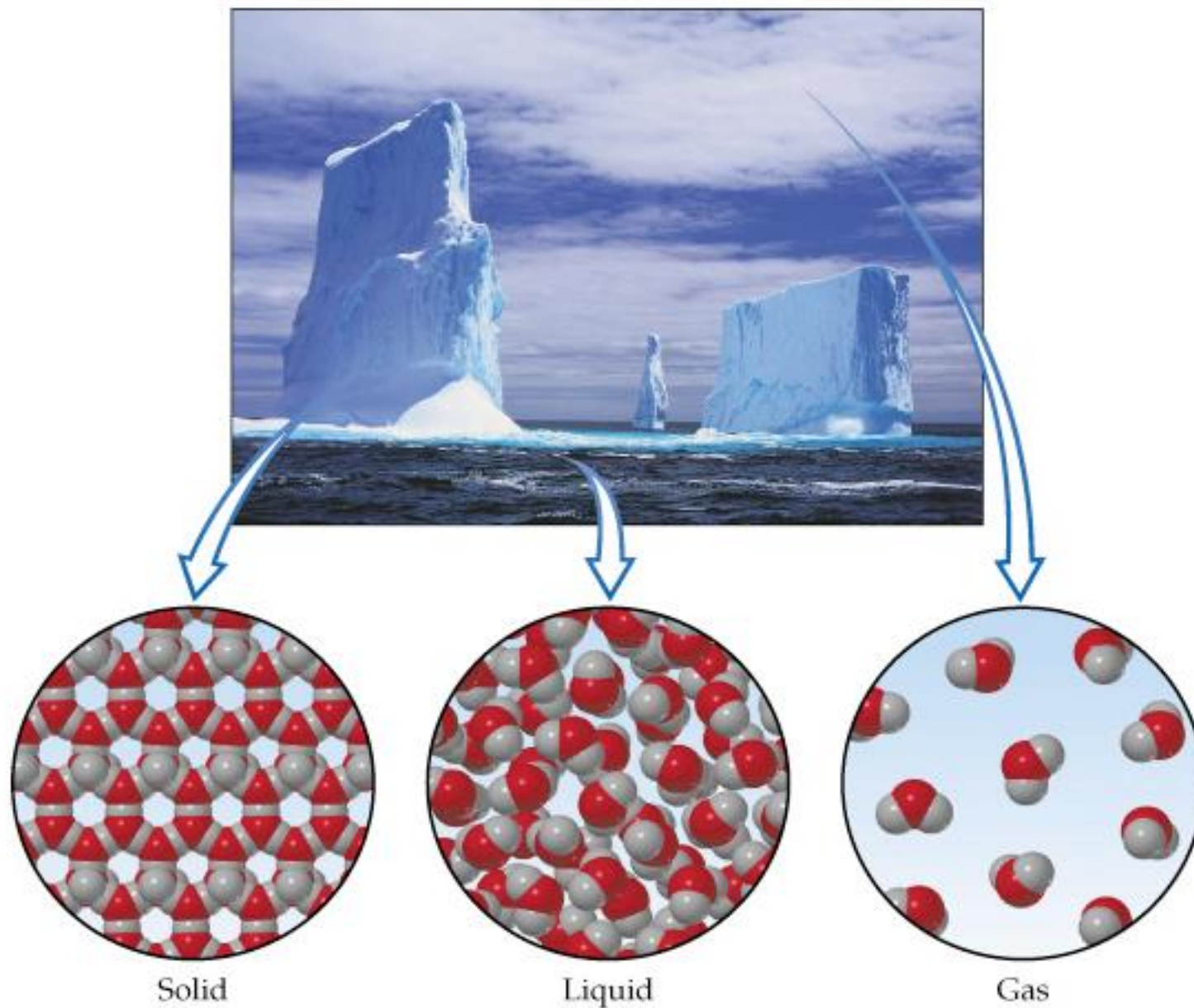


Figure 1.4 The three physical states of water are water vapor, liquid water, and ice. In this photo we see both the liquid and solid states

Solid, Liquid, Gas

- Matter is neither created nor destroyed. It merely changes.
- •Water does change from a liquid to a gas when it reaches boiling temperature. It can also evaporate at room temperature or even when it is cold outside.
- Matter freezes (becomes a solid) at different temperatures. For example glue and wax freeze at room temperature. Water freezes at 0°C.

Physical vs. Chemical Changes

Standard: S5P2c Investigate the properties of a substance before, during, and after a chemical reaction to find evidence of change.

Physical property
Is information about matter that you can observe and measure. See page 50 in your science workbook.

Chemical Property
Is information about how matter interacts with other matter. See page 51.

EQ: How can you tell if a chemical change has occurred?

Physical vs. Chemical Changes

Standard:	S5P2c
Chemical Change	-when matter interacts with another substance to form a new substance (Sci. WB p. 52)
Compound	-a substance made up of two or more elements Water is an example.-made up of hydrogen and oxygen
Conservation of Matter	Law of conservation of mass -The mass of the substances you had before the chemical change will always equal the mass of the substances you have after the chemical reaction.
	EQ: How can you tell if a chemical change has occurred?

Physical vs. Chemical Changes

Standard:

S5P1 Students will verify that an object is the sum of its parts.

a. Demonstrate that the mass of an object is equal to the sum of its parts by manipulating and measuring different

Weight

Mass

Cookie
Experiment

EQ: What is the difference between weight and mass?