

Unit 2

NAME

Class Work

10/10/13

2.8 Heating Curve II

SPARK

1. Complete the first page of the Phase Change Worksheets

Objective

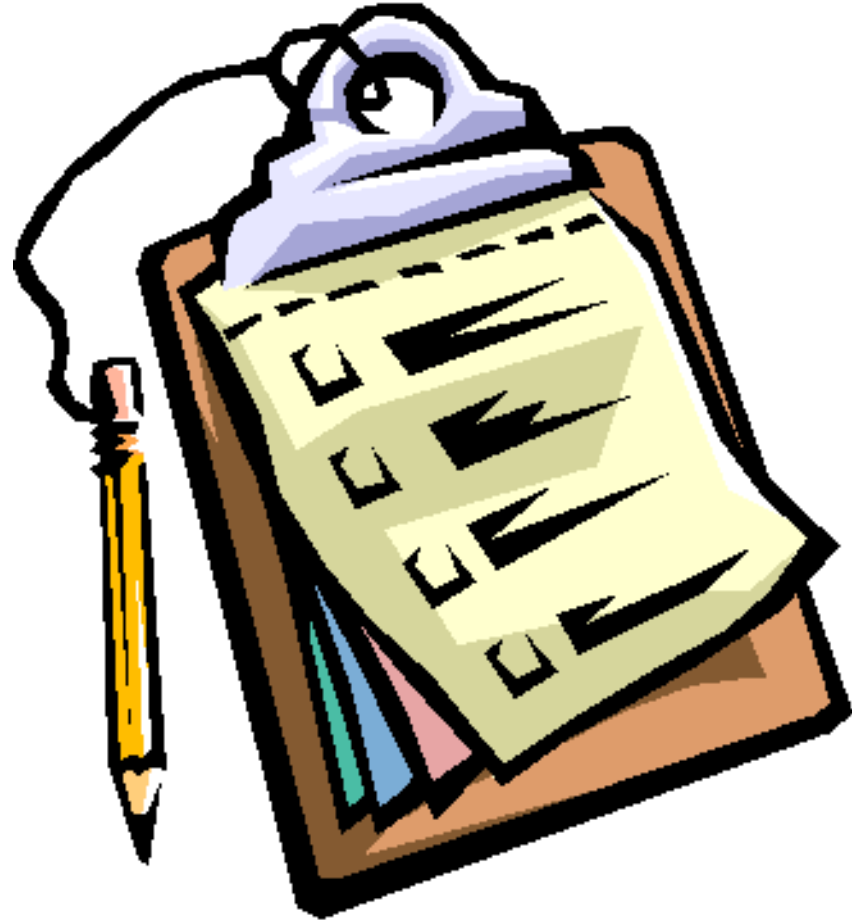
SWBAT describe the shape of a heating or cooling curve as a substance changes from a solid to a gas.

Cations

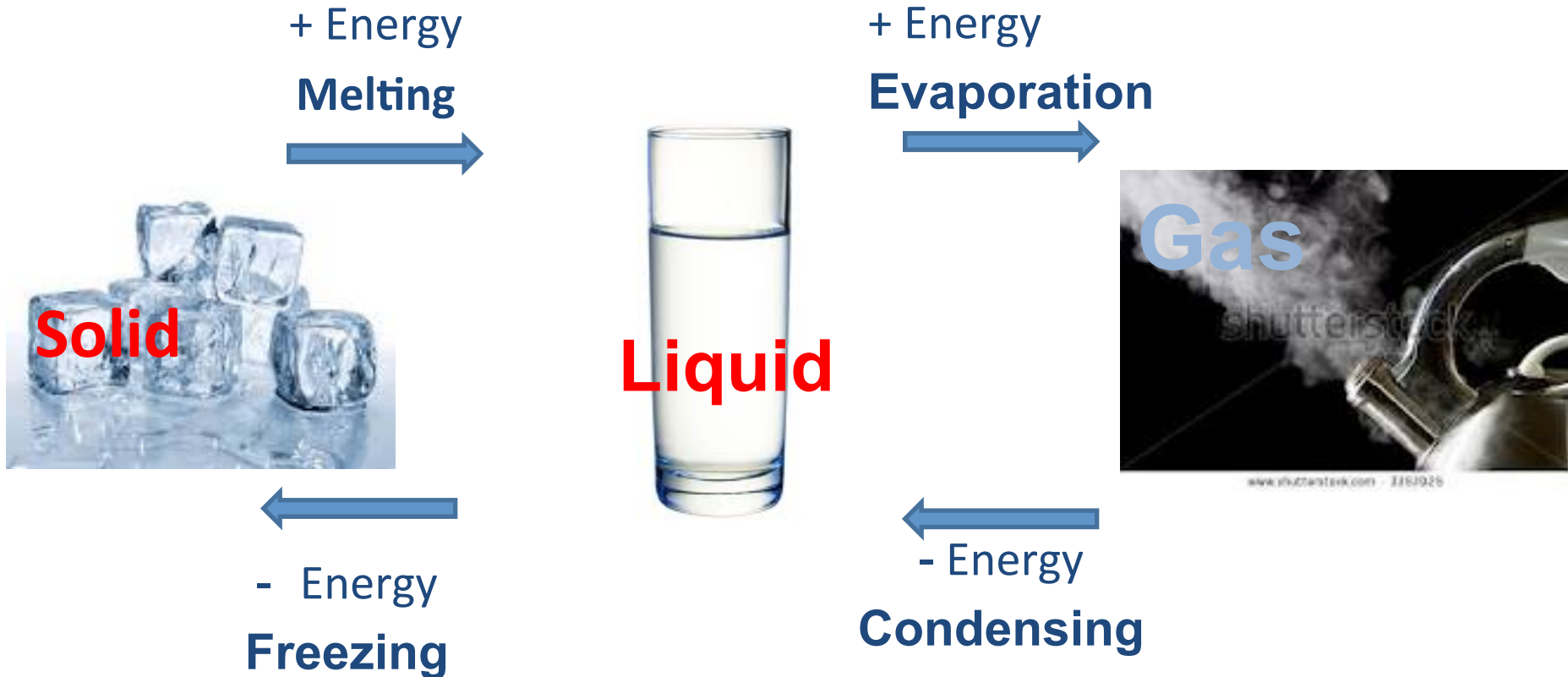
- Binder Quiz!

Agenda:

- SPARK
- Objective
- Review
- Analogy
- Homework



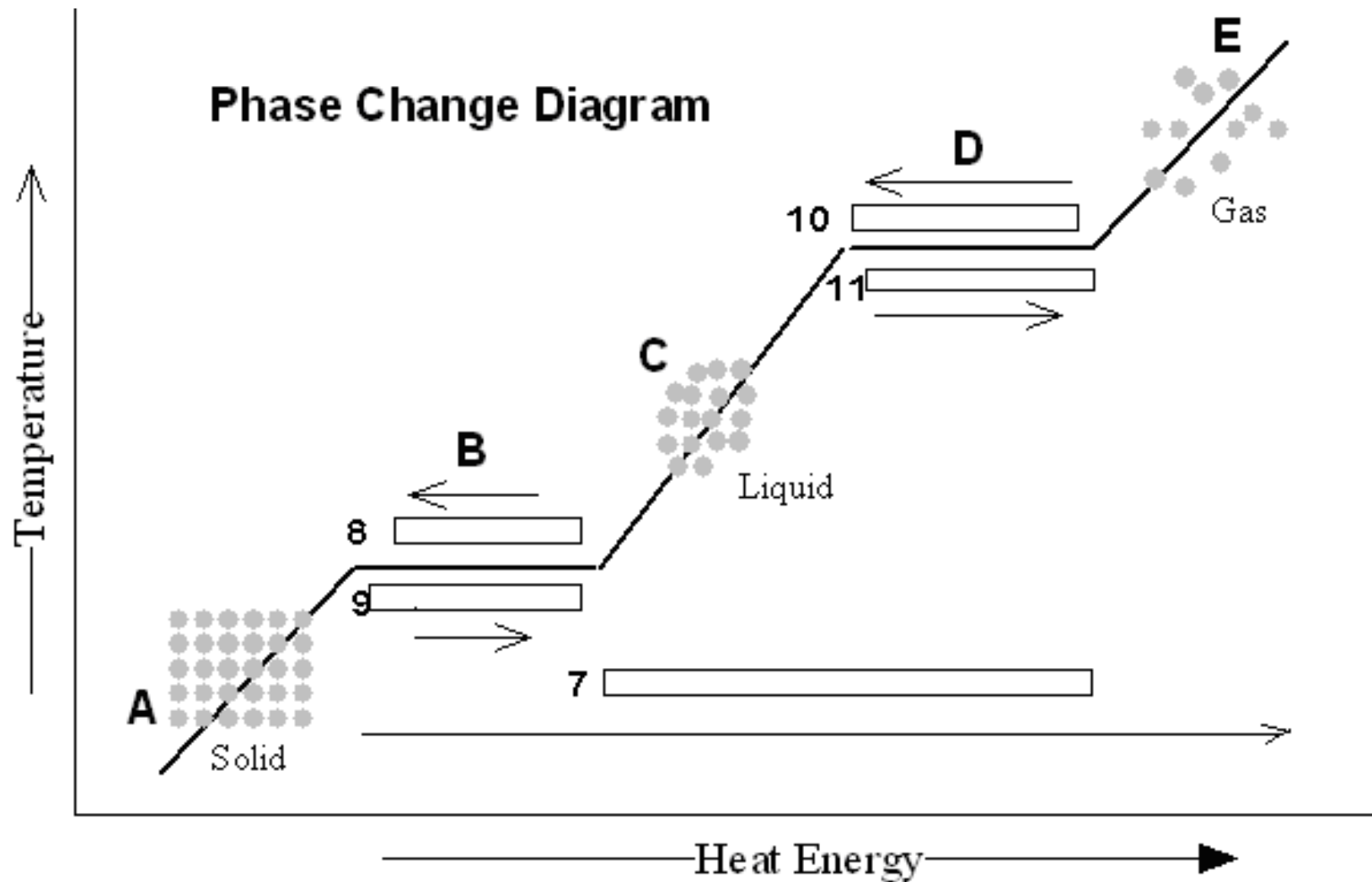
Phase Changes



Heating Curves

- Heating curves show how the temperature changes as a substance is heated up.

Let's Label this!



Physical Properties on a Heating Curve

B = melting point

temperature at which solid intermolecular bonds are broken, turning substance into a liquid.

Melting, also known as FUSION

What does intermolecular mean?

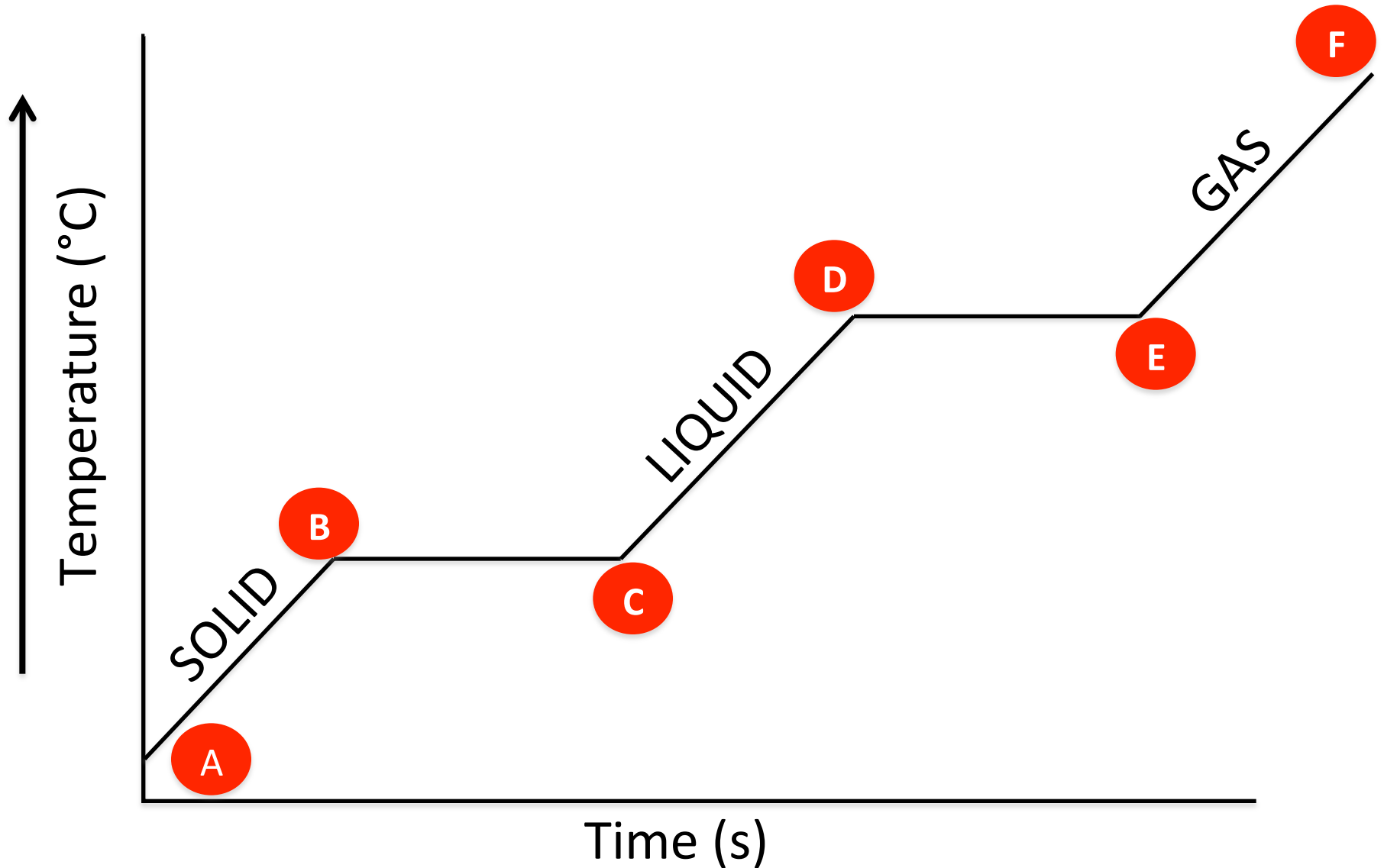
Physical Properties on a Heating Curve

D = boiling point

temperature at which liquid intermolecular bonds are broken, turning substance into a gas.

Boiling, also known as VAPORIZATION

Heating Curves



What's Happening on a Heating Curve?

SECTION	What's happening?	# of Phases Present	PE or KE
AB	Heating of a solid	1	KE increases
BC	Melting of a solid	2	PE increases, KE constant
CD	Heating of a liquid	1	KE increases
DE	Boiling of a liquid	2	PE increases, KE constant
EF	Heating of a gas	1	KE increases

Lab #4

- Construct a graph using the data points that make the most sense to you (every 60 seconds?)
- Answer conclusions questions in paragraph form on the back!

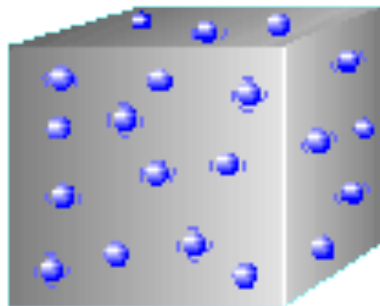
HOMEWORK

Complete Phase Change Worksheets

Extra

Phase Changes - Energy

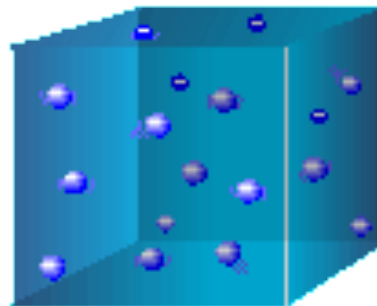
- In order to change the phase of a substance, energy must be absorbed or released in the form of heat.
- At higher temperatures, particles have more kinetic energy and can move further apart, overcoming the *intermolecular forces*.



SOLID

vibration only

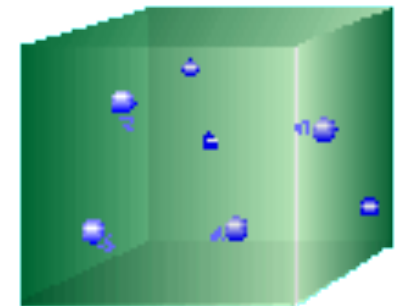
close together



LIQUID

some rotation,
vibration and
translation

further apart



GAS

mainly
translation

very far apart

Phase Changes

When you are going from the solid phase to a gaseous phase, it is endothermic, energy needs to be added.

- Temperature is increased
- Particles are spread further apart

Phase Changes

When you are going from the gaseous phase to a solid phase, it is exothermic, energy is released.

- Temperature is decreased
- Particles are brought closer together

During the phase change, temperature does not increase or decrease. All energy absorbed or released goes into rearranging the particles in the material (potential energy!)