

Name _____

Period _____

States of Matter

Learning Goal:

Students will be able to describe the particulate model of matter for a solid liquid and gas. Students will understand the arrangement, motion, and energy of the particles in each phase.

- How the molecules in a solid, liquid and gas compare to each other.
- How temperature relates to the kinetic energy of molecules.

Procedure:

- Open the internet browser and enter the address: <http://phet.colorado.edu>
- Click on “Play with Sims” and select “Chemistry” from the menu on the left.
- Open the “States of Matter” Simulation and select “Run Now”

Investigation:

1. Predict what the molecules of a solid, liquid and gas look like. Illustrate your prediction with a drawing.

Solid

Liquid

Gas

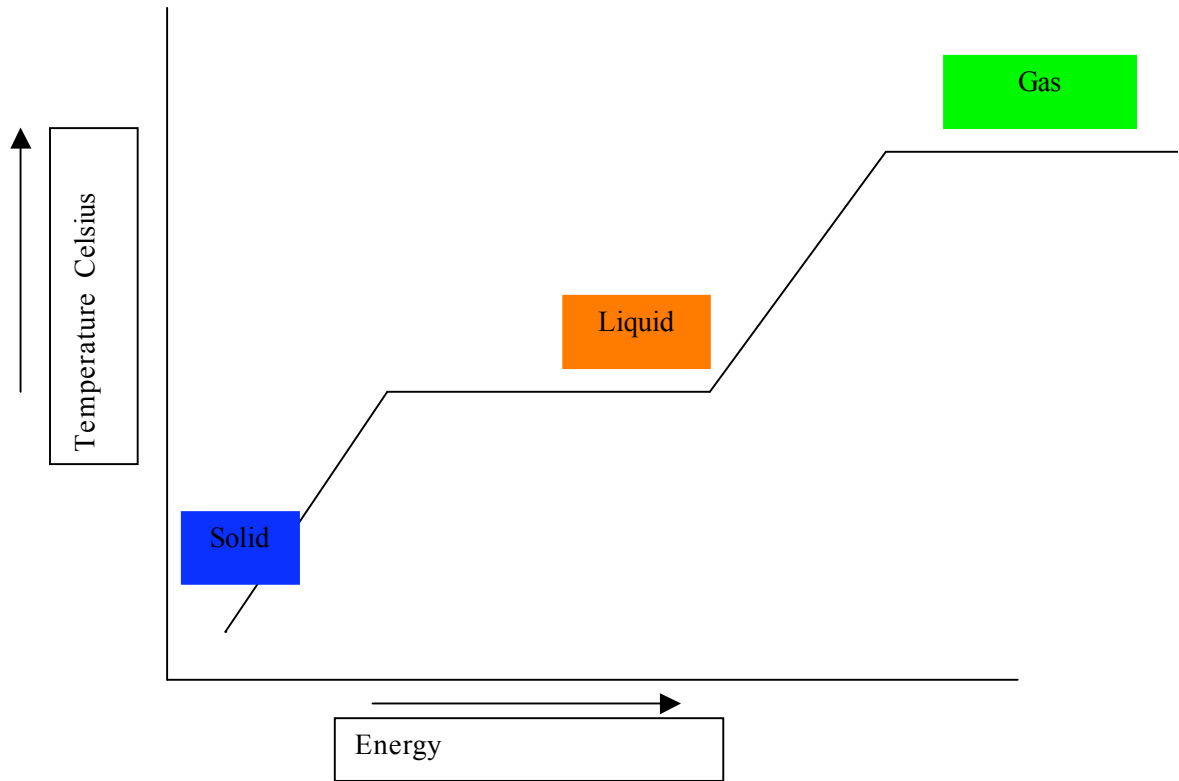
- 1a. Predict how a change in temperature (heat or cold) will effect each phase change.

2. Complete the table below by exploring the “Solid, Liquid, Gas” tab in the simulation. **Test** your predictions and record your observations by recording the temperature and illustrations of each substance in the three states of matter.

Substances	Observations		
	Solid	Liquid	Gas
Neon	Temperature: Illustration:	Temperature: Illustration:	Temperature: Illustration:
Argon	Temperature: Illustration:	Temperature: Illustration:	Temperature: Illustration:
Oxygen	Temperature: Illustration:	Temperature: Illustration:	Temperature: Illustration:
Water	Temperature: Illustration:	Temperature: Illustration:	Temperature: Illustration:

3. Interpret the graph of Kinetic Energy vs. Temperature.

Using the graph describe the relationship between Kinetic Energy and Temperature.



4. Write a conclusion, using the simulation and graph.

Use what you have learned in this activity to support the following two statements.

- How the molecules in a solid, liquid and gas compare to each other.
- How temperature relates to the kinetic energy of molecules.