Name:

Date:

Class:

**Heat it Up!**

**INTRODUCTION**

In class, you have already taken a look at states of matter. You learned about the Kinetic Molecular Theory (KMT); which if you recall states that if temperature increases, so does the motion of the particles that are heated. Today, you will put it into practice using an online simulation that will use Neon, Water, Oxygen and Argon. You will see how each changes from one state to another.

**Procedure**

1. Log into your computer
2. Go to the link for today on the class website or type <http://phet.colorado.edu/en/simulation/states-of-matter-basics> into your browser
3. Click run
4. Take a moment to explore the site so that you know what each button does
5. Be sure that “solid, liquid, gas” is clicked at the top left
6. Start off with solids of each substance at the right
7. Change the temperature up or down by adding fire or ice
8. Record what happens in the chart provided

**Observations**

**Title here:**

|  |  |  |
| --- | --- | --- |
| **Substance** | **Increasing Temp.** | **Decreasing Temp** |
| **Neon** |  |  |
| **Argon** |  |  |
| **Oxygen** |  |  |
| **Water** |  |  |

**Procedure redux**

Use the simulation to complete the following chart for temperatures of the different states of each substance

**Title here:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Substance** | **Solid Temp** | **Liquid Temp** | **Gas Temp** |
| Argon |  |  |  |
| Neon |  |  |  |
| Oxygen |  |  |  |
| Water |  |  |  |

**Going Further**

On the same page, click on the “Phase Changes” tab at the top left. What is the relationship between pressure, temperature and the state of matter?

**Questions**

1. What happened to the speed of the particles in this lab as you increased the temperature?
2. Do you findings agree with the Kinetic Molecular Theory? Explain.
3. So, based on the results of this activity, what are two differences between the states of solids, liquids and gasses?