Phase Changes using States of Matter PhET sim Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Click on Neon as type of atom or molecule. Record all temperatures in Kelvin (K).**

1. Heat the neon to 50K.

What happens to the pressure? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Add more atoms of neon using the pump. Try to double the number of atoms.

What happens to the pressure? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Now push down on the lid of the container. What happens to the pressure?

What happens to the temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Does the volume of the container change as well? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Click on Reset All. Click on Water as the type of molecule.**

4. Look on the right at the pressure vs. temperature scale. Try to change the temperature or pressure to make the red dot move to the triple point.

What do you think the triple point is? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Are you able to keep the red dot on the triple point? Why or why not?

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**Click on Reset All. Click on Oxygen as the type of molecule.**

At what temperature is the oxygen at first? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Add heat.

At approximately what temperature does the oxygen become a liquid? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

At approximately what temperature does the oxygen become a gas? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Adjust the pressure when oxygen is a gas. Push down on the lid then lift it.

What happens to the molecules when you push down then lift up? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does the pressure have anything to do with a change in phase? Explain. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_