Date: _____     Name: _____

## Coding for Particle Theory of Matter

This activity was created by Zoe.

**Explaining changes of state using if-statements:**

1. **Solid** = particles held together strongly
2. **Heated** = particles moving faster
3. **Cooled** = particles moving slower

4. if **Solid** and **Heated**:
     5. **Particles** = vibrate faster until melting point
     6. if **Solid** and **Cooled**:
          7. **Particles** = vibrate slower until solidification

In the above example of code, lines 1, 2, and 3 are all variables representing certain things. The variable **Solid** is defined by its particles being held together strongly. The variable **Heated** represents how particles move faster when heated, and the variable **Cooled** represents how particles move slower when frozen or solidified.

Lines 4 and 5 are saying that if a **Solid** is **Heated**, its particles will vibrate faster until the substance reaches its melting point.

Lines 6 and 7 are saying that if a **Solid** is **Cooled**, its particles will vibrate slower until the substance reaches its solidification point.

Now, can you help me?!
Using the examples above, can you fill in the code below for the effects of heating and cooling on liquids and gases?
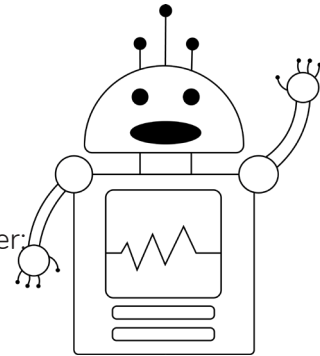
1. Liquid = particles move freely and take the shape of their container;

2. Heated =_____ ;

3. Cooled = particles moving slower;

4. if Liquid and Heated:
     5. Particles =_____ ;

6. if Liquid and Cooled:
     7. Particles =_____ ;

1. Gas = particles have large spaces in between them and take the shape of their container;

2. Heated = particles moving faster;

3. Cooled =_____ ;

4. if Gas and Cooled:
     5. Particles =_____ ;

6. if Gas and Heated:
     7. Particles =_____ ;

SLOs: 7-2-01, 7-2-03