

WATER CYCLE

The goal of this activity is to look at energy transfers in the water cycle and the consequences as energy moves between systems. We're primarily looking at thermal energy today.

What Do We Already Know?

On your Water Cycle chart, label the transitions between states (phases) of water.

- ↘ Think about which transitions require that energy is ADDED to the water particles (the water particles GAIN energy)
- ↘ Think about which transitions require that the water particles LOSE energy.
- ↘ If you have to ADD energy to the water particle, where does it the energy go?
- ↘ If the water particle LOSES energy, where does the energy go?

Alcohol & Thermometer

Wet a cotton ball with alcohol, rub the length of the thermometer ONCE and then remove it. What do you observe?

- ↘ What happened to the layer of alcohol you put on the thermometer?

- ↘ What happened to the thermometer?

On your white board, draw a picture of the particles in the thermometer, the alcohol, and the air around the thermometer. You can copy that picture here:

Was there a phase (state) change?

Was there a transfer of energy? How do you know?

- ↘ **What lost energy?**

- ↘ **What gained energy?**

Jar of Ice

Be ready to make observations right away, paying attention to both the inside *and* the outside of the jar.

- ↳ Put ice in a jar
- ↳ Put the lid on the jar
- ↳ Wipe it with a paper towel.

Watch the jar for a few minutes. What do you observe?

Was there a phase (state) change?

Was there a transfer of energy? How do you know?

↳ **What lost energy?**

↳ **What gained energy?**

Let's think about some model statements that relate

- ↳ **Evaporation or condensation**
- ↳ **Gain or loss of energy by the WATER particles**
- ↳ **Gain or loss of energy in the OTHER particles in the environment.**