

### **Procedure for 4.2: Investigating How Warm Air and Cool Air Move**

1. Make a prediction about the temperature of the air in the cylinder.
  - a. How do you think the air will move above a hot surface?
  - b. How do you think air will move above a cold surface?
2. Obtain a container of ice and a container half-filled with hot water.
3. Place a convection tube over each container.
4. When you are ready, ask your teacher to light your group's punk stick. Immediately blow it out and hold the punk over the aluminum pan.
5. After the lights are turned off, carefully place the punk into the lowermost hole in the convection tube with the hot water. Place it through the hole but do not let it touch any of the materials.
6. Use your flashlight to observe the movement of the smoke. You may record what happens with your iPad.
7. Repeat step 5 and 6 for the convection tube with ice.
8. When your observations are complete, put out the punk stick by tapping it into the aluminum pan. Do not put it in water.
9. Drain the hot water in the sink and return the ice to the front table.
10. Clean any condensation from the convection tube.