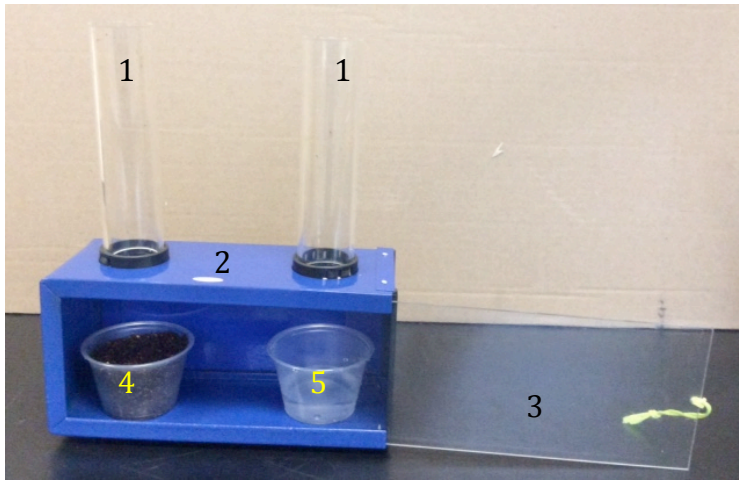


## ES2 – Activity 3.1 – How do Differences in Temperature Affect Air Masses.



1. Chimneys
2. Convection chamber
3. PlexiGlass front
4. 40g hot dirt
5. 40g ice water

### Procedures – check off steps as you complete them.

1. Use your small beaker as a transfer device to collect about 50ml of ice & ice water from the front counter. Tare the “water” cup and load it with 40 grams of the ice & ice water (more ice is better). Extra water can go down the drain of your assigned sink and place the beaker upside down in your tub.
2. Place the cup of ice water under the chimney on the right side of the box.
3. Carefully close the front of the box.
4. Take the black bowl to the front counter. Use the plastic cup in the dirt bowl to put a full scoop of dirt in your black bowl.
5. At your table, tare the “dirt” plastic cup and load it with 40 grams of dirt from the black bowl. Leave any extra dirt in the black bowl.
6. Microwave the dirt for 30 seconds. Push the button on the lower right of the microwave labeled “Start/+30sec.”
7. Place the dish of hot soil under the chimney on the left side of the box.
8. Raise your hand to indicate that you are ready for your incense to be lit. Let the incense burn for about 4 seconds, then blow it out.
9. Hold the incense with the smoking end at the opening of the chimney above the cold water. Do not let the incense touch the plastic chimney.
10. Do not move around or bump the table while you are watching the smoke, because it will disturb the air inside the box.

## **ES2 – Activity 3.1 – How do Differences in Temperature Affect Air Masses.**

11. Shine the flashlight both at the window and chimney of the apparatus to help you see the smoke.
12. Make a labeled diagram of what you observe happening in the box labeled Trial 1 on SN p24.
13. Microwave your dirt for 30 seconds.
14. Hold the incense with the smoking end at the opening of the chimney above the hot dirt. Do not let the incense touch the plastic chimney.
15. Do not move around or bump the table while you are watching the smoke, because it will disturb the air inside the box.
16. Shine the flashlight at the window of the apparatus to help you see the smoke.
17. Make a labeled diagram of what you observe happening in the box labeled Trial 2 on SN p25.
18. Clean-up (see directions below)

### **Clean-up – check off steps as you complete them.**

1. Dirt goes back in the bowl on the front counter. Use your finger to wipe any remaining dirt back into the bowl. Plastic cup goes back in your tub.
2. Water down the drain. Plastic cup goes back in your tub, next to the dirt cup (NOT stacked).
3. Tubes inside convection chamber. Convection chamber closed & on its side, so I can see the tubes. Scale on top of the convection chamber so I can see the number.
4. Extinguish the Incense stick in the larger beaker in the corner of your tub.
5. Black bowl and spoon in corner of tub.
6. Flashlight in holder on front counter.
7. Seated and silent so I can check your tub.
8. Work on SN p26 – questions 1 & 2.