This is a discrepant event that can be used to show students how convection currents work and to get the students to think about what is happening in the bottles and how it is happening.

Materials:

* 4 Gatorade Bottles
* Hot water
* Cold water
* Food coloring; at least two different colors
* 2 small pieces of Cardboard or 2 playing card

**Do this out of view of students. It’ll be best to have this ready before students enter classroom.**

1. Fill 2 gatorade bottles with cold water (ice water can be used, make sure the ice is melted so no condensation appears on the bottle) to the brim
2. Fill 2 gatorade bottles with warm/hot water (water needs to be warmer than cold water) to the brim
3. Place 2-4 drops of blue food coloring in the bottles with cold water; let drops mix into the water
4. Place 2-4 drops of red food coloring in the bottles with hot water; let the drops mix into the water

**Conduct this portion of the experiment in front of students.**

1. Place a piece of cardboard/playing card over one bottle with cold water and another over the bottle with hot water. Set these aside. These bottles are going to go on top of the bottles placed in front of the class.
2. Place the other bottle with cold water and the other bottle with hot water side-by-side in front of the class.
3. Have the students make observations about the bottles.
4. Now place the bottle with hot water and the cardboard or playing card over the bottle that is in front of the students. Place the other bottle (the cold bottle) over the bottle with hot water.
5. Remove the cardboard from in between both sets of bottles.
6. Have the students make observations.

**Have this demonstration lead into your discussion about heat transfer and convection.**