

## Surface Temperature Experiment

**Objective:** To replicate experiments that scientists do to check the variance between the surface temperature and lower temperatures at depth

**Age:** 4<sup>th</sup>-10<sup>th</sup> grade

**Time Allowance:** Set up – 30 minutes; day long activity

**Materials:** large, light colored container (gray/yellow 32 gal. garbage bin?); something on which to place the paint bucket so that it's level with the top of the garbage bin; insulation such as popcorn packing material or styrofoam; white 5 gallon paint bucket; water; A VERY SUNNY DAY in spring, summer or fall; 2 high grade thermometers; something to weight a thermometer; wire/tape

### **Instruction:**

1. Place the large container outside on something that doesn't conduct heat, like dirt (not the blacktop). Do this no later than 10am. Make sure it will get full sun for the entire school day.
2. Place the platform that works for you inside the bin.
3. Place the 5 gallon bucket on top of that so that it is level with the garbage bin or a bit higher.
4. Place the insulation all around the 5 gallon bucket to insulate the bucket from the light/heat hitting it from the sides.
5. Put one thermometer in the bucket – anchor it.
6. Wire or tape the other thermometer to the very top so that it will be barely immersed in the water.
7. Fill the bucket with water.
8. Leave it alone and make sure it is not bothered all day.
9. Prior to the end of the school day, check the readings on both thermometers. Hopefully, the one at the top of the bucket will have a higher temperature reading than the one at the bottom, mimicking the process that goes on all over the world's oceans every day.