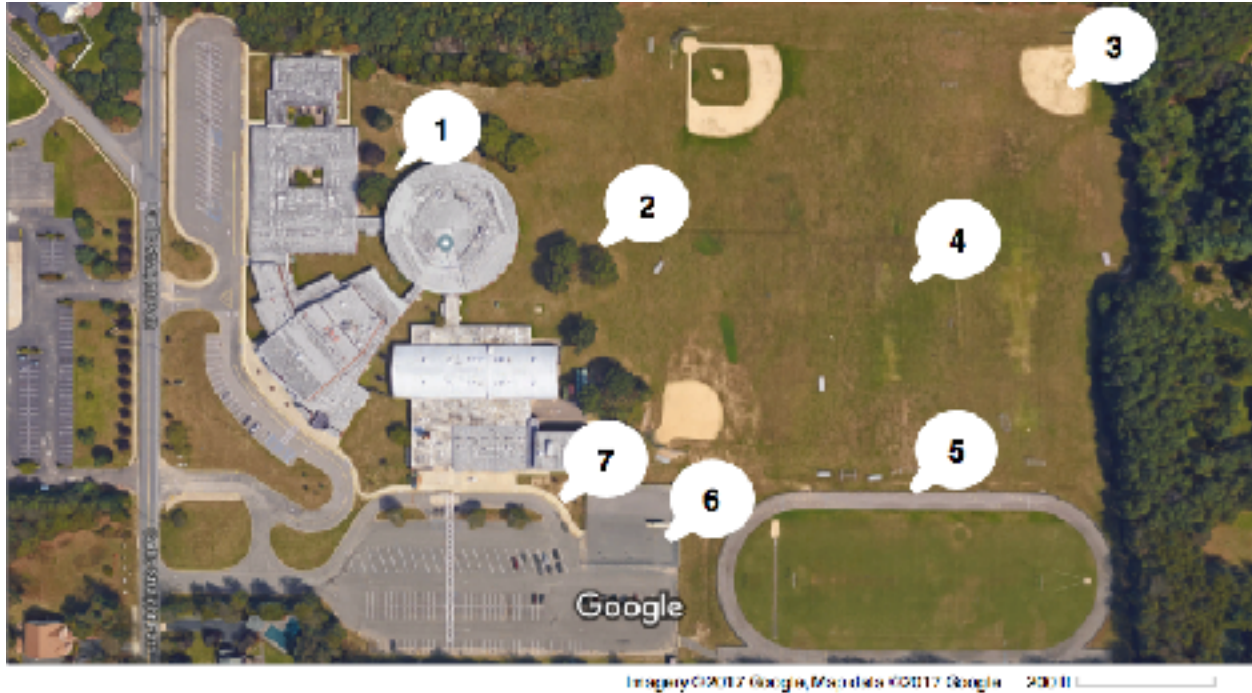


# Does the Earth Heat Up Evenly?



- Please remember the rules for using an infrared thermometer. Also, be consistent with the way you take your readings by using a meter stick.
- On #2 take a temperature reading on the North and South side of the tree.
- #7 is the blacktop on the road. You can get this measurement by standing on the sidewalk.

Location	Air Temperature	Ground Temperature	Soil Temperature
1			
2	North: South:	North: South:	North: South:
3			
4			
5			
6			
7			

Name: \_\_\_\_\_ Date: \_\_\_\_\_

***The uneven heating of the Earth's surface is the cause of weather.***

**Background information:** We know that the Earth is heated by the sun and that temperature is a measure of how effectively the Earth is being heated. Insolation is the portion of the Sun's energy that is received by the Earth. Only about 50% of the sun's energy reaches the Earth's surface. Most is absorbed or reflected by the atmosphere. In this lab you will be exploring why the Earth's surface is heated unevenly.

**Objective:** Using our Candlewood property, collect data to provide evidence that the earth is heated unevenly by the sun.

**Procedure:** In your lab groups, use the infrared digital thermometer and the regular thermometer to collect temperature data. Start at the number that represents your lab group and proceed in that order. So if you are lab group 4, your pattern will be 4, 5, 6, 7, 1, 2 & 3. All temperature readings should be in Celsius.

- Do not breath onto or hold the sensors.
- For air temperature collect the data at approximately 1.5 meters above the ground.
- All 1-2 minutes for the sensor to adjust to the location before recording the temperature.
- For ground temperature, place the sensor approximately 3 cm into the ground to collect data. If it's a solid, like the road or track, place the sensor on to the surface.

**Hypothesis:** Before you go outside with your group, write a prediction about where you think you will find the highest and lowest temperatures. Use the format of "If ....., then ....., because.."

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**Prediction:** With your lab group, brainstorm reasons why the uneven heating of the Earth's surface would cause weather?

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**Analysis:** Does your data support the idea that the Earth's surface is heated unevenly? Give specific examples and defend with evidence to support your information. (Research it!)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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