

Down To Earth: Mission Sensor Watch

Activity 1: Comparing Air To Surface Temperature In Your Community

1. Record the ambient air temperature reported by a weather app for your area
2. Take a thermometer outside and put it on the pavement in a parking lot or similar area.
3. *Make a prediction:* Will the temperature on the pavement be hotter or cooler than the ambient temperature around you?
4. After five minutes, record the temperature from the paved surface on the chart.
5. Move the thermometer to the grass or a mulched plant bed.
6. *Make a prediction:* Do you think the temperature on the grass will be hotter or cooler than your reading from the pavement?
7. After five minutes, record the temperature of the grass's surface on the chart.
8. If you have the time and space available, select other locations to test the surface temperature and record the results.

Location	Prediction (°F)	Temperature (°F)
Ambient temperature for your area		
Pavement		
Grass or mulch		

How do the surface temperatures vary based on the material? Why do you think the surface material affects the surface temperature?

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Activity 2: Making A Surface Temperature Prediction Map

Locate a Google satellite map of your community.

Where on your map do you think temperatures would be hottest? Where would be coolest?

What [topographical features](#) do you think make areas on your map hotter or cooler?


Where do you think there could be a heat island? What features could cause a heat island to form?

What other problem areas can you identify? What areas provide benefits to the community?

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Make a drawing of your community.

1. Any areas that you predict would be over 70 degrees, mark as hot and color red. Show where you think you might find heat islands in your community, like parking lots, streets, and highways.
2. Areas that you predict would be cooler, under 60 degrees, mark as green. These are likely to be grassy areas like sports fields, parks, and bodies of water.
3. Finally, mark anything in yellow that's kind of in the middle, between 60 and 70 degrees. These areas are likely to be less densely populated than areas with lots of buildings and roads.
4. Remember to include a legend to show what each color represents in your drawing.



What story does the data tell about the potential effects of radiant heat in your community?



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Activity 3: Imagine A Solution For Heat Islands In Your Community

Which of the [five big ways to reduce heat islands](#) would work best for your community?

Why do you think that solution would work for your community? How would you know your solution is successful?

Add to your drawing of the community or make a new drawing. Mark where you would include features or change the infrastructure to reduce heat islands. Or, if you prefer, draw a detailed sketch of one change you would make, describe where you would add this new feature, and what it would include.