



THE GLOBE PROGRAM

A Worldwide Science and Education Program



Atmosphere



Biosphere



Hydrosphere



Pedosphere

Sponsored by:



Supported by:



Global Learning and Observations to Benefit the Environment

Vision:

- *A worldwide community of students, teachers, scientists, and citizens working together to better understand, sustain, and improve Earth's environment at local, regional, and global scales.*

Mission:

- *To promote the teaching and learning of science, enhance environmental literacy and stewardship, and promote scientific discovery.*



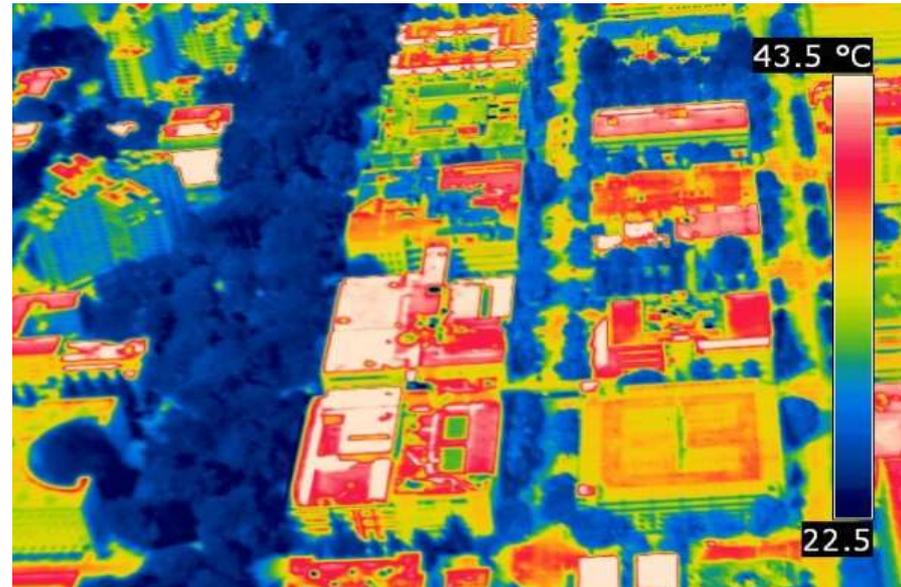
Welcome to GLOBE



<https://youtu.be/bEzdkvwSDn8>

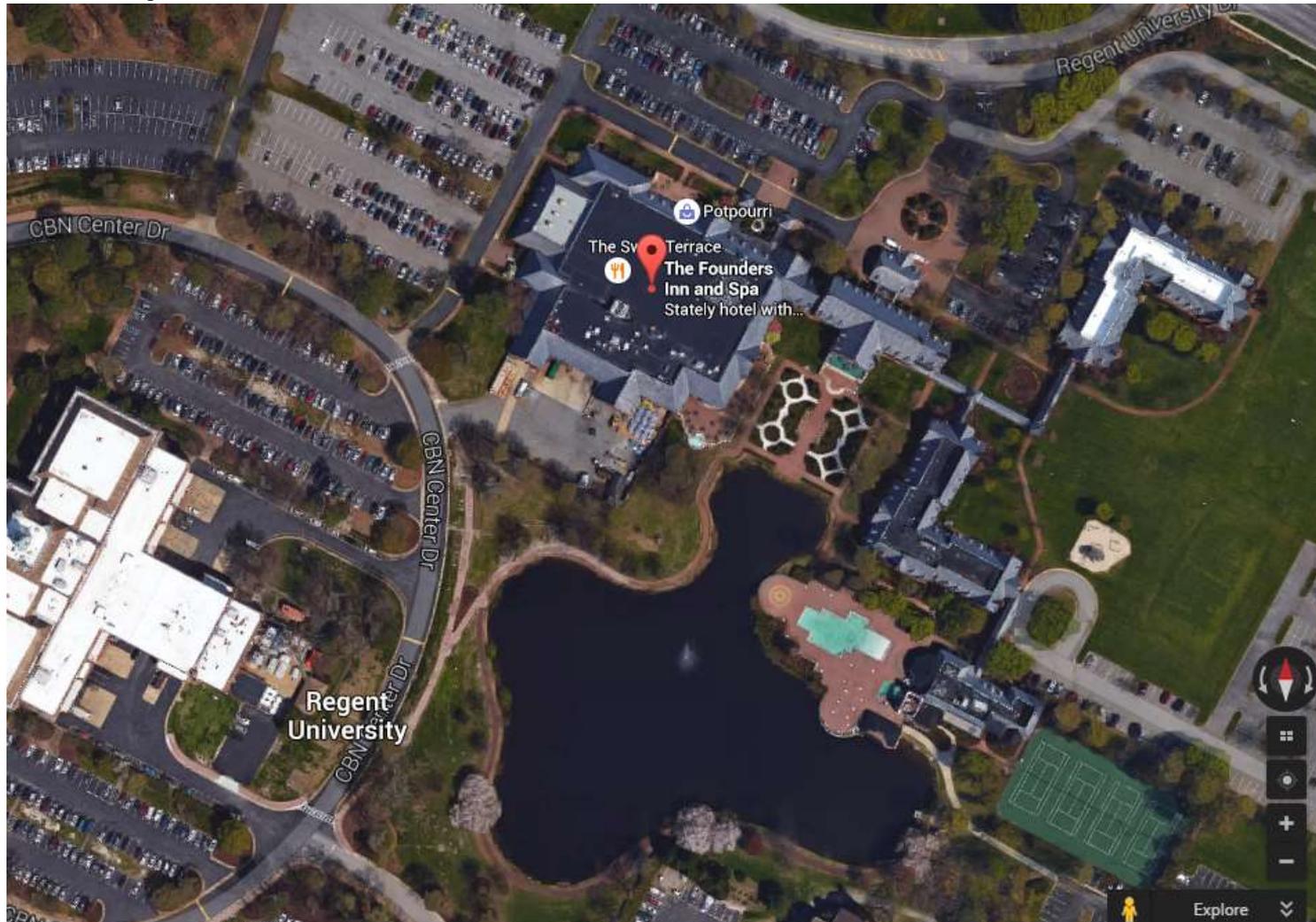
Exploring Microclimates Activity

- **Purpose:** *To understand factors that influence temperature and to therefore influence microclimates.*
- A microclimate is a local atmospheric zone where the climate differs from the surrounding area.
- Microclimates Influences:
 - Proximity to body of water
 - Buildings and infrastructure (urban heat island)
 - Angle of sunlight



Task 1: Sketch Grounds

- Example- Area around Founders Inn



Task 2: Factors that affect Temperature

Describe Factor (i.e. grass surface, brick building close)	Impact on Temperature +, -, =, or ?

Task 3: Select Comparison Locations

- Identify comparison areas on sketch
- Predict temperature differences

How will the air temperature in each area compare? Why?

Task 4: (OUTSIDE)

Document Sites & Measure Temperature
using Calibration Thermometer

Date of Observation:			
Area	Record Area Observations (i.e. patchy grass, plant species)	Air Temperature	Other Important Details

Task 5: Compare & Analyze

Did your predictions on the microclimate of the two areas you selected match with your observations?

Provide possible explanations.

What other factors could affect measured air temperature?

Activity Extensions

- Discuss experimental design
 - How could the way we collected the temperature measurements impact our measurement?
 - This is why we use Protocols in GLOBE
- Lead students back to thinking about their environment and asking questions.
 - Based on your observations, what further research questions do you have about your environment?

GLOBE Investigations for 21CCLC

- **Atmosphere:** *How do Clouds Impact Earth's Radiation Budget?*
- **Protocols:**
 - Clouds
 - Air Temperature
 - Surface Temperature
- **Biosphere:** *What Factors Influence how your Biome Changes?*
- **Protocols:**
 - Land Cover
 - Green-Down
 - Soil Temperature



GLOBE Questions? Contact Me



Jessica Taylor

Jessica.e.taylor@nasa.gov

GLOBE Master Trainer, Physical Scientist

NASA Langley Research Center

