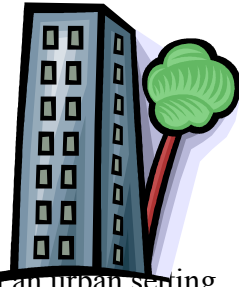


Urban Forest Shade

Jeremy Parker



OVERVIEW:

In this activity, students will be able to investigate the benefits of trees in an urban setting by taking temperature readings in various shaded and non-shaded regions in the neighborhood. The students will be able to find the difference in temperature in the two areas and explain why they might want to have trees around their home.

GEOGRAPHIC QUESTION(S):

How does the presence of trees in urban areas affect the microclimates of those areas?

CONNECTION TO THE CURRICULUM:

This lesson will fit into the curriculum by integrating math skills with geography. This lesson could also be used as an introductory lesson in science focusing on how to correctly use a thermometer.

NATIONAL GEOGRAPHY STANDARDS:

#14 How human actions modify the physical environment.

OREGON STATE CONTENT STANDARDS AND BENCHMARKS:

Social Studies: Geography: Understand and use geographic skills and concepts to interpret contemporary and historical issues.

Grade 5 Benchmark:

Explain how physical environments are affected by human activities and present opportunities constraints, and hazards for people

Scientific Inquiry: Formulate and express scientific questions and hypotheses to be investigated

Grade 3 Benchmark: Ask questions about objects, organisms, and events that are based on observation and can be explored through simple investigations.

GRADE LEVEL(S): 3-5

OBJECTIVE(S):

Students will:

- Record temperature of selected shaded and non-shaded sites in an urban area
- Analyze the data
- Organize and present their findings

MATERIALS:

- Thermometer-1 per student
- Paper/pencil
- Clipboard
- Field Data sheet



PRESENTATION STEPS:

1. Ask students why they think trees may be found in some neighborhoods. Aesthetics or function?
2. Have students brainstorm benefits and disadvantages of trees in urban streets.
3. Have student form an hypothesis about the temperature and tree relationship in urban areas,
4. Model for the students how to read a thermometer. Make sure the students know that they will be taking two readings at each tree. (1.shade, 2. sun)
5. Have the students discuss if they should take their readings at the same times and at the same height on the trees. How long should they leave their thermometer at the tree? Discuss and decide on a uniform procedure to be followed by the entire class.
6. Assign students areas
7. The students will individually take two temperature readings at trees along the assigned neighborhood.
8. The students will find the difference in temperature by subtracting the shaded temperature from temperature in the sun.
9. the students will present their data to the class by making a map and showing the difference in temperature in the shaded and non shaded areas showing what affect the trees have on the street.



ASSESSMENT:

The students will be assessed by the completion of their individual work. The teacher will be looking for two readings at each tree and the difference in temperature at each location. Readings will vary because some blocks may have more trees. The student presentation should include interpretation of their data and answer to their hypothesis. The students score will be assessed in two parts, 75% for their data collection and 25% for their analysis and reason for deciding if trees are a good idea in their neighborhood.



ADAPTATIONS AND EXTENSIONS:

- Students that have trouble working independently may work with partners.
- Students that finish early can figure out the average number of trees on the block, the average temperature difference.
- Celsius vs. Fahrenheit
- Seasonal readings (Fall, Winter, Spring, Summer)
- Data collection on rainy, sunny, cloudy, overcast days for comparison.
- Graph monthly readings for students to see the change in temperature through the seasons. I do this in my class, it provides a concrete example to the changing seasons, and the students collect data every day of the year.



- Would shade be trees be beneficial in the Arctic?
- How do people use trees in an urban setting?

