The CREATES Literacy Project  
Exploring the Urban Heat Island Effect

Teacher: Mikaela Jones  
Grade Level: 5th  
Duration of Lesson: 1 hour

<table>
<thead>
<tr>
<th>Learning Objective</th>
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<tr>
<td>Students will be able to illustrate what the urban heat island effect is and how it impacts their local school environment through reading a scientific article, summarizing written content, collecting data, and communicating information through ArcGIS StoryMaps.</td>
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<tr>
<th>Vocabulary</th>
<th>Materials</th>
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| • Urban heat island  
• Thermometer  
• Surface temperature  
• Infrared | • Infrared thermometers  
• Article on the Urban Heat Island Effect  
• Summarizing Worksheet  
• ArcGIS Story Maps |

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<th>Creative Communication Strategy Implemented</th>
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<td>Students will communicate information from the scientific article and their own citizen science data within an ArcGIS Story Map project for Borton Elementary School.</td>
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<th>Literacy Strategy Implemented</th>
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| • Paraphrasing  
• **Summarizing in Science**  
• Interactive Read-Alouds  
• Interactive Reading Guides  
• Strategies for Vocabulary Instruction  
• Writing a Scientific Explanation Using the Explanation Tool |

Modified from the UA Community and School Garden’s Green Academy Lesson Plan Template
### Order of Activity

- Explain to students that their class is going to read an article about the urban heat island effect and practice summarizing in science
  - Ask students to use the printed summarizing worksheet to read the article one section at a time and write a written summary for what each section is saying in their own words
  - Ask students to volunteer to read their own written summaries out loud to the class
  - Create a class summary for the whole article
- Instruct students to respond to the prompt: “What would happen if our outdoor space at our school were turned into a parking lot?”
- Tell students that their class is going to walk around their school in order to compare the temperatures of various environments
- Prompt students to make predictions about what they think they will find when they use infrared thermometers and walk around the campus to record different surface temperatures.
- As a class, walk around the school and record temperature data from different surfaces. Make sure to include the parking lot and a grassy field
  - Once students finish recording the temperature data, come back together as a class and discuss observations
  - Ask students “What areas of the school are most important to conserve as cool zones and what areas could be transformed in the future to reduce overall temperatures?”
- Using students written summaries and observations, create an ArcGIS Story Map to detail lessons learned throughout this activity
  - If there is extra time, ask students to select one hot area of the school and write up with a detailed plan to transform this area into a cool zone.

### Evaluation/Assessment

Assess students on the validity of data collected with their infrared thermometers, effectiveness of the summaries about the urban heat island effect article, and their response to the prompt: “What would happen if our outdoor space at our school were turned into a parking lot?”

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