The CREATES Literacy Project
Exploring the Urban Heat Island Effect

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

Learning Objective	
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.	
Vocabulary	**Materials**
• Urban heat island • Thermometer • Surface temperature • Infrared	• Infrared thermometers • Article on the Urban Heat Island Effect • Summarizing Worksheet • ArcGIS Story Maps

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

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?"