overarching QUEStion:

*What actions can students take to help cool their community?*

Concept

Weather is a short-term condition that we experience every day, whereas climate is defined as long term averages in weather. Here in the southwest, long-term climate models show an overall increase in surface temperatures, which are heightened by the Urban Heat Island effect in larger cities. Simple changes can be made in our urban communities to lessen heat impacts.

activate

Students use a “Fun Size” bag of M&Ms and weather data to model the difference between climate and weather. They make a bar chart of their yearly weather data and compare their results to the entire classes' yearly data. They make arguments based upon evidence regarding their observations.

check

Students perform the M&M simulation and complete the *Weather-Data Table-Tucson* table.

Objectives

* Model the differences between weather and climate.
* Understand the long-term impact of climate change on urban areas in the southwest.

resources

* **Stability - Change through Climate Lesson**
* **Stability-Change Student Questions.docx**
* **Stability-Change-Weather Data Table.pdf (simple bar graph)**
* **Stability-Change-Weather Data Table.xlsx (active calculations)**
* **Create Google Survey to Excel.pdf**
* **Materials:**
  + One “fun-size” bag of M&Ms per student
  + Computer with Google Forms access

Lesson Instructions

Read and follow the instructions in the **Stability – Change through Climate Lesson**. Be sure to create a Google Survey for recording class data, as per the instructions. The survey can be copied in Google Drive to create separate surveys for each class period. Depending upon your classes’ abilities, you can record and compare the weather-climate data in a simple bar graph format or use the Excel spreadsheet for a more robust analysis.