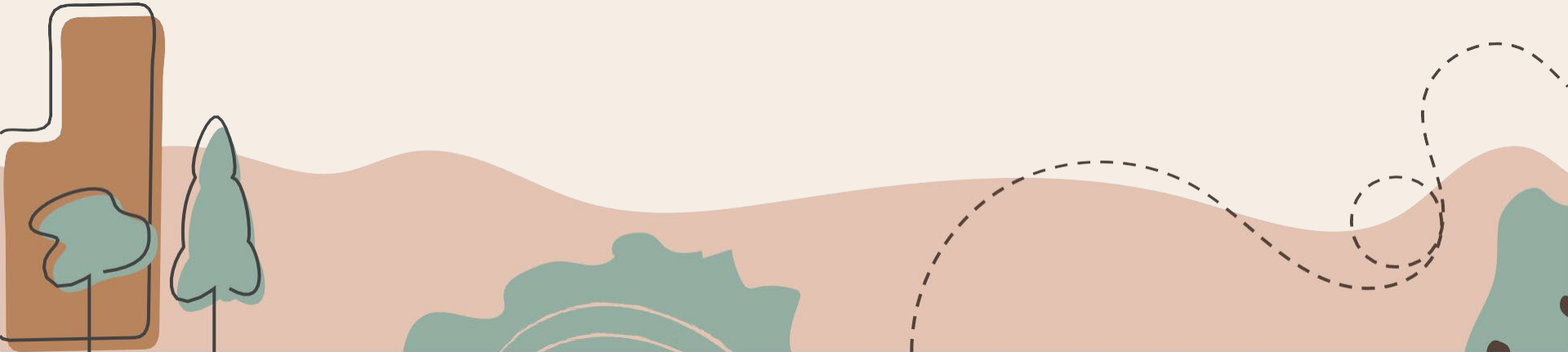




Understanding Energy

# Urban Heat Island Effect



# Bellwork

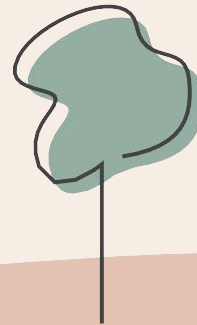
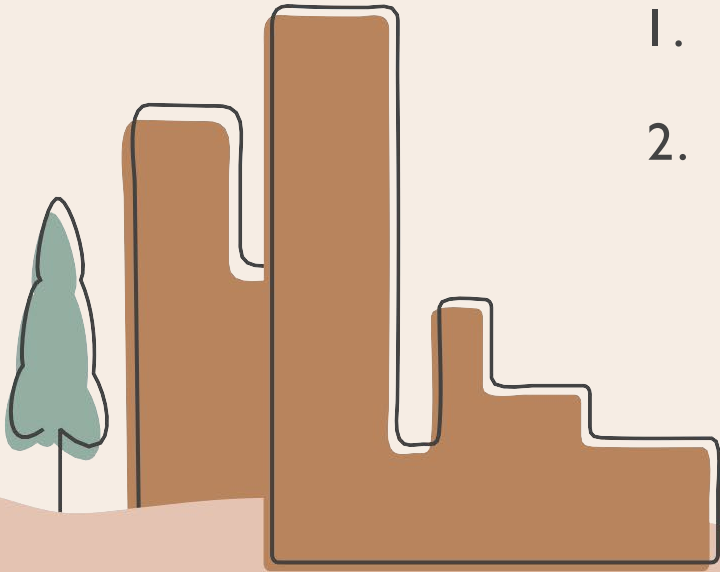
With those around you, answer the questions on the board in your notebook:






# Let's investigate

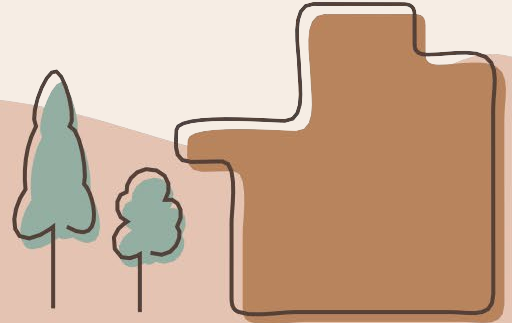
1. Temperature changes on different types of materials.
2. Temperature changes between different environments (urban and rural)





# What is an urban heat island?

Have you heard this term before?





# Objectives

- I can understand what an urban heat island is and how it affects Earth's energy balance.
- I can explain how human activity changes urban, desert, and riparian environments.
- I can collect and analyze data to show others about a phenomenon in my community.

# Our Plan

01

## Background

What is a heat island?

02

## Graphs

Looking at the facts

03

## Data Collection

Performing our own experiment

04

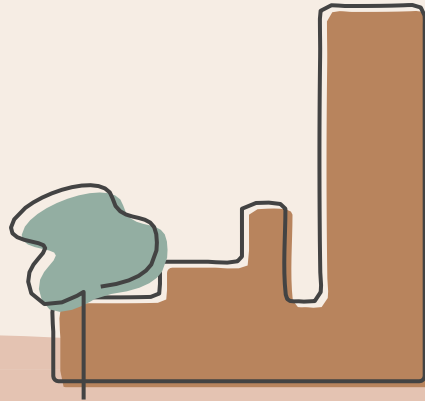
## Data Analysis

Presenting our findings

05

## Extension

How does this phenomenon affect our community?





# Background

What is an urban  
heat island?

# Urban Heat Islands

Read the following:








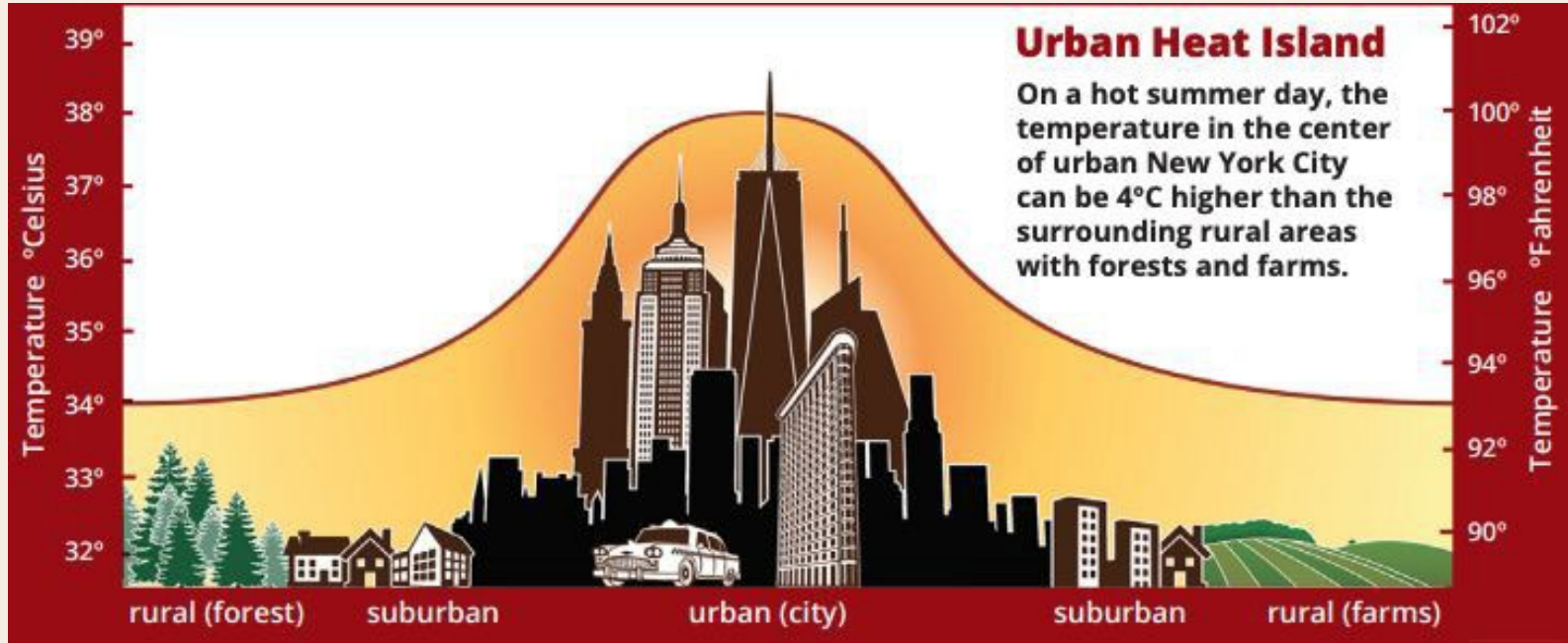
## Key Ideas:

- The surface of the Earth emits and absorbs energy
- Plants can cool themselves and the environment around them.

*Which environment would have cooler temperatures? Desert or river (riparian)?*



# Bellwork



With those around you, answer the questions on the board in your notebook:



# My NASA Data Simulation

Use the simulation to explore more how surface temperature changes in different communities. You may work in lab groups, but turn in one paper per person.





# Our Experiment

What findings do  
we see in our own  
school?



# Objective

I can collect and analyze data to show others about a phenomenon in my community.



# Hypotheses

What do you expect to see? Why?  
Record an idea in your notebook before  
we complete our experiment.

# Materials/ Procedure

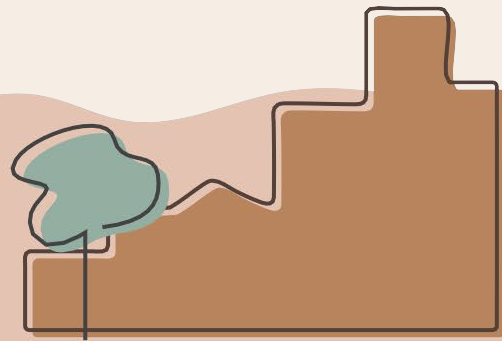
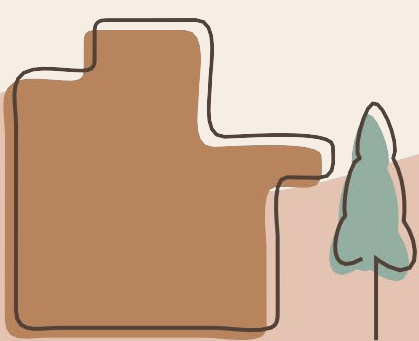
Working with your lab group, you will take the temperature of at least 10 different spots around our campus, using our point and shoot thermometers. Record data in your notebooks.



Location	Material Type	Temperature
Courtyard	Grass	86 F



**Let's go!**





# Think-Pair-Share



Talk with your partner about the following:

1. Did the data show what you would expect?
2. How could this change at different times of day?/  
Seasons?
3. What would you do differently next time? The same?
4. **How does temperature change when you add water to a system? (e.g. Mansfeld pond)**



# Desert vs. River




What are some benefits of projects like the Santa Cruz River Heritage Project?





# Showing off your data!

Create a poster with a partner in your lab group that shows your data findings:

- Should be your best work/ be legible/ have color
  - Should contain 1 graph or visual that shows your data
  - Should show your hypothesis
  - Should show 1 thing you still want to learn
- 
- 
- 

# Gallery Walk



# Extension- trees in Tucson



- Visit this site on your own. What do you notice/ think/ wonder?
- Where do you see trees?
  - List some thoughts in your notebook
  - Then, we will regroup as a class.

