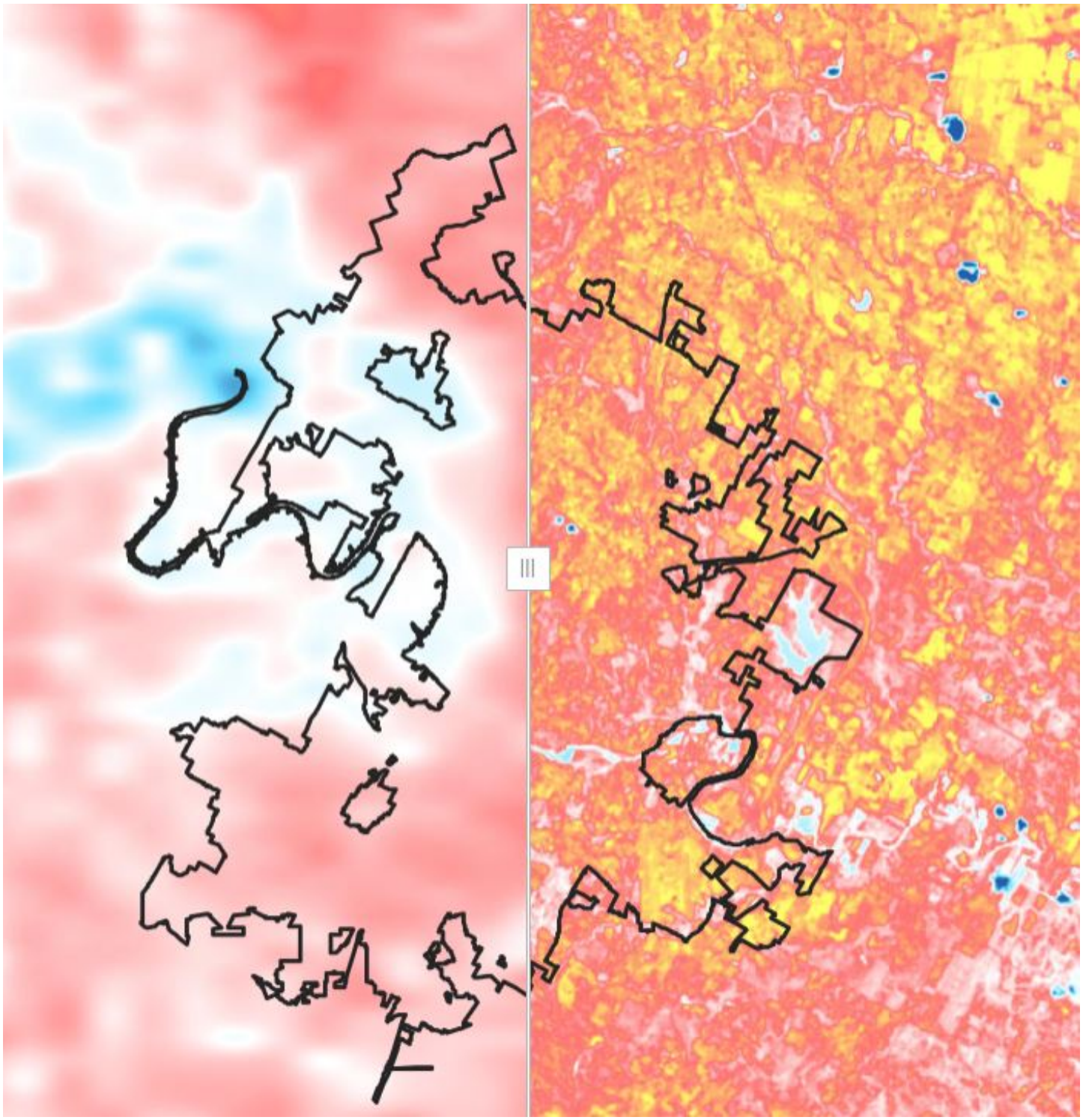
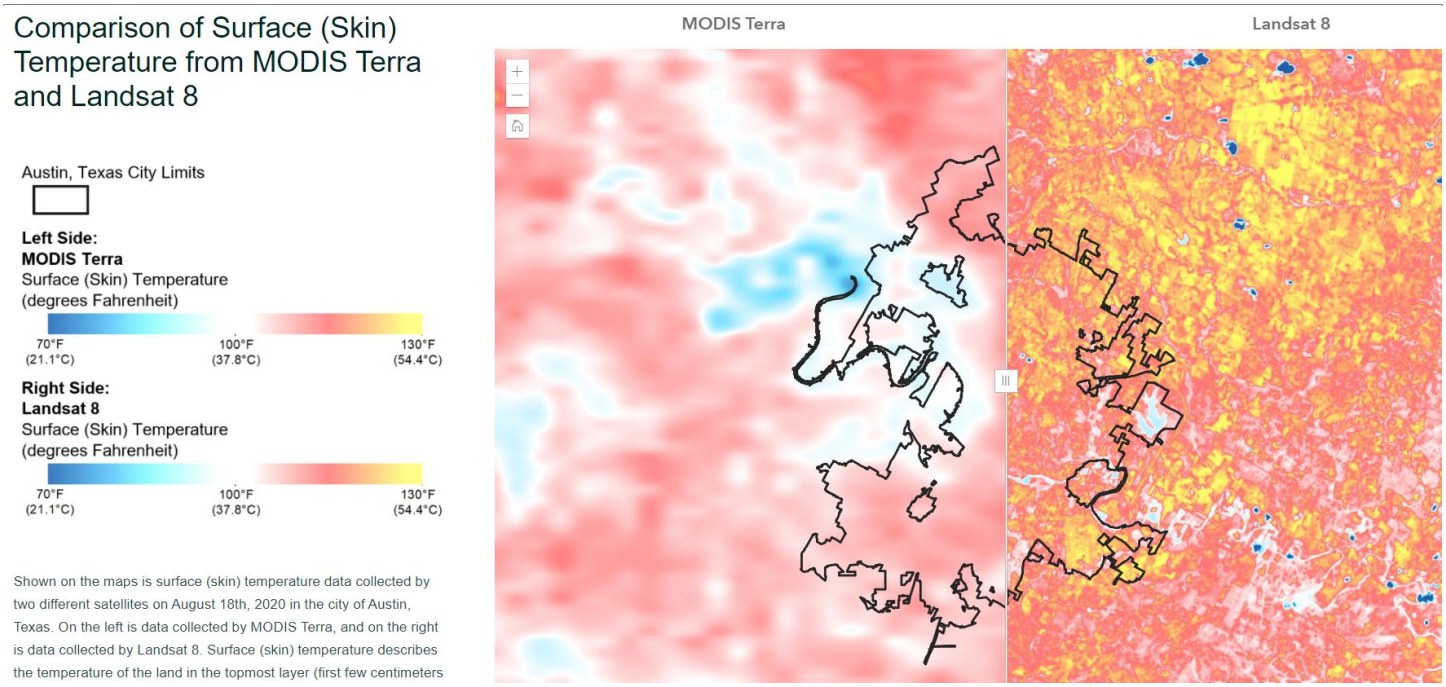
My NASA Data - Interactive Models

Exploring the Tradeoffs of Surface Temperature Models





CLICK HERE

Learning Objectives

- Students will list and describe the different characteristics of satellite data.
- Students will describe the advantages and disadvantages of using two different satellites to study the Urban Heat Island Effect.

Essential Questions

1. What are the advantages and disadvantages to using MODIS Terra or Landsat 8 to study the Urban Heat Island Effect?
2. Why might a scientist use two different satellites to study the same phenomenon?
3. How does pixel size influence the scale at which you can study a phenomenon?

Materials Required

- Computer/Tablet
- Internet Access
- Google Form (optional)
- Link to Exploring the Tradeoffs of Surface Temperature Models

Teacher Answer Key

Teachers who are interested in receiving the answer key, please contact My NASA Data from your school email address at larc-mynasadata@mail.nasa.gov

Grade Band

- 3-5
- 6-8
- 9-12

Supported NGSS Performance Expectations

- 3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmenta

NGSS Disciplinary Core Ideas

- ETS1B: Developing Possible Solutions

Science and Engineering Practices

- Developing and Using Models
- Analyzing and Interpreting Data
- Constructing Explanations and Designing Solutions

Crosscutting Concepts

- Scale, Proportion, and Quantity
- Interdependence of Science, Engineering, and Technology

Related Resources

- Patterns in Earth's Surface Temperature Interactive Model
- Human Impact and the Creation of Urban Heat Islands