

## Lesson #2: Day 4-5: Research Questions

### Overview

*Lesson is used mostly as indicated in the ECS v. 5 curriculum, adapted to a flipped classroom model in Google Classroom (GC). Students review the data collected in their Room Data Collection project, and begin familiarizing themselves with larger sets of data. The final project rubric is introduced and questions answered. Day 1 is an introduction to big data and students brainstorm ways of analyzing and visualizing the large data sets that are options for the final project. Day 2 is spent practicing with Google Sheets, sorting, charting, and learning how to manipulate data with Pivot Tables.*

### Lesson Summary

- Post links to videos, help pages, and datasets on GC. Post final project assignment with expectations, description, and rubric.
- Students review the dataset collected from the class Google Form for the Room Data Collection project and discuss the questions in the curriculum guide.
- Go over and answer questions about the final project expectations and rubric (posted on GC)
- Introduce the final project topics and datasets.
- Discuss research questions that can tell a story with data. Guide students to consider what is available in the dataset(s)
- Choose a theme for the class to use as a whole.
- Break into groups to brainstorm what stories the students in that group want to tell with their data, and how they might collect the data.

### CS Content

*Data, research, organization, critical thinking and computer use.*

### Objectives

**Students will be able to:**

- Understand the complexities of collecting, processing, and analyzing large sets of data.
- Describe the expectations of the final project.
- Explore data sets related to sample final project topics.
- Identify research questions that could be answered or stories that could be told from the data.
- Select topic for the final project.

### Materials and Prep

- Final project topics and rubric (GC)
- Datasets (GC)

### Resources

#### Student Documents

- [Google Sheets Pivot Tables Help Page](#)

#### Code Studio

- None

#### Video

- [TED Talk Big Data NYC Parking](#)
- [The Human Face of Big Data](#) (selected excerpts)

#### Assessments

- None for this lesson - assessed in the final project.

### Notes

This lesson has been adapted for a flipped classroom style.

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