



# FUTURE U.

## Sit Down Activity

### Objectives

Students will:

- **Identify** a problem in their school
- **Create** and **distribute** a survey to collect data
- **Analyze** their results and **consider** what the data tells them about the problem
- **Develop** a recommended solution for the problem

## Kasie Dugan, IT and Data Analytics Product Owner

### Grade Range

5–8

### Overview

In this activity, students will be inspired by the work of an IT and data analytics product owner at Boeing as they use data to solve a problem in their school. After creating a survey and distributing it to their peers, students will analyze the results and consider how the data can be used to help them work toward a solution.

### Timing

Two 30-minute sessions

### Materials

- Device with the ability to project video, one for the teacher
- [Kasie Dugan, IT and Data Analytics Product Owner](#) video, to project
- *Survey* handout, enough for half the class
- *Survey Analysis* handout, enough for half the class

### Procedure

#### Session 1

1. **Warm-Up:** Show the [Kasie Dugan, IT and Data Analytics Product Owner](#) video; then do the following:
  - Encourage students to summarize Kasie Dugan’s main responsibilities. Be sure students understand that IT and data analytics product owners like Kasie act as managers of data science teams and help figure out how their teams can use data to solve problems.
  - Challenge students to connect the role to their own school. Ask: If your school had an IT and data analytics product owner, what data might be useful to collect?

- Guide students in answering this question by creating a T-chart on the board with the headers “Problem/Room for Improvement” and “Useful Data.” Then encourage the class to help you fill out the two columns.
  - For instance: If an idea for *Room for Improvement* was “more lunch options,” then the *Useful Data* could include “students’ top lunch preferences,” “percentage of students with dietary restrictions,” etc.
2. Divide students into groups of three or four. Explain that students in each group will develop, distribute, and analyze a survey that will collect data from their peers in order to help solve a problem at their school.
  3. Define “survey” as a list of questions designed to gather information from individuals in order to learn about the group’s opinions. Then take a moment, if needed, to review different types of survey questions\*:
    - Multiple choice: Users select from answers you have already created.
    - Open ended: Users write their own responses.
    - Scale: Users answer based on a variety of scales, including the following:
      - Number scale such as 1–X, with a reference that explains what one stands for and what the highest number stands for.
      - Word scales such as a range from “very much agree” to “very much disagree.”
- \*Note: It may be helpful to record these types of survey questions on the board or a piece of chart paper.
4. Pass out one Survey handout to each small group and prepare students for the activity by explaining that each group will:
    - Pick a problem from the T-chart and record it on the handout in the space provided.
    - Consider what data may help solve the problem and develop 3–5 concise survey questions designed to collect this data.
    - Use no more than one open-ended question.
  5. Give students about 15 minutes to create their surveys.
  6. Explain *how* students will be expected to administer their survey. Encourage students to get as many participants as possible, but to aim for at least 20. Options for survey distribution include the following:
    - Help students copy their surveys and provide class time for students to survey one another.
    - Help students copy their surveys and give them a few days to administer their survey before school, after school, or during lunch.
    - Encourage students to create a virtual version of their survey using a free survey site such as Google Forms or Survey Monkey.
  7. Finally, let student know a date by which they should have their results in and reconvene for the second session on that date.

### Session 2

1. Begin the second session by encouraging student groups to review their survey results. Guide students in the level of analysis you would like them to provide. At minimum, encourage students to:
  - For multiple-choice and scale questions, calculate the percentage of students that selected each answer.
  - For open-ended questions, look for keywords in each response and calculate how many times these keywords appear in order to find commonalities among the responses.
2. Once groups have analyzed their data, challenge them to consider what they can learn from the responses. Pass out one Survey Analysis handout to each group and review the directions. Be sure students understand that they don't need to record *everything* they learned from each question. Rather, they should pick key responses that will most help them solve the problem they identified (if any!).
3. **Wrap-Up:** Before the session comes to a close, challenge groups to consider whether their data collection was successful. In other words, did the data they collected help them work toward a solution? Encourage each group to share something interesting that they learned from their data collection *or* an insight about how they would change or improve their data collection strategy in the future.

## National School Standards

### Common Core Mathematics Standards

Statistics and Probability

- CCSS.MATH.CONTENT.7.SP.A.1: Use random sampling to draw inferences about a population.

### Common Core English Language Arts Standards

Speaking and Listening

- CCSS.ELA-LITERACY.CCRA.SL.4: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

The following data collection will be used to help us:

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Question 1:

Question 2:

Question 3:

Question 4:

Question 5:

Thanks for your participation!

**Directions:** Once you have analyzed your survey results, consider how this data could help you solve your problem. Record the most important thing you learned from each question in the space below.

Question 1: Key Idea

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Question 2: Key Idea

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Question 3: Key Idea

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Question 4: Key Idea

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Question 5: Key Idea

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**Recommendation**

Based on these learnings, what recommendations can you make for a solution or change? Be sure to restate the problem and clearly explain how your recommendation is supported by data.

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