

This worksheet was developed by Zan Armstrong and Louisa Connaughton for use with Louisa's 5th grade students at BB&N school in Cambridge, MA.

Goal

The goal was to help students interact with data through a visualization and think critically about the visualizations. In particular, we wanted students to think about where the data came from, who the audience might be, and why the designers might have chosen these symbols/colors and other visual elements. This is similar to how students might critique a news story, but focussing on visual elements rather than written words.

How it works

The students explore 3 main visualizations. 2 supplemental visualizations to compare/contrast to are also included, to help demonstrate alternate audiences or visual encodings for a visualization with similar data to the main one.

Depending on the classroom situation, the questions can be tackled together at a class, in small groups of students, or individually. We did a mix of the three. In particular, as students brought up interested ideas we used those to guide the conversation or follow-up questions. We did not cover all the written questions in a single period, and adjusted the conversation/focus in response to student questions and engagement. If desired, some questions could be saved for a homework assignment.

Background Expected

Students had already done a unit on making graphs (bar charts, etc), so were familiar with some of the fundamental chart types and encoding information in an image. This provided a helpful context, but was not necessary for this session.

Resources

- (required) classroom projector to project visualizations from computer to screen so that all students can see and discuss
- (optional) iPads or other tablets and a QR reader app so students can scan the QR codes for the website URLs and explore the visualizations themselves. If you don't have a QR scanner, you can use [this online one](#) to get the URIs.

Name _____

Wind Map



- 1) What is the visualization about?
- 2) What information/data is it showing?
- 3) What colors and shapes do the authors use to show the data?
- 4) List at least 5 things that you notice about the map.
- 5) Is there anything you find interesting or surprising?
- 6) Where does their data come from?
- 7) Who do you think is the audience for this visualization? Who would use it?

8) Choose a map from [the gallery](#) and describe it.

gallery ---->



9) Why do you think the example you chose was included in the gallery?



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The website also links to another map which shows similar data about wind.

10) How are the two maps similar? How are they different?

11) Describe a reason that you might choose to use one of the maps instead of the other?

For Eli Manning: 150 Games and Counting

1) What is the visualization about?

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2) What information/data are the authors showing?

3) What colors and shapes they're using to show the data?

4) List at least 5 things that you notice about the visualization.

5) Find a quarterback who has played for more than one team.

6) Find a quarterback who has had more than one streak for the same team.

7) Is there anything you find interesting or surprising about this data?

8) Where does this data come from?

- 9) Who do you think is the audience for this visualization? Who would use it?
- 10) They used an unusual shape to show the streaks. Why do you think they might have chosen this shape?
- 11) Do you think it was a good choice? What other shapes could they have used?

Census Dot Map

- 1) What is the visualization about?

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- 2) What information/data is it showing?
- 3) What colors and shapes do the authors use to show the data?
- 4) List at least 5 things that you notice about the map.
- 5) Is there anything you find interesting or surprising?
- 6) Find Boston (you can click on "add map labels" to help). Zoom in.

- a) What do you notice?
 - b) Describe an area of Boston that is mostly one color.
 - c) Describe an area of Boston that has more than one color.
 - d) What is one question that you have about Boston based on what you've seen in this visualization?
 - e) Find another city. How is it similar or different compared to Boston?
- 8) Where does the data for this infographic come from?
- 9) Who do you think is the audience for this visualization? Who would use it?
- 10) The link below shows a different map of race. Compare and contrast these two maps. Why do you think the authors of the dot map chose to use dots instead of coloring the map?

