

Warm Up

2 Frayer models on Section 1.1 vocabulary (to put on the wall)

Aug. 26

Objective: SWBAT classify categorical data by variable and choose an appropriate style of graph to represent it.

Agenda:

- Warm Up
- Notes/Discussion
- Practice: Distribution
- Practice: Graphs
- Reflection

Notes: Categorical Variables

What is a categorical variable? What is another name for it?

Categorical variables are organized by group/category. They are also called qualitative variables.

Notes: Good/Bad Graphs

What makes a good graph? Why?

Good :- proper labeling

- proper scale

- appropriate type of graph

- no pictures

- consistent!

- easy to assess

These make finding associations easier.

Bar Graph vs. Pie Graph

	Pie	Bar
+	<p>Compare relative frequencies (ex. percent) for one variable</p> <p>size of the slice \rightarrow relative freq.</p> <p>• can be easier to make</p>	<ul style="list-style-type: none"> • relative frequencies • absolute freq. (numbers) • more than one variable can be shown
-	<p><u>Only</u> one variable</p> <p>not good for numerical variables</p> <p>no info on the # of people/responses</p>	<ul style="list-style-type: none"> • categorical only • require more effort • bars are the same width must be

Notes: 2-Way Tables, Distributions

A 2-way table can be used to compare responses with 2 categorical variables

To get a better understanding of what the table says, we can find the marginal distributions for each variable.

	Eat Breakfast	Skip Breakfast	Totals
Students: ages 10-13	40	14	54
Students: ages 14-17	12	24	36
Totals	52	38	90

Response	Percent
Eats Breakfast	$\frac{52}{90} \approx 58\%$
Skips Breakfast	$\frac{38}{90} \approx 42\%$

Notes: Conditional Distributions

Marginal distributions only give information about one variable.

Conditional distributions give information about proportions in one variable

Conditional distributions are calculated across one variable. Which one?

	Eat Breakfast	Skip Breakfast	Totals
Students: ages 10-13	40	14	54
Students: ages 14-17	12	24	36
Totals	47	43	90

ex) Are younger students more likely to eat or skip breakfast?

eat: $\frac{40}{54} \approx 74\%$

skip: $\frac{14}{54} \approx 26\%$

Notes: Associations

We can spot a possible association between variables from the conditional distributions.

This table compares car choice based on gender. Is there an association between gender and car choice?

	Sport Utility Vehicle (SUV)	Sports Car	Totals
male	$\frac{21}{156} = 0.13$	$\frac{39}{84} = 0.46$	$\frac{60}{240} = 0.25$
female	$\frac{135}{156} = 0.87$	$\frac{45}{84} = 0.54$	$\frac{180}{240} = 0.75$
Totals	$\frac{156}{156} = 1.00$	$\frac{84}{84} = 1.00$	$\frac{240}{240} = 1.00$

MathBits.com

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Practice

Use the frequency tables in our Google Class. Find the conditional frequencies for one variable based on the other, and make a graph illustrating the data. Justify your choice of variable and graph style.

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Reflection

Choose 2 or 3 of the vocabulary words in Section 1.1 and describe how you would use those concepts in your future career. Use complete sentences.

HW: Section 1.1 #9-11, 18-20

Aunt Janet rule: At the end of each assignment, write a few sentences to my Aunt Janet telling her what the homework was about and what you learned from it.