

A Note to Teachers



This stage requires students to have their surveys completed.

The two key tasks in this lesson are creating a graph and making decisions based on their survey data.

Data analysis can be explored extensively in this lesson. The grade 5 Ontario Math Curriculum expectations [D1.2, and 1.3](#) include stacked-bar graphs and relative frequency tables, which are featured in this lesson. Creating infographics is an engaging task and expectation; however, they have been excluded from this lesson due to time. Teachers can opt to have students create data representation that fits with their goals. The lesson can extend to include mean, median, and mode.

Time: Approximately 60 minutes. This is an ideal lesson to do during math periods.

Graphing: If students use Google Forms, a stacked-bar graph can be made by selecting the data created in Google Sheets, clicking insert, chart, then a variety of chart choices appear on the right side. Stacked-bar graphs can also be created in Microsoft Forms. Chart created digitally can be copied and pasted. An optional, simple [Bar Chart Template](#) is available for students to represent their data using paper and pencil.

Expectations

Mathematics - Strand D Data

D1.1 explain importance of sampling techniques

D1.2 collect data, using appropriate sampling techniques as needed, to answer questions of interest about a population, and organize the data in relative-frequency tables

D1.3 select from among a variety of graphs, including stacked-bar graphs, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs

D1.6 analyse different sets of data presented in various ways, including in stacked-bar graph
(Optional Extension) D1.5 determine the mean and the median and identify the mode(s),

Science and Technology - Strand A STEM Skills and Connections

A1.1 use scientific research process and skills to conduct investigations

A1.2 use scientific experimentation process and associated skills to conduct investigations

A1.5 communicate their findings, using science and technology vocabulary

Transferable Skills:

- Entrepreneurship and Collaboration

Agriculture/Agri-Food Themes:

- Determining how to increase interest in grain-based foods





Stage 3 Lesson 2: Analyzing Survey Results



Learning Goals



We are learning:

- About relative frequency tables and stacked-bar graphs
- To create charts that represent the data from our surveys
- To make team decisions about our product and business based on the data



Business Connection

How will this learning help our business?



Minds ON!

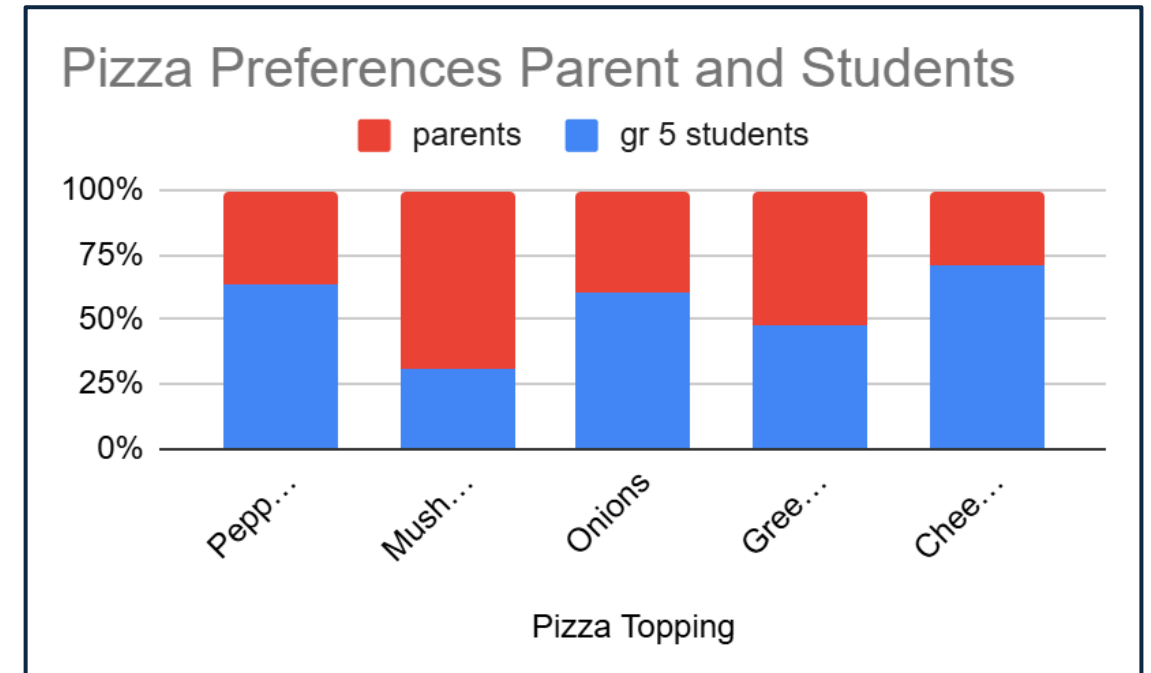
SURVEY SAYS: 100 people were surveyed

Pizza Topping	Total	Relative Frequency
Pepperoni	35	$\frac{35}{100} = 0.35 = 35\%$
Mushrooms	20	$\frac{20}{100} = \boxed{} = 20\%$
Onions	15	$\boxed{} = 0.15 = 15\%$
Green Peppers	18	$\frac{18}{100} = 0.18 = \boxed{}$
Cheese only	12	$\boxed{} \quad \boxed{} \quad \boxed{}$

Graphs

Graphs tell a story and the type of graph you choose to tell that story depends on the data collected. Stacked-bar graphs help us compare. For example, a comparison of pizza preferences between parents and students.

Pizza Topping	Total gr 5 students	Total parents
Pepperoni	35	20
Mushrooms	20	45
Onions	15	10
Green Peppers	18	20
Cheese only	12	5



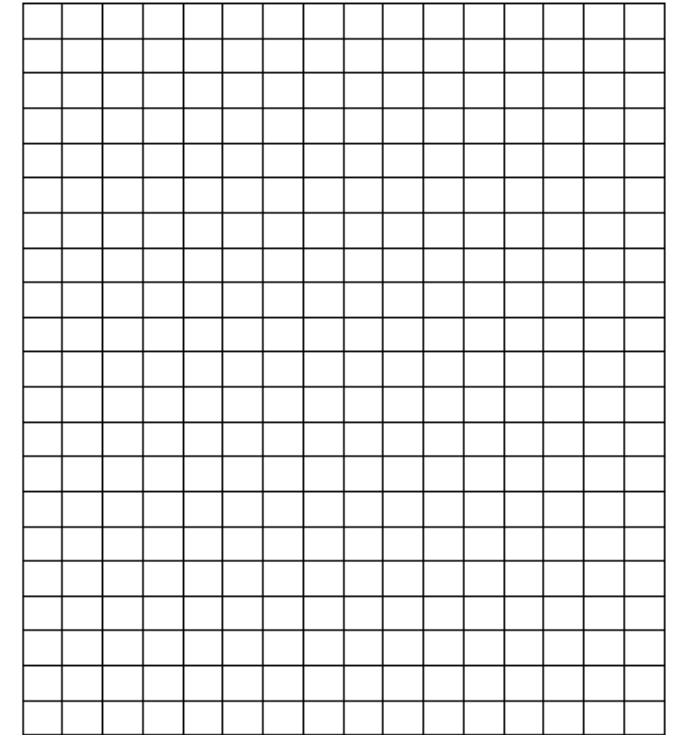
Action 1: Data

- ❑ **Review** the data from your surveys with your business group
- ❑ **Choose** how best to present the data - a bar graph, stacked-bar graph, or table.
- ❑ **Create** a graph that tells a story about your data.

Bar Chart Template



Bar Chart Title: _____



Action 2:

Decisions from data analysis

- ☐ **Discuss** the pizza preferences and trends
- ☐ **Make** final group decisions about your product and business
- ☐ **Add** the decisions to your Pizza Shop Business Planning Booklet

Data and Decisions



Use the checklists to discuss your survey results with your group and how the data informs your business decisions.

Action 1 - Data	Action 2 - Analysis
☐ Review the data from surveys. <i>What are the key takeaways (the important ideas or information)?</i>	☐ Discuss the pizza preferences and trends. <i>What did you notice?</i>
☐ Choose how best to present the data, e.g. bar or stacked-bar graph, table	☐ Make final group decisions about your product and business
☐ Create a graph to present your data.	☐ Add the decisions to your team Business Plan.

STEMterprise Stage 2: Pizza Shop Business Planning Booklet



Name: _____

Decisions we have made ...

Include decisions about name, logo, colours, recipe, cost of pizza, and any other things your team have agreed on.

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Wrap Up

Has the information from your survey changed
your ideas for your pizza business?



Check In – What's Next?





Career Connections



Surveys

What job needs these skills?

- ☐ Detail-oriented
- ☐ Independence
- ☐ Computer & Technological
- ☐ Multi-tasking

Check out this [data career](#).

