

BAR GRAPHS

Subject

Mathematics

Prepared By

[Instructor Name]

Grade Level

5

Overview

This lesson plan covers teaching content for;

1. Definition of a bar graph.
2. How to recognize the different types of bar graphs.
3. How to create bar graphs.

Objectives

Students should be able to;

1. Define bar graph.
2. Recognize the different types of bar graph.
3. Make a bar graph to represent data.

Activity Starter/Instruction

1. A bar graph is a chart that uses bars to show comparisons between categories of data.
2. The bars can be either horizontal or vertical. Bar graphs with vertical bars are sometimes called vertical bar graphs.
3. A bar graph will have two axes. One axis will describe the types of categories being compared, and the other will have numerical values that represent the values of the data. It does not matter which axis is which, but it will determine what bar graph is shown.
4. There are many different types of bar graphs. They are not always interchangeable.
5. Each type will work best with a different type of comparison. The comparison you want to make will help determine which type of bar graph to use.

Teacher Guide

Day 1/ Lesson 1: 20mins

1. A survey of students' favorite after-school activities was conducted at a school. The table below shows the results of this survey.

| Activity | Number of Students |
|--------------------|--------------------|
| Play Sports | 45 |
| Talk on Phone | 53 |
| Visit with Friends | 99 |
| Earn Money | 44 |
| Chat Online | 66 |
| School Clubs | 22 |
| Watch TV | 37 |

2. Each quantity listed in the table correspond to a particular category. Accordingly, the data from the table above is displayed in the bar graph below;

Guided Practice

Day 2/ Lesson 2: 15 Mins

1. Students will create bar rap using data they have collected or data provided by teacher.
2. Explain to students that in their small groups they will create a bar graph and then write the steps they took to create the graph.

Materials Required

- White board
- Marker

Additional Resources

- <https://www.allabout3rdgrade.com/2016/12/graphing-freebies-and-fun-ideas.html>
- <https://www.splashmath.com/math-vocabulary/geometry/bar-graph>
- <https://www.math-only-math.com/worksheet-on-bar-graph.html>
- <https://sites.google.com/site/bhe6thgrade/quests/stage-6-challenge/6-types-of-graphs>
- <https://www.math-only-math.com/worksheet-on-bar-graphs.html>
-

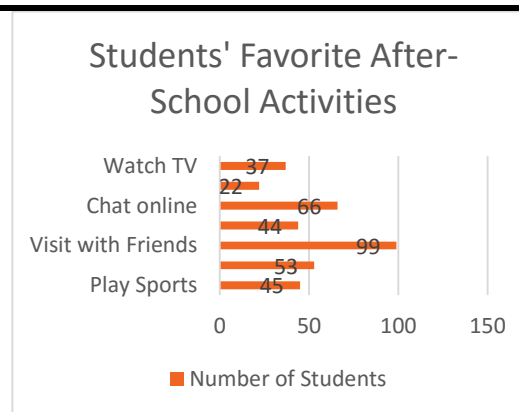
Additional Notes

3. Ask a student pair to explain when they would use a bar graph.
4. Continue to have pairs share, and have pairs with similar responses sit down.
5. During whole group instruction, model how to make a bar graph using data below.
6. Pet popularity

| Type of pet | Number of Pets |
|-------------|----------------|
| Parakeet | 9 |
| Dog | 22 |
| Cat | 53 |
| Hamster | 7 |

7. Briefly discuss the data. Brainstorm part of a bar graph with students. Use large paper to create a bar graph, thinking aloud throughout the process.
8. Steps in the Process
9. Decide on a title for your graph (Pet Popularity).
10. Draw the vertical and horizontal axis.
11. Label the horizontal axis (Type of pet).
12. Write the name of pets where the bars will be.
13. Label the vertical axis (Number of Students).

6. **Vertical Bar Graph:** It's best when you have to compare between two or more independent variables. Each variable will relate to a fixed value. The values are positive and therefore, can be fixed to the horizontal value.
7. **Horizontal Bar graph:** It's used when your data has negative and positive values but is still a comparison between two or more fixed independent variables.
8. The vertical axis can be oriented in the middle of the horizontal axis, allowing for negative and positive values to be represented.
9. **Range Bar Graph:** It represents a range of data for each independent variable. Temperature ranges or price ranges are common sets of data for range graphs.
10. Unlike the above graphs, the data do not start from a common zero point but begin at a low number for that particular point's range of data. A range bar graph can be either horizontal or vertical.



3. A bar graph is useful for comparing facts. The bars provide a visual display for comparing quantities in different categories. Bar graphs help us to see relationships quickly. Another name for a bar graph is a bar chart. Each part of a bar graph has a purpose.
 - Title: The title tells us what the graph is about.
 - Labels: Tells us what kind of facts are listed.
 - Bars: The bars show the facts.
 - Grid lines: Grid lines are used to create the scale.
 - Categories: each bar shows a quantity for a particular category.
4. Teacher can build up questions for the students with the above graph.

Guided Practice

Day 3/ Lesson 3: 15mins

1. Begin by asking students to write down their full names (first and last). Once their names are written down, have them count the number of letters in their name.
2. Collect the data on the board based upon the amount of letters in the name. Once the data is on the board, have the students create a bar graph based upon the information collected.

| | |
|--|---|
| <p>14. Decide on the scale. Explain that they should consider the least and greatest number shown on the data.</p> <p>15. Discuss what range of numbers should be shown on the bar graph (Begin at 0 and count by 5s to 25)</p> <p>16. Draw a bar to show the total for each item.</p> | <p>3. At this time, the teacher will move about the classroom making sure students are correctly representing the data.</p> <p>4. Key parts to look for: title, labeled x and y axis, scale is equal and starts at zero, correct bar heights, bars not connected.</p> <p>5. When students are done creating the first graph, have them change the format of the graph (vertically or horizontally) based on their first graph.</p> <p>6. As the students finish their bar graphs, ask questions about the data and graph.</p> <p>7. The students can check with other classmates because everyone is working with the same data values.</p> |
|--|---|

| Summary | Assessment Activity | Assessment Activity |
|---|--|--|
| <p>1. A bar graph is useful for comparing facts. The bars provide a visual display for comparing quantities in different categories.</p> <p>2. Bar graphs help us to see relationships quickly.</p> | <p>1. Have the pairs share their bar graph with another group and share their answers to the questions.</p> <p>2. Then, bring the class together and go through the questions. Make sure to emphasize appropriate units and the usefulness of bar graphs. At the end, have the students hand in their notebook paper</p> | <p>Assess if students can;</p> <p>1. Define bar graph</p> <p>2. List the types</p> <p>Make a bar graph to represent data correctly</p> |