

Data Organizers

STRAND: Probability and Statistics

STRAND CONCEPT: Data Representation and Interpretation

SOL: 5.16a,b,c; 6.10a,b,c; 8.13a,b

Remediation Plan Summary

Students will organize a set of data using one of the data organizers. Pairs will share what their data looks like using the appropriate organizing tool. Scatterplots are not introduced until the 8th grade. Teachers can substitute the scatterplots in this lesson with other types of graphs if this lesson is used with younger students.

Common Errors and Misconceptions

Students have a difficult time understanding which type of graph best represents a set of data. They need to compare and contrast data sets with different representations.

Materials

- Chart paper
- Markers/pens
- Tape
- Household Survey Data Activity Sheet
- Index cards - prepare index cards beforehand with the following data organizer directions (one direction per card):
 - Use a list to show the number of adults in each household.
 - Create a line plot to show number of people in each household.
 - Use a stem-and-leaf plot to show the number of TVs in households.
 - Use a scatterplot to show the number of children in households. Change this one
 - Create a line plot to show the number of vehicles in each household.
 - Use a scatterplot to show the relationship between the children in a household and the total number of people in a household.
 - Using a circle graph, show the total number of children and the total number of adults in all households.

Introductory Activity

Begin with a general discussion about graphs. Ask the students why we graph data? How does a graph help us understand data? Why do we have different types of graphs? Why are some graphs better for data than others? How can you choose one type over another?

Plan for Instruction

1. Organize students into pairs. Explain to the students that they will be working together to organize a set of data.
2. Brainstorm together ways that data can be organized. Make a chart or write ideas on board or overhead.

3. When all methods are thought of/discussed, give each pair an index card with a data organizer written on it. Give all pairs the same Household Survey Data Activity Sheet.
4. Pairs need to use the data organizer from their index card to organize the Household Survey data they just received onto chart paper.
5. Have pairs post their displays on the wall for others to see.
6. If time, have pairs share the similarities/differences they notice about the different ways the data is displayed.
7. Discuss why the same set of data looks different. Does the organization of the data change its meaning?

Pulling It All Together (Reflection)

Create a circle graph and a bar graph to represent the data shown in the table that represents the preference of 40 students among different types of pies.

Pie Preference	Number of Students
Apple	12
Pumpkin	14
Pecan	6
Cherry	8

Which type of graph best represents the data? Can we determine the same information from both types of graphs? Justify your thinking.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

Survey of Household Members

Name	Children in Household	Total Number of People in Household	Number of TVs in Household	Number of Cars in Household
Adams	2	4	4	2
Brown	1	3	2	2
Bury	0	3	3	3
Chambers	4	6	5	3
Cleveland	1	3	2	2
Critzen	2	3	3	1
Cunningham	2	4	2	1
Davis	3	5	4	3
Dumante	1	2	2	2
Elliot	2	3	3	3
Gale	0	1	2	1
Galland	0	2	3	2
Herrig	2	4	4	2
Kerby	1	3	2	2
Kincaid	2	4	2	2
Leigh	2	3	3	1
Lowe	1	3	2	2
Mazick	2	4	3	2
Martinez	3	5	5	3
Moore	2	3	4	2
Nunez	2	5	4	3
Pranter	2	4	4	1
Richards	0	2	1	1
Riley	0	1	3	1
Roberts	1	3	3	2
Shaw	2	3	3	1
Whitten	1	2	2	1