

Important Concepts . . .

Preview Review



Mathematics Grade 5 TEACHER KEY

**W3 - Lesson 4: Statistics and
Probability**

Important Concepts of Grade 5 Mathematics

W1 - Lesson 1	Number Sense Numbers 0 to 100 000
W1 - Lesson 2	Exploring Proper Fractions
W1 - Lesson 3	Exploring Decimals
W1 - Lesson 4	Numbers With Up to 2 Decimal Places
W1 - Lesson 5	Multiplication
W1 - Quiz	
W2 - Lesson 1	Division
W2 - Lesson 2	Collecting Data and Analyzing Patterns
W2 - Lesson 3	Estimating and Taking Measurements
W2 - Lesson 4	Perimeter and Area Measurements
W2 - Lesson 5	Metric Measurements
W2 - Quiz	
W3 - Lesson 1	Volume, Capacity, Mass, and Time
W3 - Lesson 2	2-D Shapes and 3-D Objects
W3 - Lesson 3	Transformations
W3 - Lesson 4	Statistics and Probability
W3 - Lesson 5	Chance and Probability
W3 - Quiz	

Materials Required

Protractor
Ruler
Calculator

A textbook is not
needed.

This is a stand-alone
course.

Mathematics Grade 5

Version 5

Preview/Review W3 - Lesson 4 TEACHER KEY

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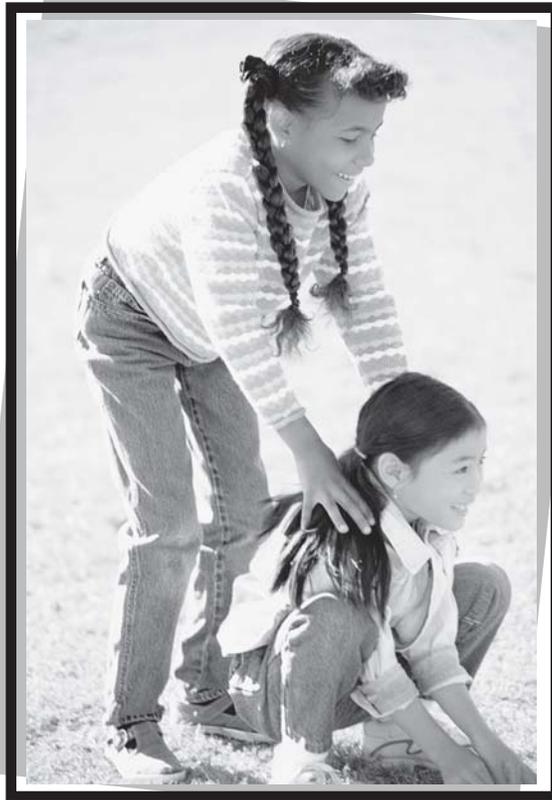
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Preview/Review Concepts for Grade Five Mathematics

TEACHER KEY



*W3 - Lesson 4:
Statistics and Probability*

OBJECTIVES

By the end of this lesson, you should

- use various methods to obtain, display, and interpret data
- understand the nature of probability



Glossary of Terms

Broken-line graph: a line graph with broken lines to demonstrate a quantity of change

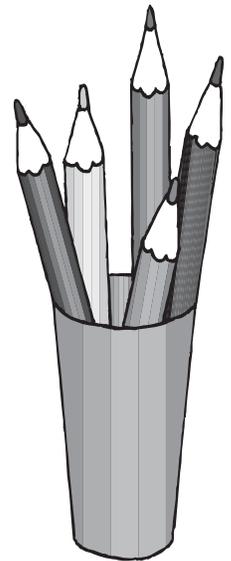
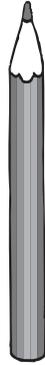
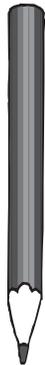
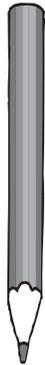
Data: information gathered and analyzed

Frequency: the number of times something happens or occurs

Frequency diagram: a chart for recording collected data

Pictograph: a graph that uses symbols and/or pictures to represent quantity of data

Population: an entire group of people or things for which information is required



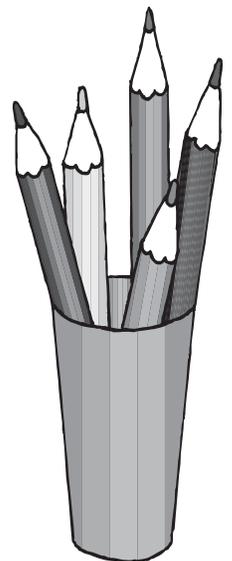


Random:

not specifically chosen; happens by chance

Sample:

a selection of a population for which information is gathered



W3 - Lesson 4: Statistics and Probability

Concepts:

- Collection of Data
- Display of Data
- Interpretation of Data

Collection of Data

A large white oval with a black border is centered on the page. Inside the oval, the text "Coke or Pepsi?" is written in a large, black, sans-serif font.

Suppose you were asked to do an independent study on whether people preferred Coke or Pepsi. Where would you start? Where would you get your information?

First, you need to decide what type of experiment you are going to do. Are you going to ask people their favorite pop? Are you going to do a taste test? Are you going to watch a convenience store to see which pop is sold the most? What about asking Coke and Pepsi how much they sell?

1. As you can see, you may collect the data in many different ways. What way would you choose?

Answers may vary. Students should choose a method listed on the glossary page. Other students may say that they would ask students in their class or grade.

2. Give two reasons this is a good method.

Students should give two reasons that support the answer given in question #1.

3. Give two reasons this is not a good method.

Students should give two reasons or disadvantages to the answer given in question #1.

4. Because you cannot take everyone’s opinion, you need to find a sample population. Name three possible sample populations for the Coke or Pepsi question.

Answers may vary. Possible answers may include, but are not limited to, people at the

mall, at local store, in a youth group, at a swimming pool, or on a beach.

5. A small population is only one limit placed on data collectors. What other factors may limit your ability to collect data?

Answers may vary. Possible answers may include, but are not limited to, time (takes a

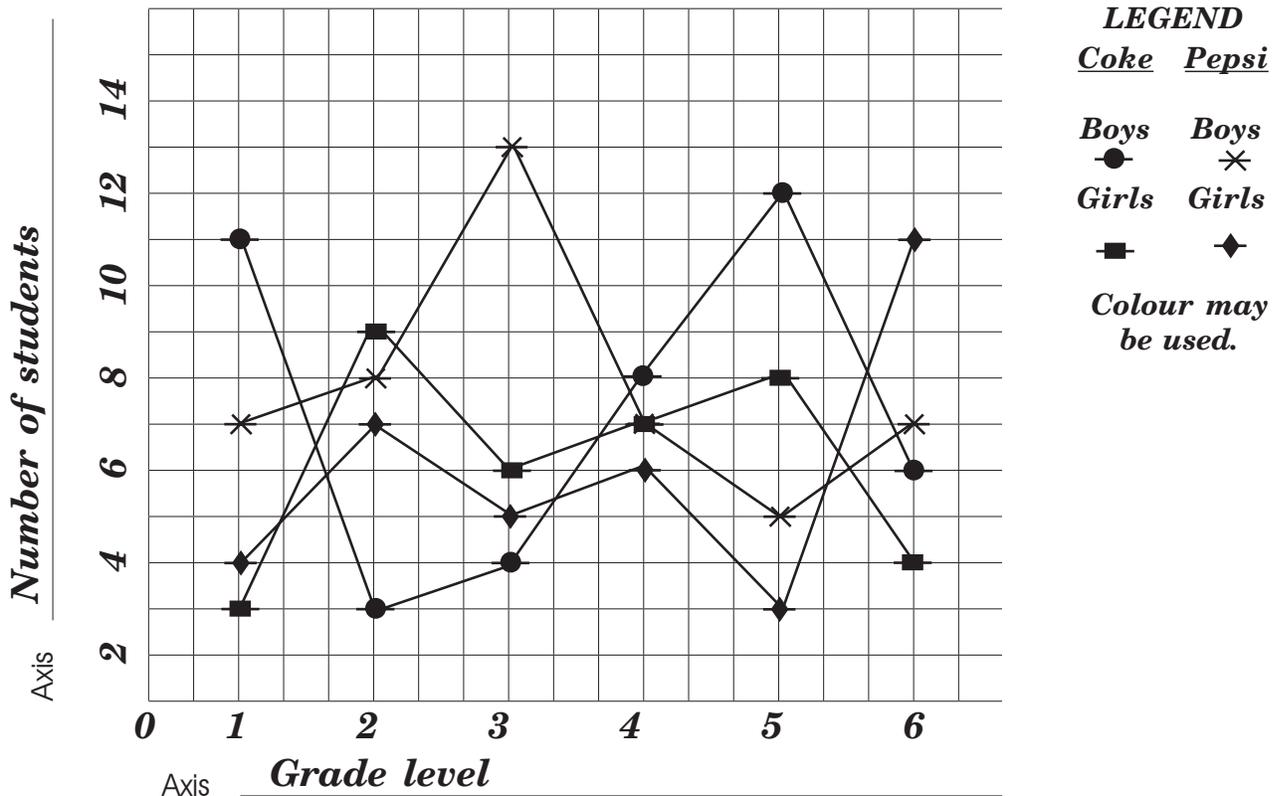
long time to ask a large group of people) and location.

Display of Data

Important data is often lost because it is poorly displayed. Using the information given, input the information on the graphs found on page 5, 6, and 7. Do not forget to label your graphs. You may choose to make a broken-line graph, a pictograph, or a double-bar graph.

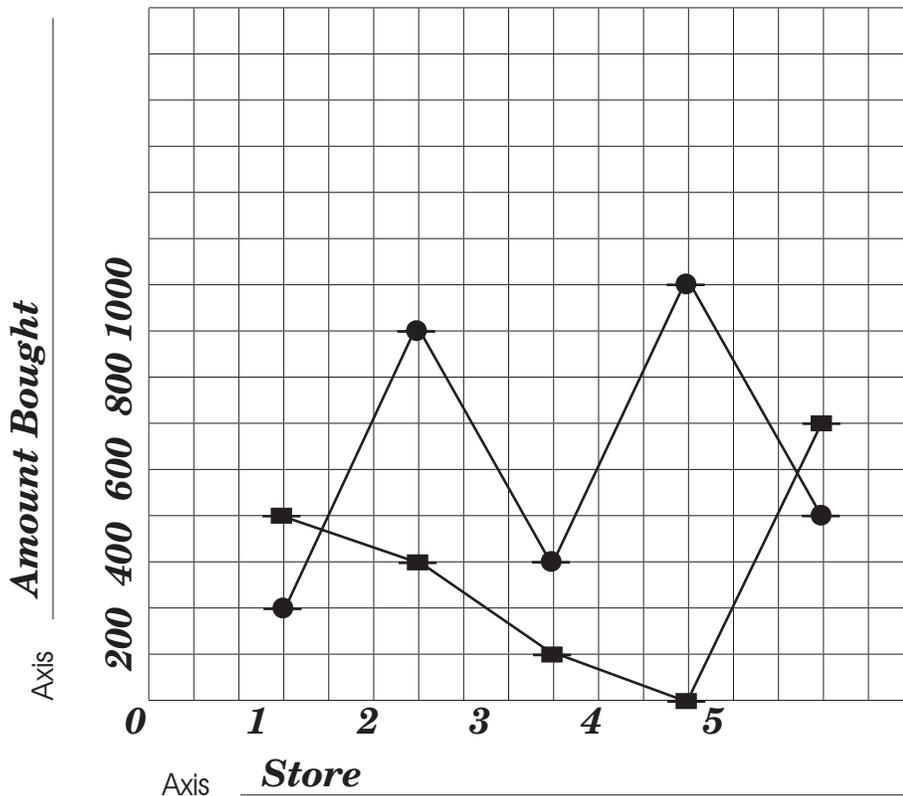
Survey - Raise of Hand				
Grade	Coke		Pepsi	
	Boys	Girls	Boys	Girls
Grade 1	11	3	7	4
Grade 2	3	9	8	7
Grade 3	4	6	13	5
Grade 4	8	7	7	6
Grade 5	12	8	5	3
Grade 6	6	4	7	11
	44	37	47	36

Title: Survey - Raise of Hand



Amount Each Store Buys		
Convenience Stores	Coke	Pepsi
Store 1	200	400
Store 2	800	300
Store 3	300	100
Store 4	900	0
Store 5	400	600

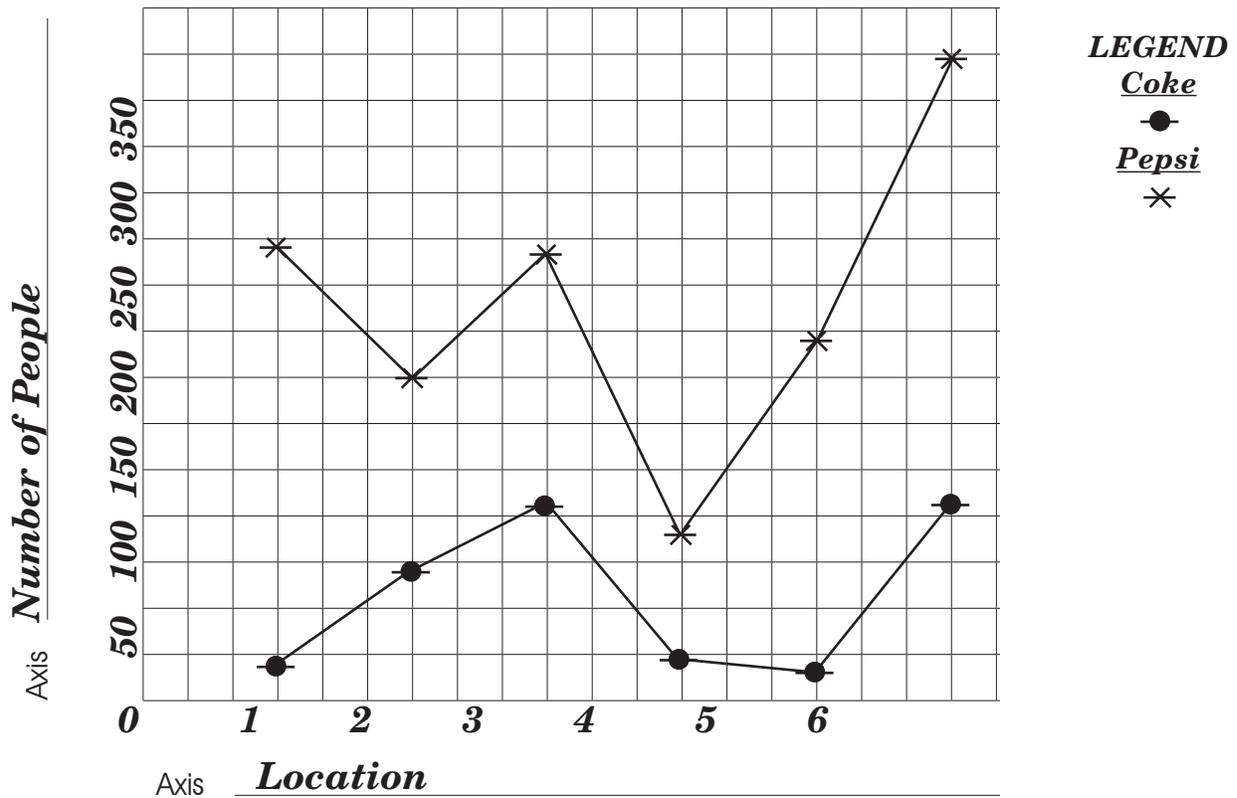
Title: *Amount Each Store Buys*



LEGEND
Coke ●
Pepsi ■

Pepsi Taste Test Results - Provided by Pepsi		
	Coke	Pepsi
Location 1	23	245
Location 2	72	175
Location 3	108	234
Location 4	24	84
Location 5	14	197
Location 6	103	345

Title: *Pepsi Taste Test Results*



Interpretation of Data

Well, you have collected your data and displayed it. Now, it's time to interpret your data.

1. Do more people prefer Coke or Pepsi?

The data does not support a clear winner. The Pepsi Taste Test is a biased result.

2. Do you feel this is an accurate study? Explain.

Answers may vary.

3. Name two ways you could have made this study more fair?

Answers may vary. Possible answers include a "Coke Taste Test." The Coke vs. Pepsi Contest should be done by an independent group of data collectors.

4. Which two graphs show the closest results?

Survey - Raise of Hands, Amount Each Store Buys

5. One convenience store did not buy any Pepsi. Do you think this is a true reflection about how they feel about Pepsi?

No. The store may choose to offer only one brand of cola.

Perhaps they can buy Coke cheaper.

6. How does this affect the results of that data chart?

Fewer people appear to like Pepsi.

Sometimes data is corrupted or unable to be used. Add your totals for the convenience stores without including the results of Store 4. Chart your data below.

	First Time Coke	First Time Pepsi	Second Time Coke	Second Time Pepsi
Store 1	200	400	200	400
Store 2	800	300	800	300
Store 3	300	100	300	100
Store 4	900	0	-	-
Store 5	400	600	400	600
Totals	2600	1400	1700	1400

If you were to do this analysis again without Store 4, how would your results differ from your first sampling?

There is a more even distribution of Coke and Pepsi among the stores.

Answers may vary.
