

Grade 8 Mathematics

Data Analysis, Probability, and Discrete Math:

Lesson 6

Read aloud to the students the material that is printed in **boldface type** inside the boxes. Information in regular type inside the boxes and all information outside the boxes should **not** be read to students. Possible student responses are included in parentheses after the questions.

NOTE: The directions read to students may depend on the available materials. Read only those parts of the lesson that apply to the materials you are using.

Any directions that ask you to do something, such as to turn to a page or to hand out materials to students, will have an arrow symbol (\Downarrow) by them.

Purpose of Lesson 6:

- In this lesson, the tutor and the students will
 - ✓ interpret and use information from a variety of graphs, and
 - ✓ look for patterns in data and make conjectures based on the patterns.

Equipment/Materials Needed:

- Copies of Student Sheet 78
- Paper and pencils

Preparations before beginning Lesson 6:

- Run one copy of Student Sheet 78 for each student.
- Have paper and pencils available.

Lesson 6: Data Analysis

Say:

In this lesson, you will use information from a variety of graphs to answer questions about the graphs.

└ Give Student Sheet 78 Part A to the students.

Say:

The first graph is a *circle graph* or *pie graph*. What do the percents add to? (102%) If circle graphs are supposed to show 100%, why does it add to 102%? (The percentages were rounded.) Circle graphs show how portions of a set of data compare with the whole set. Have the students talk about each problem and tell how they found the answers. This activity is also a review of percents.

Answers:

1. C 2. A 3. C 4. D 5. B

└ Give students Part B of Student Sheet 78.

Say:

This part of the student sheet will review the ideas of mean, median, mode, and range.

Answers:

6. B 7. C 8. C 9. D 10. B

└ Give Student Sheet 78 Part C to the students. This activity is a chart that they have seen before, but the questions are different.

Answers:

11. B 12. B 13. C 14. D

└ Give part D of Student Sheet 78 to the students. Again, they have seen this graph, but the questions are different.

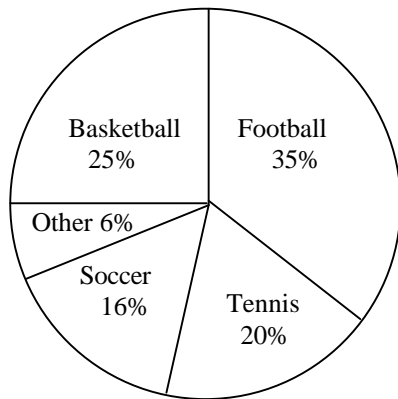
Answers:

15. A 16. C 17. D

└ Have one student summarize today's lesson. This lesson provided review in answering different types of questions about data in a graph.

Student Sheet 78 (Data Analysis: Lesson 6)

Part A



Use the graph to the left to answer questions 1 – 4.

Students at Thomas Middle School were surveyed about their favorite spectator sport. The results are shown in the graph. Each student was allowed only one vote. Percentages were rounded to the nearest whole number.

1. What two sports together received 45% of the votes?
 - A. Basketball and Football
 - B. Football and Tennis
 - C. Basketball and Tennis
 - D. Soccer and Football
2. Which sport received $\frac{1}{4}$ of the votes?
 - A. Basketball
 - B. Football
 - C. Tennis
 - D. Soccer
3. If 420 students were surveyed, approximately how many chose “other” sports as their favorite?
 - A. 250 students
 - B. 70 students
 - C. 25 students
 - D. 4 students
4. What decimal represents the number of students who preferred soccer?
 - A. 160.0
 - B. 16.0
 - C. 1.6
 - D. 0.16
5. Which is a reasonable conclusion that could be drawn from the graph?
 - A. More students like tennis than football.
 - B. Approximately twice as many students chose football rather than soccer.
 - C. Basketball is the least popular spectator sport.
 - D. One-sixteenth of the students chose soccer.

Student Sheet 78 (Data Analysis: Lesson 6)

Part B

Use the chart below to answer questions 4 - 6. The low temperatures in New Orleans for one week in January are shown in the chart.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
27° F	34° F	28° F	32° F	30° F	66° F	66° F

6. How many days had low temperatures that were at, or below, freezing?
- A. 3 days B. 4 days C. 5 days D. 6 days
7. What was the range of temperatures for the week?
- A. 26° B. 29° C. 39° D. 273°
8. What was the mean low temperature for the week? (rounded to the nearest whole degree)
- A. 283°F B. 56°F C. 40°F D. 32°F
9. What low temperature was the mode?
- A. 27°F B. 32°F C. 40°F D. 66°F
10. What was the median low temperature?
- A. 27°F B. 32°F C. 40°F D. 66°F

Student Sheet 78 (Data Analysis: Lesson 6)

Part C

The chart below shows the prices of tennis equipment over a few years.







Prices of Tennis Equipment			
	1990	1995	2000
Racket	\$55.00	\$62.00	\$74.00
Balls	2.98	3.98	4.49
Shoes	32.99	39.99	45.99

11. If Susan had \$100 to spend, what percent of that amount would be spent on a racket in the year 2000?
- A. 135% B. 74% C. 26% D. 13.5%
12. If prices continue to rise as they have in these past 10 years, what would you predict to be the cost of tennis balls in 2005?
- A. \$4.50 B. \$5.25 C. \$8.75 D. \$10.50
13. What is the average price, to the nearest penny, of shoes for the 3 years?
- A. \$118.97 B. \$39.99 C. \$39.66 D. \$32.99
14. What can be concluded from this graph?
- A. The price of rackets has doubled since 1990.
B. Shoes cost $\frac{1}{2}$ of the price of a racket in 1990.
C. You could buy 20 cans of tennis balls for the cost of one racket in 1995.
D. The price of tennis balls in 2000 is approximately $1\frac{1}{2}$ greater than the price in 1990.

Student Sheet 78 (Data Analysis: Lesson 6)

Part D

The graph below shows the number of computers in the classes at Jefferson Middle School.

Number of Computers at Jefferson Middle School	
Room 21	
Room 22	
Room 23	
Room 24	
Room 25	
Room 26	

 **represents 5 computers.**

15. What is the range of numbers of computers in the 6 classrooms?
- A. 25 computers
 - B. 20 computers
 - C. 5 computers
 - D. 2 computers
16. What is the median number of computers in the classrooms?
- A. 5.5 computers
 - B. 25 computers
 - C. 27.5 computers
 - D. 30 computers
17. If there are 30 students in Room 22, what percent of the students can be on the computers at one time?
- A. 10%
 - B. 15%
 - C. 30%
 - D. 50%