Applications Connections Extensions ACE

Applications

1. In a comparison taste test of two drinks, 780 students preferred Berry Blast. Only 220 students preferred Melon Splash. Complete each statement.

a. There were ■ more people who preferred Berry Blast.

b. In the taste test, ■% of the people preferred Berry Blast.

c. People who preferred Berry Blast outnumbered those who preferred Melon Splash by a ratio of ■ to ■.

2. In a comparison taste test of new ice creams invented at Moo University, 750 freshmen preferred Cranberry Bog ice cream while 1,250 freshmen preferred Coconut Orange ice cream.

Complete each statement.

a. The fraction of freshmen who preferred Cranberry Bog is ■.

b. The percent of freshmen who preferred Coconut Orange is ■%.

c. Freshmen who preferred Coconut Orange outnumbered those who preferred Cranberry Bog by a ratio of ■ to ■.

3. A town considers whether to put in curbs along the streets. The ratio of people who support putting in curbs to those who oppose it is 2 to 5.

a. What fraction of the people *oppose* putting in curbs?

b. If 210 people in the town are surveyed, how many do you expect to *favor* putting in curbs?

c. What percent of the people oppose putting in curbs?

Students at a middle school are asked to record how they spend their time from midnight on Friday to midnight on Sunday. Carlos records his data in the table below. Use the table for Exercises 4–7.

Weekend Activities

Activity	Number of Hours
Sleeping	18
Eating	2.5
Recreation	8
Talking on the Phone	2
Watching Television	6
Doing Chores or Homework	2
Other	9.5

4. How would you compare how Carlos spent his time on various activities over the weekend? Explain.

5. Decide if each statement is an accurate description of how Carlos spent his time that weekend.

a. He spent one sixth of his time watching television.

b. The ratio of hours spent watching television to hours spent doing chores or homework is 3 to 1.

c. Recreation, talking on the phone, and watching television took about 33% of his time.

d. Time spent doing chores or homework was only 20% of the time spent watching television.

e. Sleeping, eating, and "other" activities took up 12 hours more than all other activities combined.

6. Estimate what the numbers of hours would be in *your* weekend activity table. Then write a ratio statement like statement (b) to fit your data.

7. Write other accurate statements comparing Carlos's use of weekend time for various activities. Use each concept at least once.

a. ratio

b. difference

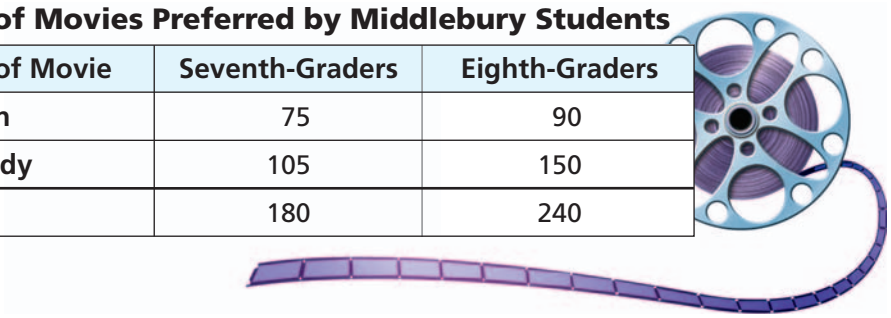
c. fraction

d. percent

8. A class at Middlebury Middle School collected data on the kinds of movies students prefer. Complete each statement using the table.

Types of Movies Preferred by Middlebury Students

Type of Movie	Seventh-Graders	Eighth-Graders
Action	75	90
Comedy	105	150
Total	180	240



a. The ratio of seventh-graders who prefer comedies to eighth-graders who prefer comedies is ■ to ■.

b. The fraction of total students (both seventh- and eighth-graders) who prefer action movies is ■.

c. The fraction of seventh-graders who prefer action movies is ■.

d. The percent of total students who prefer comedies is ■.

e. The percent of eighth-graders who prefer action movies is ■.

f. Grade ■ has the greater percent of students who prefer action movies.

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9. Use the table.

Selected Champion Trees

Tree Type	Height (ft)	Spread (ft)
Florida Crossopetalum	11	3
White Oak	96	119

a. The height of the crossopetalum (kroh soh PET uh lum) is what fraction of the height of the white oak?

b. The height of the crossopetalum is what percent of the height of the white oak?

c. The spread of the crossopetalum is what fraction of the spread of the white oak?

d. The spread of the crossopetalum is what percent of the spread of the white oak?

10. In a survey, 100 students were asked if they prefer watching television or listening to the radio. The results show that 60 students prefer watching television while 40 prefer listening to the radio. Use each concept at least once to express student preferences.

a. ratio

b. percent

c. fraction

d. difference

Connections

11. A fruit bar is 5 inches long. The bar will be split into two pieces. For each situation, find the lengths of the two pieces.

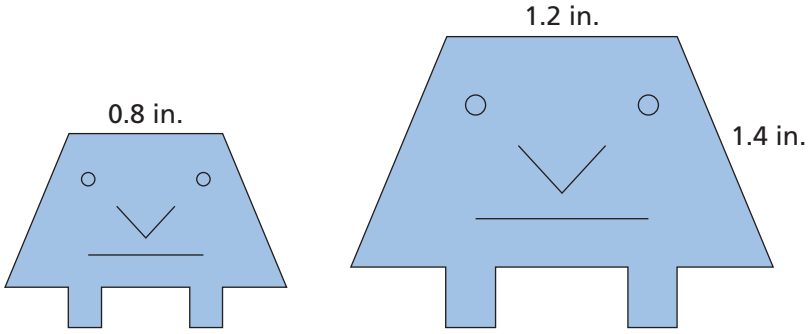
a. One piece is $\frac{3}{10}$ of the whole bar.

b. One piece is 60% of the bar.

c. One piece is 1 inch longer than the other.

12. Exercise 11 includes several numbers or quantities: 5 inches, 3, 10, 60%, and 1 inch. Determine whether each number or quantity refers to the whole, a part, or the difference between two parts.

The sketches below show two members of the Grump family. The figures are geometrically similar. Use the figures for Exercises 13–16.



13. Write statements comparing the lengths of corresponding segments in the two Grump drawings. Use each concept at least once.

a. ratio **b.** fraction

c. percent **d.** scale factor

14. Write statements comparing the areas of the two Grump drawings. Use each concept at least once.

a. ratio **b.** fraction

c. percent **d.** scale factor

15. How long is the segment in the smaller Grump that corresponds to the 1.4-inch segment in the larger Grump?

16. **Multiple Choice** The mouth of the smaller Grump is 0.6 inches wide. How wide is the mouth of the larger Grump?

A. 0.4 in. **B.** 0.9 in. **C.** 1 in. **D.** 1.2 in.

The drawing below shows the Big Wheel spinner used in a game at the Waverly School Fun Night. It costs 20 cents to spin the wheel, and winners receive $1.00. The chart shows the data from 236 spins of the Big Wheel. Use the spinner and the chart for Exercises 17–21.

Win	Lose
46	190

17. The sectors of the spinner are identical in size. What is the measure in degrees of each central angle?

18. You play the game once. What is the theoretical probability that you win?

19. Do the results in the table agree with the probability statement you made in Exercise 18? Why or why not?

20. Write statements comparing the number of wins to the number of losses. Use each concept at least once.

a. ratio **b.** percent **c.** difference

21. Which comparison from Exercise 20 is the best way to convey probability information about this game? Explain.

22. Copy the number line below. Add labels for 0.25, $\frac{6}{8}$, $1\frac{3}{4}$, and 1.3.

23. Write two unequal fractions with different denominators. Which fraction is greater? Explain.

24. Write a fraction and a decimal so that the fraction is greater than the decimal. Explain.

Copy each pair of numbers in Exercises 25–33. Insert <, >, or = to make a true statement.

25. $\frac{4}{5}$ ■ $\frac{11}{12}$ **26.** $\frac{14}{21}$ ■ $\frac{10}{15}$ **27.** $\frac{7}{9}$ ■ $\frac{3}{4}$

28. 2.5 ■ 0.259 **29.** 30.17 ■ 30.018 **30.** 0.006 ■ 0.0060

31. 0.45 ■ $\frac{9}{20}$ **32.** $1\frac{3}{4}$ ■ 1.5 **33.** $\frac{1}{4}$ ■ 1.3

Extensions

34. Rewrite this ad so that it will be more effective.

35. Use the table below.

Money Spent for Food

Where Food Is Eaten	1990	1998
Home	$303,900,000,000	$401,800,000,000
Away From Home	$168,800,000,000	$354,400,000,000

SOURCE: U.S. Census Bureau. Go to PHSchool.com for a data update. Web Code: ang-9041

a. Compare money spent on food eaten at home and food eaten away from home to the total money spent for food. Write statements for each year.

b. Explain how the statements you wrote in part (a) show the money spent for food away from home increasing or decreasing in relation to the total spent for food.

Use the table for Exercises 36–41.

Advertising Spending in the United States (millions)

Placement	1990	2000
Newspapers	$32,281	$46,582
Magazines	$6,803	$11,096
Television	$29,073	$50,843
Radio	$8,726	$16,930
Yellow Pages	$8,926	$12,666
Internet	$0	$1,840
Direct Mail	$23,370	$41,601
Other	$20,411	$33,671
Total	$129,590	$215,229

SOURCE: U.S. Census Bureau. Go to **PHSchool.com** for a data update. Web code: ang–9041

36. Which placement has the greatest difference in advertising dollars between 1990 and 2000?

37. Find the percent of all advertising dollars spent on each placement in 1990.

38. Find the percent of all advertising dollars spent on each placement in 2000.

39. Use your results from Exercises 36–38. Write several sentences describing how advertising spending changed from 1990 to 2000.

40. Suppose you were thinking about investing in either a television station or a radio station. Which method of comparing advertising costs (differences or percents) makes television seem like the better investment? Which makes radio seem like the better investment?

41. Suppose you are a reporter writing an article about trends in advertising over time. Which method of comparison would you choose?