

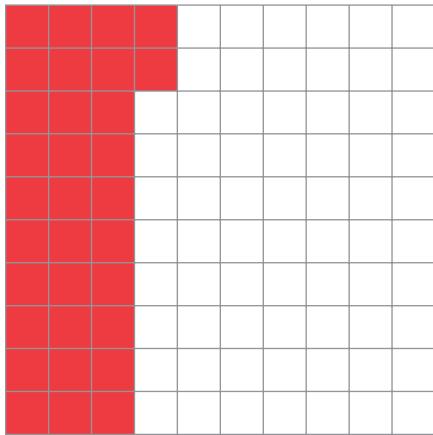
Lesson 6.1 Assignment

NAME _____ DATE _____

Percents Can Make or Break You! Introduction to Percents

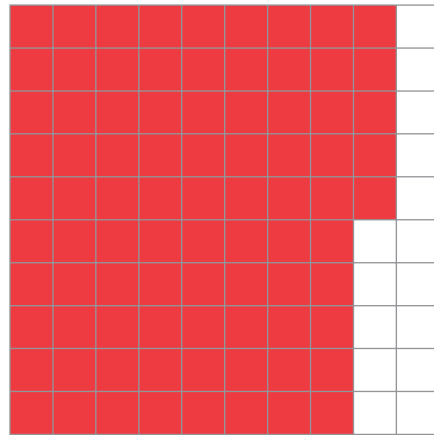
Shade each hundredths grid to represent the percent. Then, write the equivalent fraction and decimal.

1. 32%



$$\frac{32}{100}, 0.32$$

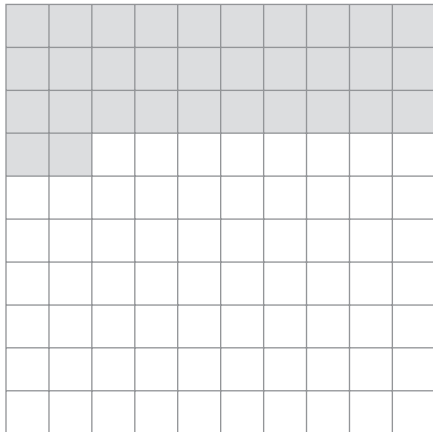
2. 85%



$$\frac{85}{100}, 0.85$$

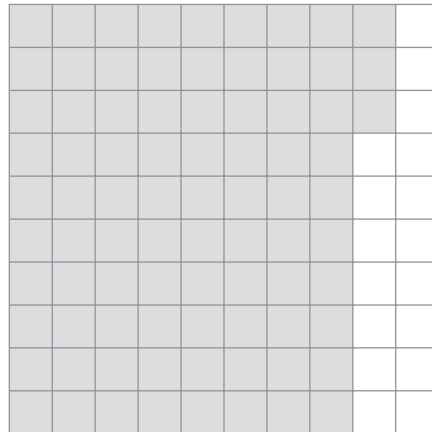
Each hundredths grid represents a whole. Write the shaded part as a fraction, decimal, and percent.

3.



$$\frac{32}{100} = \frac{8}{25}, 0.32, 32\%$$

4.



$$\frac{83}{100}, 0.83, 83\%$$

Write each decimal as a percent.

5. 0.61
61%

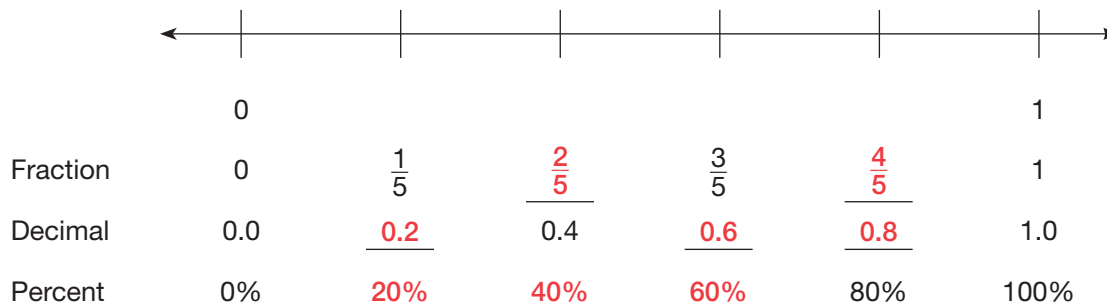
6. 0.7
70%

7. 0.555
55.5%

8. Describe how to easily write a decimal as a percent.

To write a decimal as a percent, move the decimal point two places to the right.

9. Label each mark on the number line with a fraction, decimal, and percent. Make sure your fractions are in simplest form.



10. The table shows the portions of sixth graders at your school who have each number of siblings. Complete the table by representing each portion as a ratio, a fraction, a decimal, and a percent. Make sure your fractions and ratios are in simplest form.

Number of Siblings	Ratio	Fraction	Decimal	Percent
0	3 : 20	$\frac{3}{20}$	0.15	15%
1	1 : 5	$\frac{1}{5}$	0.2	20%
2	3 : 8	$\frac{3}{8}$	0.375	37.5%
3	6 : 25	$\frac{6}{25}$	0.24	24%
4 or more	7 : 200	$\frac{7}{200}$	0.035	3.5%

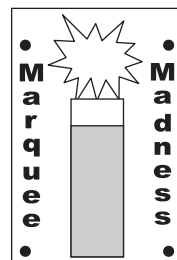
Lesson 6.2 Assignment

NAME _____ DATE _____

Wacky Weather! Estimating Percents

1. A community theater is trying to raise money for a new marquee. The shaded region on the sign posted in front of the theater shows the progress so far. Estimate the theater's progress toward its goal as a percent.

Sample answer: 80%



2. The students at Penncrest Middle School sold various products for a fall fundraiser. The table shows the percent of profit the school earned and the total amount sold for each type of product.

Product	Percent Profit	Amount Sold
Candy	65%	\$6400
Wrapping paper	40%	\$1200
Stationery	50%	\$900
Calendars	25%	\$3120

- a. Use benchmark percents to calculate how much profit the school earned on candy. Show your work.

Sample answer:

10% of \$6400 is \$640.

60% of \$6400 is $6(\$640)$, or \$3840.

Half of 10% is 5%, so 5% of \$6400 is half of \$640, or \$320.

65% of \$6400 is $\$3840 + \320 , or \$4160.

The school earned \$4160 on candy.

- b. Use benchmark percents to calculate how much profit the school made on wrapping paper. Show your work.

Sample answer:

10% of \$1200 is \$120.

40% of \$1200 is $4(\$120)$, or \$480.

The school earned \$480 on wrapping paper.

- c. Use benchmark percents to calculate how much profit the school earned on stationery. Explain your reasoning using complete sentences.

Sample answer:

50% of \$900 is half of \$900, or \$450.

The school earned \$450 on stationery.

- d. Use benchmark percents to calculate how much profit the school earned on calendars. Explain your reasoning using complete sentences.

Sample answer:

10% of \$3120 is \$312.

20% of \$3120 is 2(\$312), or \$624.

Half of 10% is 5%, so 5% of \$3120 is half of \$312, or \$156.

25% of \$3120 is \$624 + \$156, or \$780.

The school earned \$780 on calendars.

- e. How much total profit did Penncrest Middle School earn during its fall fundraiser?
Show your work.

$$\$4160 + \$480 + \$450 + \$780 = \$5870$$

Penncrest Middle School earned a total profit of \$5870 during its fall fundraiser.

- f. The school newspaper reported that the students sold \$11,620 worth of products and earned the school about 50% profit. Was the newspaper report accurate? Explain.

Yes. The school newspaper was accurate. Because $\$6400 + \$1200 + \$900 + \$3120 = \$11,620$, the total amount sold was \$11,620. Half, or 50%, of \$11,620 is \$5810, which is very close to the school's actual total profit of \$5870.

Lesson 6.3 Assignment

NAME _____ DATE _____

It's All in the Follow-Through Determine the Percent of a Number

Mr. Hawkins manages a small store called Action Sporting Goods. He works with percents a lot when planning store sales and calculating sales tax, but he also uses percents for his management duties.

1. Mr. Hawkins wants to make sure that his store is stocked with enough equipment for all of the community sports. He surveys 240 of his customers and asks them to choose the one sport that they're most likely to buy sports equipment for this season.

Sport	Percent of Responses
Basketball	30%
Baseball	20%
Football	35%
Wrestling	15%

- a. How many of his customers will need baseball equipment?

$$0.20(240) = 48$$

There are 48 customers who will need baseball equipment.

- b. How many of his customers will need wrestling equipment?

$$0.15(240) = 36$$

There are 36 customers who will need wrestling equipment.

- c. How many of his customers will need football equipment?

$$0.35(240) = 84$$

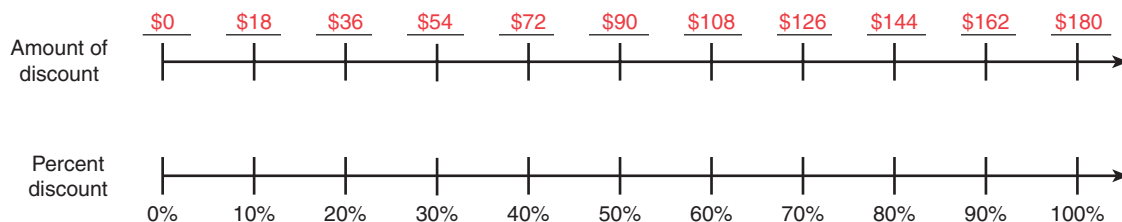
There are 84 customers who will need football equipment.

- d. How many of his customers will need basketball equipment?

$$0.30(240) = 72$$

There are 72 customers who will need basketball equipment.

2. Mr. Hawkins is going to put his golf equipment on sale at the end of the summer. A set of junior golf clubs at Action Sporting Goods costs \$180. Use a double number line to represent the discount available for each percent.



3. Salespeople at Action Sporting Goods get a 20% employee discount on all full-price items they purchase. An employee named Erik buys a football jersey priced at \$119.

- a. How much is Erik's discount on the football jersey? Show your work.

$$\begin{aligned}
 20\% \text{ of } \$119 &= 0.2 \times 119 \\
 &= \$23.80
 \end{aligned}$$

Erik's discount on the football jersey is \$23.80.

- b. How much does Erik have to pay for the football jersey before tax? Show your work.

$$\begin{aligned}
 \$119 - \$23.80 &= \$95.20 \\
 \text{Erik must pay } &\$95.20 \text{ for the football jersey before tax.}
 \end{aligned}$$

- c. Explain how to find Erik's discounted price for the football jersey in only one step.

Taking off a discount of 20% is the same as paying 80% of the full price. To find Erik's discounted price for the football jersey in one step, multiply the full price by 80%.

$$\begin{aligned}
 80\% \text{ of } \$119 &= 0.80 \times 119 \\
 &= \$95.20
 \end{aligned}$$

NAME _____ DATE _____

4. Action Sporting Goods has a merchant service provider that allows the store to accept credit and debit cards for purchases. This provider charges the store a fee of 3% on all credit and debit sales. Mr. Hawkins double checks the charges from the merchant services provider each month. Last month, the store's credit and debit sales totaled \$12,950. What fee should Mr. Hawkins expect to pay the merchant service provider? Show your work.

$$\begin{aligned} 3\% \text{ of } \$12,950 &= 0.03 \times 12,950 \\ &= \$388.50 \end{aligned}$$

Mr. Hawkins should expect to pay a fee of \$388.50 to the merchant service provider.

5. Each month Mr. Hawkins must send a payment for state sales tax. The tax is 6% of the store's taxable sales. The store's taxable sales total for last month was \$13,487.

- a. How much is the state sales tax for last month? Show your work.

$$\begin{aligned} 6\% \text{ of } \$13,487 &= 0.06 \times 13,487 \\ &= \$809.22 \end{aligned}$$

Mr. Hawkins needs to send \$809.22 to pay the state sales tax.

- b. The state gives a 1% discount on the sales tax due if it is paid on time. How much is the discount? Show your work.

$$\begin{aligned} 1\% \text{ of } \$809.22 &= 0.01 \times 809.22 \\ &\approx \$8.09 \end{aligned}$$

The discount is \$8.09.

- c. Mr. Hawkins plans to send his sales tax payment in before it is due to receive the 1% discount. How much does Mr. Hawkins have to send for last month's sales tax? Show your work.

$$\$809.22 - \$8.09 = \$801.13$$

Mr. Hawkins has to send \$801.13 for last month's sales tax.

Lesson 6.4 Assignment

NAME _____ DATE _____

Mi Mi Mi Mi Mi Mi Mi!

Determine the Part, Whole, or Percent of Percent Problems

Basketball is a popular sport at Union Middle School for both boys and girls.

- At Union Middle School, 99 boys, or 36% of the boys, play basketball.
 - How many boys attend Union Middle School? Show your work.

$$\begin{aligned}\frac{x}{100} &= \frac{p}{w} \\ \frac{36}{100} &= \frac{99}{w} \\ \frac{9}{25} &\xrightarrow{\times 11} \frac{99}{w} \\ 275 &= w\end{aligned}$$

There are 275 boys who attend Union Middle School.

- Of the 99 boys who play basketball, 37 are sixth graders. What percent of the boy basketball players are sixth graders? Show your work and round your answer to the nearest percent.

$$\begin{aligned}\frac{x}{100} &= \frac{p}{w} \\ \frac{x}{100} &= \frac{37}{99} \\ \frac{x}{100} &= 0.\overline{37} \\ x &= 100(0.\overline{37}) \\ x &\approx 37\end{aligned}$$

About 37% of the boy basketball players are sixth graders.

- Of the 99 boys who play basketball, 32 are seventh graders. What percent of the boy basketball players are seventh graders? Show your work and round your answer to the nearest percent.

$$\begin{aligned}\frac{x}{100} &= \frac{p}{w} \\ \frac{x}{100} &= \frac{32}{99} \\ \frac{x}{100} &= 0.\overline{32} \\ x &= 100(0.\overline{32}) \\ x &\approx 32\end{aligned}$$

About 32% of the boy basketball players are seventh graders.

- d. Of the 99 boys who play basketball, 30 are eighth graders. What percent of the boy basketball players are eighth graders? Show your work and round your answer to the nearest percent.

$$\frac{x}{100} = \frac{p}{w}$$

$$\frac{x}{100} = \frac{30}{99}$$

$$\frac{x}{100} = 0.\overline{30}$$

$$x = 100(0.\overline{30})$$

$$x \approx 30$$

About 30% of the boy basketball players are eighth graders.

- e. Notice that the number of players and the percents for each grade of boys are the same. Explain why this is the case.

Because the total number of boy basketball players is 99 and 99 is very close to 100, the number of players in a specific grade is going to be almost the same as the percent of boy players in that grade.

2. At Union Middle School, 55 girls, or 22% of the girls, play basketball.
- a. How many girls attend Union Middle School? Show your work.

$$\frac{x}{100} = \frac{p}{w}$$

$$\frac{22}{100} = \frac{55}{w}$$

$$\frac{11}{50} \xrightarrow{\times 5} \frac{55}{w}$$

$$250 = w$$

There are 250 girls who attend Union Middle School.

- b. Of the 55 girls who play basketball, 25 are sixth graders. What percent of the girl basketball players are sixth graders? Show your work and round your answer to the nearest percent.

$$\frac{x}{100} = \frac{p}{w}$$

$$\frac{x}{100} = \frac{25}{55}$$

$$\frac{x}{100} = 0.\overline{45}$$

$$x = 100(0.\overline{45})$$

$$x \approx 45$$

About 45% of the girl basketball players are sixth graders.

Lesson 6.5 Assignment

NAME _____ DATE _____

Practical Percents Practice! Using Percents in Real-World Situations

Kendall and Kasey haven't seen each other in months! They decide to meet for dinner. During the meal, Kasey tells Kendall all about her new job at The Foot Parade.

1. Kasey tells Kendall about some of the perks of her new job. "We sell the coolest, most stylish shoes, and I get a 35% employee discount on anything I buy!"

- a. How much would Kasey pay for a \$75 pair of shoes?

$$\text{discount: } \$75 \times 0.35 = \$26.25$$

$$\text{sale price: } \$75 - \$26.25 = \$48.75$$

Kasey would pay \$48.75 for the shoes.

- b. How much would Kasey pay for a \$120 pair of boots?

$$\text{discount: } \$120 \times 0.35 = \$42$$

$$\text{sale price: } \$120 - \$42 = \$78$$

Kasey would pay \$78 for the boots.

- c. If Kasey got a \$5.25 discount on her new flip-flops, how much did they cost originally?

$$\frac{x}{100} = \frac{p}{w}$$

$$\frac{35}{100} = \frac{5.25}{w}$$

$$35w = 5.25(100)$$

$$35w = 525$$

$$w = 15$$

The flip-flops originally cost \$15.

2. “Does The Foot Parade have a lot of shoes to choose from?” Kendall asks Kasey. “We have 675 pairs of shoes in stock!” Kasey replies.

a. If The Foot Parade has 105 pairs of hiking boots in stock, what percent of their shoe selection is hiking boots? Round your answer to the nearest percent.

$$\frac{105}{675} = 0.15\overline{5}$$

$$\approx 0.16$$

Approximately 16% of The Foot Parade’s shoe stock is hiking boots.

b. If The Foot Parade has 75 pairs of flip-flops in stock, what percent of their shoe selection is flip-flops? Round your answer to the nearest percent.

$$\frac{75}{675} = 0.1\overline{1}$$

$$\approx 0.11$$

Approximately 11% of The Foot Parade’s shoe stock is flip-flops.

3. “That sounds like an awesome job!” Kendall replies. “But, is the pay any good?” Kasey explains that she is paid on commission; she earns 17% commission on her sales.

a. If Kasey sold \$550 worth of shoes during her shift yesterday, how much money did she earn?

$$\$550 \times 0.17 = \$93.50$$

Kasey earned \$93.50 in commission yesterday.

b. If Kasey earned \$140.25 last Friday, what was the total amount of her sales?

$$\frac{x}{100} = \frac{p}{w}$$

$$\frac{17}{100} = \frac{140.25}{w}$$

$$17w = 140.25(100)$$

$$17w = 14025$$

$$w = 825$$

Kasey sold \$825 worth of shoes last Friday.

NAME _____ DATE _____

4. “You should come shopping there next weekend,” says Kasey. “We’re having a great sale—40% off everything.”

- a. If Kendall buys a \$35 pair of shoes next weekend, how much will she pay after the 6% sales tax?

cost with discount, before tax: $\$35 \times 0.6 = \21

tax calculation on discounted price: $\$21 \times 1.06 = \22.26

Kendall will pay a total of \$22.26 for the shoes.

- b. If Kendall buys a \$90 pair of hiking boots next weekend, how much will she pay after the 6% sales tax?

cost with discount, before tax: $\$90 \times 0.6 = \54

tax calculation on discounted price: $\$54 \times 1.06 = \57.24

Kendall will pay \$57.24 for the hiking boots.

5. After a long dinner together, the waitress arrives with the check. Kasey agrees to pay the \$38 bill, and Kendall offers to pay the tip.

- a. What is the total cost, including gratuity, if Kendall wants to give the waitress a 25% tip?

gratuity calculation: $\$38 \times 0.25 = \9.50

total cost: $\$38 + \$9.50 = \$47.50$

If Kendall gives a 25% tip, the total cost of the meal will be \$47.50.

- b. What is the total cost, including gratuity, if Kendall wants to give the waitress a 20% tip?

gratuity calculation: $\$38 \times 0.2 = \7.60

total cost: $\$38 + \$7.60 = \$45.60$

If Kendall gives a 20% tip, the total cost of the meal will be \$45.60.

- c. What is the total cost, including gratuity, if Kendall wants to give the waitress an 18% tip?

gratuity calculation: $\$38 \times 0.18 = \6.84

total cost: $\$38 + \$6.84 = \$44.84$

If Kendall gives an 18% tip, the total cost of the meal will be \$44.84.

