

We will solve problems involving a percent of a quantity¹.

CFU

What are we going to do?

What does *quantity* mean?

Quantity means _____.

Activate Prior Knowledge

If ratios are equivalent, then you can find a missing value.

If 6 pounds of beans cost \$15, how much will 2 pounds of beans cost?
How much will 8 pounds of beans cost?

1.

pounds	6	2	8
dollars	15		

If 12 cups of flour are needed to bake 9 pies, how many cups are needed to bake 3 pies? How many cups of flour are needed to bake 12 pies?

2.

cups	12		
pies	9	3	12

Make Connection

Students, you already know how to use equivalent ratios to find an unknown value. Now, we will solve problems involving percent of a quantity.

Vocabulary

¹ amount

A **percent** (%) is part of 100.

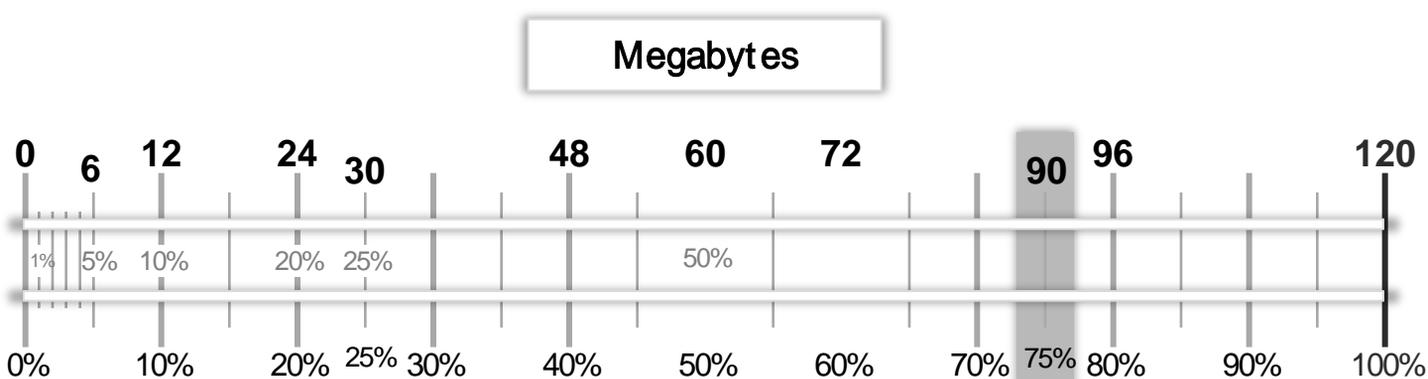
A **percent of a quantity** is part of a **total**.

- *Equivalent ratios on a double number line can be used to show the percent relationship².*

Percent of a Quantity

Johanna is downloading a **120 MB** file.

If she has downloaded **90 MB**, the download is **75%** complete.



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Complete the statement below. Explain your answer.

If Joanna has downloaded **60 MB**, the download is ____ complete.

Complete the statement below. Explain your answer.

If Joanna has downloaded ____, the download is **80%** complete.

Vocabulary

² the way things are connected

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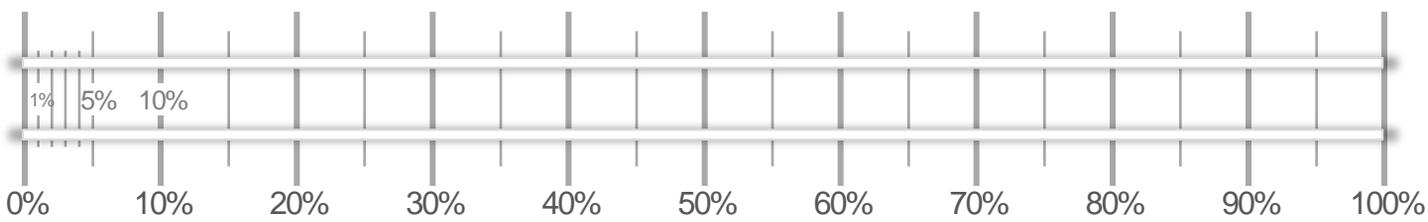
Solve problems involving a percent of a quantity using a double number line.

- 1 On the double number line, record₃ the given information and the percent to find.
- 2 Determine which **simple percent** to calculate; **5, 10, 20, 25, or 50%**.
 - a Calculate this percent of the quantity.
- 3 Solve for the unknown by using the simple percent and quantity.
- 4 Interpret₄ the solution.

220 people answered a food survey.

1. **40%** of the people surveyed reported they had food allergies.
How many people had food allergies?

2. **75%** of the people reported that they eat a full, healthy breakfast.
How many people eat a full, healthy breakfast?



1.

People			
Percent			

2.

People			
Percent			

CFU

- 2 How did I/you determine which simple percent to use?
- 3 How did I/you use the double number line to solve the percent problem?

Vocabulary

- 3 make a note
- 4 explain

A **percent** (%) is part of 100.

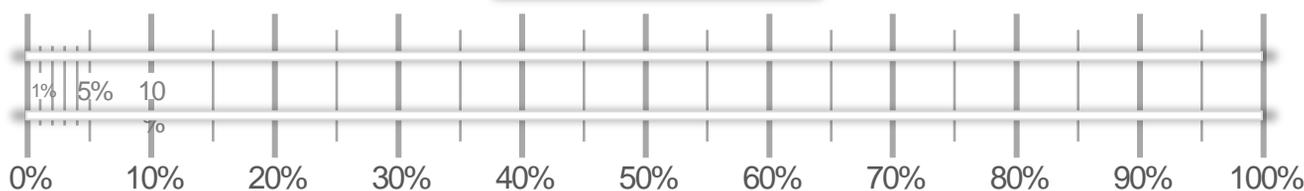
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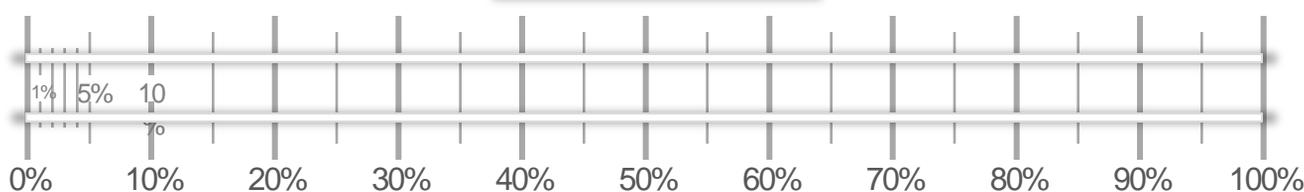
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3. On his MP3 player, Sal had 123 songs that were rock. That was 75% of all his songs. How many total songs did he have on his MP3 player?



Songs			
Percent			

4. Andrea has 102 pigs at her Mom's farm. That is 60% of all her pigs. Find the total number of pigs Andrea owns.



Pigs			
Percent			

CFU

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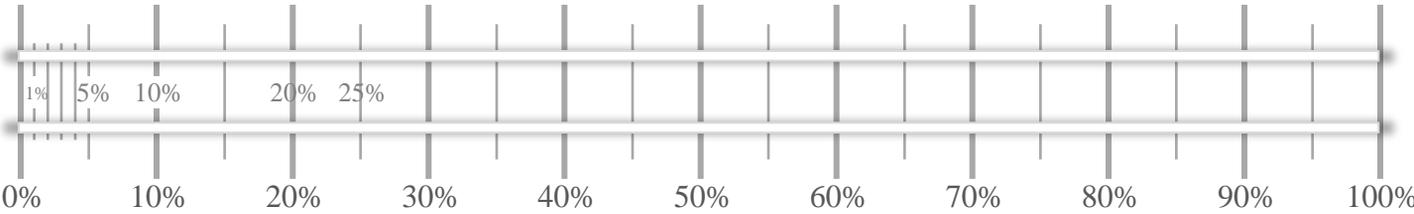
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Skill Closure

Solve problems involving a percent of a quantity using a double number line.

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- 4 Interpret the solution.

1. 75% of 80 patients in one hospital were in intensive care. How many patients were in intensive care?



Access Common Core

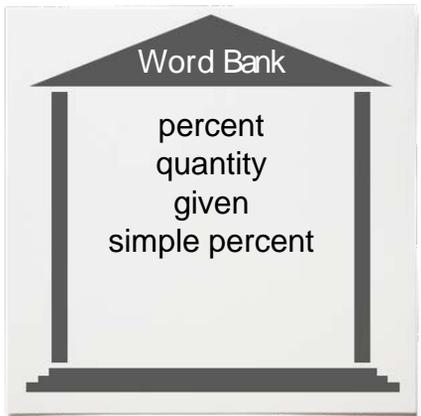
Explain how you determined which simple percent to use and how you used it to solve the problem.

Summary Closure

What did you learn today about solving problems involving a percent of a quantity?

(Pair-Share)

Use words from the word bank.



A **percent** (%) is part of 100.

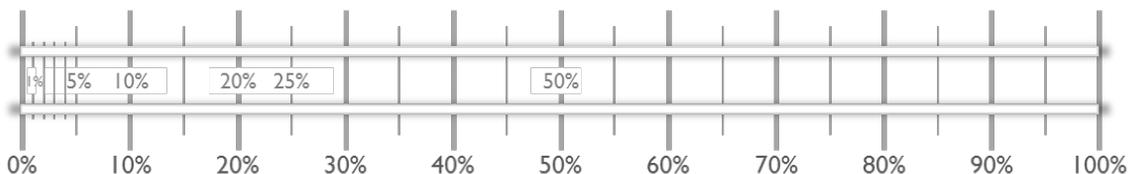
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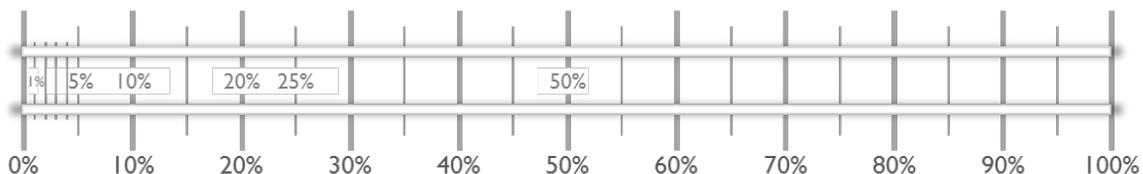
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1. 2500 people came to the football game. 60% used student passes. How many people got in using a student pass?



People			
Percent			

2. Five schools were in the band competition. Forty-five band members were from our school, which was 25% of the total band members. How many total band members were in the competition?



Band Members			
Percent			

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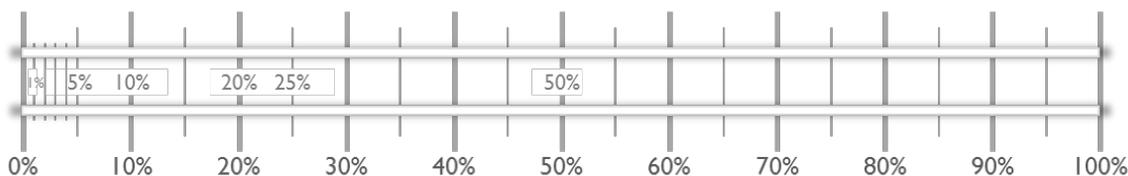
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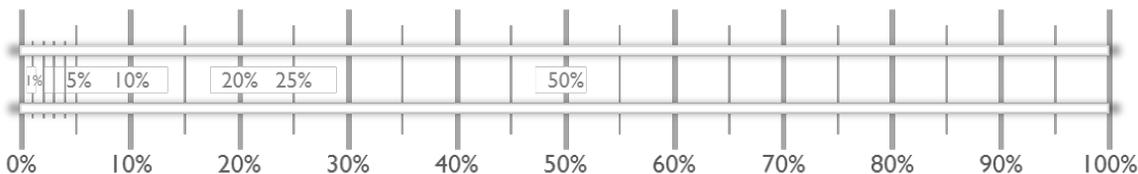
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3. 160 students were asked to choose their favorite snow-cone flavor. Twenty percent voted for strawberry. How many students preferred strawberry?



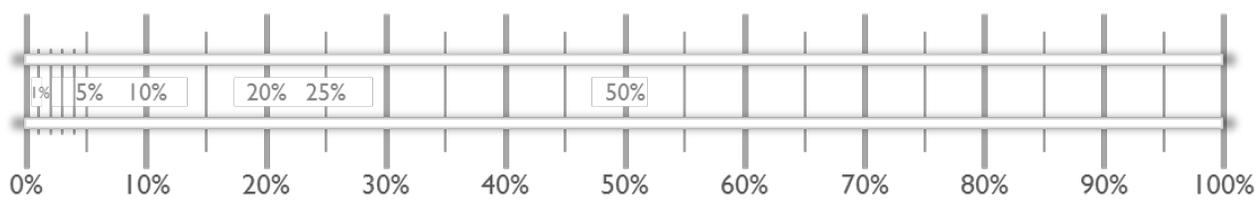
Students			
Percent			

4. Farmer John has 120 cows. Seventy-five percent of his cows are underweight. Find the quantity of cows that are underweight.



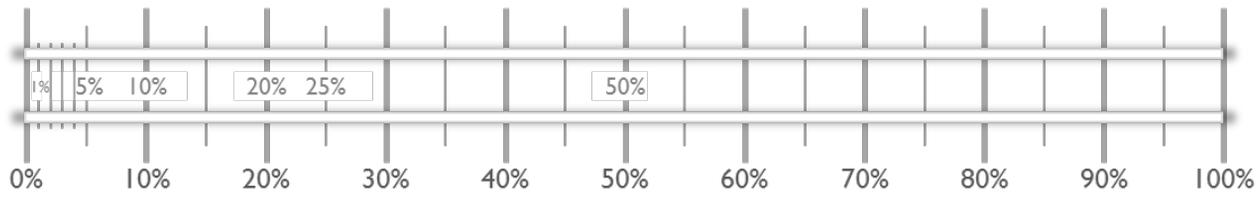
Cows			
Percent			

1. A clothing store offers a 25% discount on all items in the store. The original price of a sweater is \$40; how much is the discount amount?



Price			
Percent			

2. The basketball player set a record by scoring 55 points in one game. 40% of his points were one-point free throws. How many points were free throws?



Points			
Percent			

Access Common Core

260 coffee mugs were sold last weekend.

For every multiple of 5%, find the number of coffee mugs. Record the amounts on the double number line.

