



G5-G6
Basic

G7-G8
Advanced

Helping With Math

GRADES

Arithmetic Skill:
Percents and Discounts

Suitable for students
aged 9-13



This pack is suitable for learners aged 9-13 years old or fifth to eighth graders. The content covers fact files and relevant basic and advanced activities of percent and discount topics that aim to develop and strengthen the learners' arithmetic skills.

Let us celebrate Thanksgiving!



Thanksgiving Day is an annual national holiday in the United States and Canada. This day celebrates the harvest and other blessings of the past year. Americans generally believe that their Thanksgiving is modeled on a 1621 harvest feast shared by the English colonists (Pilgrims) of Plymouth and the Wampanoag people.

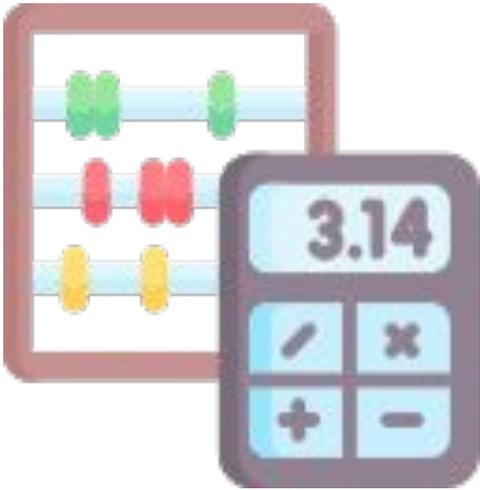
Arithmetic/Calculation Skill



We use arithmetic daily. We add, subtract, multiply, or divide when we count our bills and coins, calculate the distance of two places from one another, figure out how much pounds of meat to buy, etc.



CONCEPTS



- **Arithmetic skill** is concerned with numerical calculations, such as addition, subtraction, multiplication, and division.
- It is one of the basic skills in mathematics that children must learn.

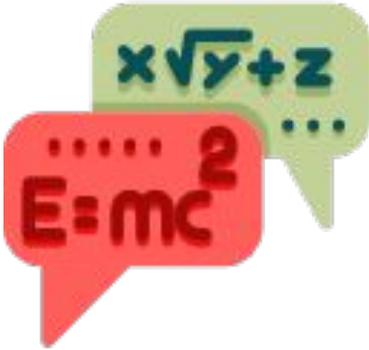
All About Arithmetic and Learners

- ★ Kindergarten start to add by counting numbers using the fingers on one hand — 1, 2, 3, 4, 5 — and starting with 6 on the second hand.
- ★ 1st to 2nd graders begin to count to 100 by ones, twos, fives, and tens. They can also do basic addition and subtraction up to 20.
- ★ 3rd graders shift from using hands-on methods to using paper and pencil to work out math problems. They can now do addition and subtraction with regrouping (also known as borrowing). They can now start do multiplication and division, by relating it to fact families (collections of related math facts, like $2 \times 4 = 8$ and $4 \times 2 = 8$)



CONCEPTS

All About Arithmetic and Learners



- ★ 4th to 5th graders explore the two- and three-digit multiplication (like 360×21). They can now solve complete long division, with or without remainders.
- ★ Middle schoolers learn basic algebra with one unknown number (like $3 + x = 8$). They also show enthusiasm in working with fractions, percentages, and proportions
- ★ High schoolers apply numbers in real-life situations (like calculating a sale price or comparing student loans)

PERCENTAGE

→ The result obtained when a number is multiplied by a percent

RATE

- The ratio of amount to the base
- It is written as a percent.

BASE

- The whole in a problem
- The amount you are taking a percent of



CONCEPTS

How to solve for Percent, Rate, and Base?



Identify the given first. Then identify the formula you need to use.

What is 15% of 200?



R



B

- 15% is the rate because it has a percent symbol
- 200 is the base since it is followed by 'of'

What is 15% of 200?

Since we identified rate and base on the given, we are finding for the percentage. Thus, the formula to use is

$$P = R \times B$$

$$P = 15\% \times 200 = 0.15 \times 200$$

$$P = 30$$

84 is what percent of 212?



P



B

- 84 is the percentage because it is the result
- 212 is the base since it is followed by 'of'; it is part of the whole

84 is what percent of 212?

Since we identified percentage and base on the given, we are finding for the rate. Thus, the formula to use is $R = P/B$

$$R = 84 / 212$$

$$R = 39.62\%$$



SAMPLE/APPLICATION

8 is 10% of what number?



P



R

- 8 is the percentage because it is the result
- 10 % is the R because it has the percent symbol

8 is 10% of what number?

Since we identified percentage and rate on the given, we are finding for the base. Thus, the formula to use is $B = P/R$

$$B = 8 / 0.1$$

$$B = 80$$

Try these! Identify the given and missing elements.

1. 25% of 50 is what number?
2. What percent of 50 is 30?
3. 10 is 20% of what number?

Percentages are used widely and in many different areas. For example, discounts in shops, bank interest rates, rates of inflation and many statistics in the media are expressed as percentages. Percentages are important for understanding the financial aspects of everyday life.

BUY



DISCOUNT

$$\text{Discount} = \text{Listed Price} - \text{Selling Price}$$



$$\text{Discount} = \text{Listed Price} \times \text{Discount Rate}$$

Discount means reducing the price or value of an object or item or service.

1. The **discount rate** is commonly given as a percent.
2. To find the **discount**, subtract the selling price from the listed price or multiply the rate by the original price.
3. To find the **selling price**, subtract the discount from the original price.



Example:

In a supermarket, a \$13 case of soda is labeled, "Get a 20% discount." What is the discount of the item? What is the selling price of the case of soda?

$$\text{Discount} = \text{Listed Price} \times \text{Discount Rate}$$

$$\begin{aligned}\text{Discount} &= \$13 \times 20\% \text{ or } \$13 \times 0.2 \\ &= \$13 \times 0.2 = \mathbf{\$2.6}\end{aligned}$$

$$\text{Selling Price} = \$13 - \$2.6$$

$$\text{Selling Price} = \mathbf{\$10.4}$$



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THANKSGIVING CHALLENGE

G5-G6
Basic

Try this Thanksgiving challenge and win a roasted turkey to celebrate the holiday! Make sure to answer these items correctly.

1. 85 is 40% of what number?

Percent:

Rate:

Base:

2. 1, 248 is what percent of 10, 555?

Percent:

Rate:

Base:



3. What is 25% of 50?

Percent:

Rate:

Base:

4. Calculate 80% of 794.

Percent:

Rate:

Base:



THE WAMPANOAG PEOPLE

G5-G6
Basic

Make the representative of the Wampanoag people be proud of your arithmetic skill in percent! Answer these items accurately.

1.) 10% of 100

2.) 50% of 30

3.) 5% of 30

4.) 20% of 80

5.) 50% of 90

6.) 6% of 30

7.) 45% of 120

8.) 30% of 140

9.) 20% of 200

10.) 10% of 150



Happy Thanksgiving everyone!



HOLIDAY VOUCHER

G5-G6
Basic

Claim the offers of these holiday vouchers in the celebration of Thanksgiving. Help Alex to get one.

1.) 42 is 120% of what number?



2.) What is 75% of 80?



3.) 12% of what number is 42

4.) What percent of 600 is 300?

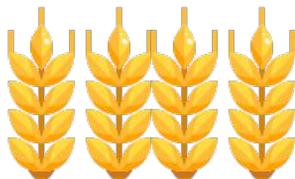


ABUNDANT HARVEST

G5-G6
Basic

Celebrate the abundant harvest of blessing this Thanksgiving! As a proof of gratitude, solve the following.

- 1.) One hundred twenty is what percent of 200?
- 2.) Eighty-four is what percent of 200?
- 3.) What percent of 480 is 120?
- 4.) What percent of 600 is 50?
- 5.) Thirty-five is what percent of 175?



PEOPLE AND THANKSGIVING

G5-G6
Basic

People are busy preparing for the celebration of Thanksgiving! These are some random events that people do for the holiday. Help them find out the answers!

1. The 45 pupils of St. Margaret's class are supposed to create a Thanksgiving greeting card. Unfortunately, nine of them were absent on that day. What percent of the class were absent?



2. Forty percent of the 25 customers of the mall who came this morning of Thanksgiving day are adults and the rest are teens. How many customers are adults? How many are teens?



3. On their way to another state to celebrate Thanksgiving, Derek and his family sang songs for 25 minutes, which is 10% of the time they had been travelling. How long had they been on the road?



THANKSGIVING RUSH

G7-G8
Advanced

These people are enjoying the discounts brought by the Thanksgiving day! Solve for the original price/listed price of the following items.

1. Alex pays \$75 to buy a watch for his brother as a Thanksgiving gift, He paid for it after a discount of 20%, find the original price of the watch.
2. The price of a Thanksgiving recipe book after a discount of 25% is \$36. What is the original price of the recipe book?
3. In line with the celebration of Thanksgiving, the HWM boutique offers a generous promo. If you buy 3 shirts, you will get a 10% discount. If your total bill for 6 shirts is \$270, what is the original price of a T-shirt?
4. Because of the Thanksgiving promo, the price of a desktop computer after discount was \$1,800. If the discount rate was 20%, what was the original price?
5. Thanksgiving promo alert!
Find the original price of a motorbike if you got a 10% discount and paid a final price of \$2160 for it.



DISCOUNT FOR THE PILGRIMS

G7-G8
Advanced

The pilgrims would like to buy some goods. Help them compute for the discounted price of the following situations.

1. In a audio-video store, a DVD that sells for \$12 is marked, "10% off." What is the sale price of the DVD?



2. If a vinyl record player costs \$239 and is on sale with 9.5% off, how much would the discount be? the selling price?



3. A pizzeria has a Thanksgiving voucher that reads, "Get 5% off at \$8.00 cheesy pepperoni pizza." What is the discount? What is the sale price of the pizza?



4. In a candy store, the Pilgrims are entitled to a 50% discount. If a jar of candy is \$5.00, what is the discount? What is the sale price of the jar of candy?



BLESSINGS APPRECIATION DAY

G7-G8
Advanced

Appreciate all the blessings that we receive everyday. Also, calculate what is being asked on the given problems.

1. Calculate for the discount rate of an item if the discount is \$25 and the selling price is \$300.

2. Solve for the discount rate of an item if the discount is \$100 and the selling price is \$1000.

3. How much is the amount to be deducted if a certain service has a promo of 12.5% off and the original cost is \$945?

4. The marked price of a certain good is \$ 1350. The seller applied 18% discount on it. Compute for its selling price?

5. The price of a sweater was slashed from \$ 1060 to \$ 916 by a shopkeeper in the winter season. Find the rate of discount given by him.



THANKSGIVING DISCOUNTS GIVEAWAYS

G7-G8
Advanced

These are some discount info from different sellers this Thanksgiving day! Can you calculate for the listed price given the discount rate and selling price?

1. Discount rate: 20%
Selling Price: \$1
Listed Price: ?



2. Discount rate: 30%
Selling Price: \$14,000
Listed Price: ?

3. Discount rate: 10%
Selling Price: \$450
Listed Price: ?



4. Discount rate: 10%
Selling Price: \$1035
Listed Price: ?

5. Discount rate: 15%
Selling Price: \$340
Listed Price: ?



BE THANKFUL

G7-G8
Advanced

Remember, even though it's not Thanksgiving Day, always keep in mind to be thankful of all your blessings in life, especially those you have learned from this lesson. Answer the given below.

Essay Questions:

1. What are the things that you have learned from this lesson?
2. Why is it that learning this lesson important?
3. How did this lesson help you improve your arithmetic skill?



ANSWER GUIDE

Activity 1

1. 212.5 2. 11.82% 3. 12.5 4. 635.2

Activity 2

1. 10 2. 15 3. 1.5 4. 16 5. 45
6. 1.8 7. 54 8. 42 9. 40 10. 15

Activity 3

1. 350 2. 60 3. 350 4. 50%

Activity 4

1. 60% 2. 42% 3. 25% 4. 8.33% 5. 20%

Activity 5

1. 20% 2. 10 are adults, 15 are teens 3. 250 mins

Activity 6

1. \$93.75 2. \$48 3. \$337.5 4. \$2250 5. \$2400

Activity 7

1. \$10.8 2. \$216.295 3. \$0.4 , \$7.6 4. \$2.5, \$2.5



ANSWER GUIDE

Activity 8

1. 8.33%
2. 10%
3. \$118.125
4. \$1107
5. 13.58%

Activity 9

1. \$1.25
2. \$20000
3. \$500
4. \$1150
5. \$400

Activity 10

Answers may vary,



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