

3rd Grade Math: Kilograms and Grams

What Are Kilograms and Grams?

- **Kilograms** and **grams** are units of mass (or weight) used in the metric system.
 - **Grams (g):** Grams are used to measure smaller amounts, like the weight of a pencil or a cookie.
 - **Kilograms (kg):** Kilograms are used to measure heavier things, like a bag of rice or a person's weight.
- **1 kilogram = 1,000 grams.**

How to Measure Weight Using Kilograms and Grams

1. **When to Use Grams:**
2. Use **grams** to measure small, light objects, such as a pen, an apple, or a bag of candy.
3. **When to Use Kilograms:**

Use **kilograms** to measure heavier objects, like a watermelon, a backpack full of books, or a large sack of potatoes.

Converting Between Kilograms and Grams

- To convert kilograms to grams, multiply the number of kilograms by 1,000.

$$1 \text{ kilogram} = 1,000 \text{ grams}$$

- To convert grams to kilograms, divide the number of grams by 1,000.

$$1,000 \text{ grams} = 1 \text{ kilogram}$$

Example 1: Converting Kilograms to Grams

Problem:

How many grams are in 4 kilograms?

Solution:

Multiply the number of kilograms by 1,000:

$$4 \text{ kilograms} \times 1,000 = 4,000 \text{ grams}$$

Answer:

4 kilograms = 4,000 grams.

Example 2: Converting Grams to Kilograms

Problem:

How many kilograms are in 3,500 grams?

Solution:

Divide the number of grams by 1,000:

$$3,500 \text{ grams} \div 1,000 = 3.5 \text{ kilograms}$$

Answer:

3,500 grams = 3.5 kilograms.

Example 3: Subtracting Weight

Problem:

A watermelon weighs 5 kilograms. After cutting out 500 grams for a snack, how much does the remaining watermelon weigh in kilograms?

Steps:

1. Convert 5 kilograms to grams:

$$5 \text{ kilograms} \times 1,000 = 5,000 \text{ grams}$$

2. Subtract the weight of the snack:

$$5,000 \text{ grams} - 500 \text{ grams} = 4,500 \text{ grams}$$

3. Convert back to kilograms:

$$4,500 \text{ grams} \div 1,000 = 4.5 \text{ kilograms}$$

Answer:

The remaining watermelon weighs 4.5 kilograms.

Example 4: Adding Kilograms and Grams

Problem:

A package weighs 1 kilogram 750 grams, and another package weighs 2 kilograms 300 grams. What is the total weight?

Steps:

1. Convert both weights to grams:

$$1 \text{ kilogram } 750 \text{ grams} = 1,750 \text{ grams}$$

$$2 \text{ kilograms } 300 \text{ grams} = 2,300 \text{ grams}$$

2. Add the weights together:

$$1,750 \text{ grams} + 2,300 \text{ grams} = 4,050 \text{ grams}$$

3. Convert back to kilograms:

$$4,050 \text{ grams} \div 1,000 = 4.05 \text{ kilograms}$$

Answer:

The total weight is 4.05 kilograms.

Conclusion:

- **Kilograms** and **grams** are units used to measure weight, with kilograms being the larger unit.

- You can easily convert between kilograms and grams by multiplying or dividing by 1,000.

By practicing, you'll be able to measure and compare weights of objects using kilograms and grams!