

Lesson 11-6
Convert Metric Units of Mass

Read Read the story. Write a number to show how many kilograms the object weighs.

Look for Reasoning How do you know the object weighs 9.5 kilograms?

$9.5 \text{ g} \times 1,000 \text{ g} = 9,500 \text{ g}$

$9,500 \text{ g} = 1,000 \text{ g} + 8,500 \text{ g}$

$1,000 \text{ g} = 1 \text{ kg}$

$8,500 \text{ g} = 8 \text{ kg} + 500 \text{ g}$

$8 \text{ kg} + 500 \text{ g} = 8.5 \text{ kg}$

$1 \text{ kg} + 8.5 \text{ kg} = 9.5 \text{ kg}$

How Do You Convert Metric Units of Mass?

Read Read the story. Write a number to show how many kilograms the object weighs.

Look for Reasoning How do you know the object weighs 9.5 kilograms?

Write Write a number to show how many kilograms the object weighs.

1 A student has a mass of about 45 kg.

2 A student has a mass of about 1.5 kg.

3 A student has a mass of about 1.5 kg.

4 A student has a mass of about 1.5 kg.

5 A student has a mass of about 1.5 kg.

6 A student has a mass of about 1.5 kg.

Write Write a number to show how many kilograms the object weighs.

$100 \text{ kg} \times 1,000 \text{ g} = 100,000 \text{ g}$

$100,000 \text{ g} \times 1,000 \text{ mg} = 100,000,000 \text{ mg}$

Guided Practice

Read Read the story. Write a number to show how many kilograms the object weighs.

Look for Reasoning How do you know the object weighs 9.5 kilograms?

Write Write a number to show how many kilograms the object weighs.

1 A student has a mass of about 45 kg.

2 A student has a mass of about 1.5 kg.

3 A student has a mass of about 1.5 kg.

4 A student has a mass of about 1.5 kg.

5 A student has a mass of about 1.5 kg.

6 A student has a mass of about 1.5 kg.

Math Practices and Problem Solving

1 Read the story. Write a number to show how many kilograms the object weighs.

2 Read the story. Write a number to show how many kilograms the object weighs.

3 Read the story. Write a number to show how many kilograms the object weighs.

4 Read the story. Write a number to show how many kilograms the object weighs.

5 Read the story. Write a number to show how many kilograms the object weighs.

6 Read the story. Write a number to show how many kilograms the object weighs.

$5,000 \text{ mg} = 1,000 \text{ g} = 5 \text{ g} = 500 \text{ mg}$

$500 \text{ g} = 1,000 \text{ g} = 1 \text{ kg} = 1,000 \text{ g}$

$1 \text{ kg} < 500 \text{ g}$

DO YOU KNOW HOW?

In 3 and 4, convert each unit of mass.

3. 9.25 g = _____ kg

4. 190 g = _____ kg

In 5 and 6, compare. Write $>$, $<$, or $=$ for each \bigcirc .

5. 7,000 mg \bigcirc 7,000 g

6. 10^2 kg \bigcirc 10^4 g

24. Higher Order Think
6 onions that have a mass of 900 grams and 8 apples that have a mass of 1 kilogram. Are the onions and apples the same size, and all apples the same size. Which has the greater mass, an onion or an apple? E

ing A cook has
total mass of
oles that have a total
All onions are the
ples are the same
reater mass, an
xplain.

$$\begin{array}{r} 125 \\ 000 \\ \hline 20 \\ 6 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

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27. Write the following masses on the lines from least to greatest.

500 g 50 kg 5,000 mg

$$5,000 \text{ mg} < 500 \text{ g} < 50 \text{ kg}$$

28. If you convert grams to milligrams, what operation would you use?

multiplication

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$$5000 \text{ mg}$$

$$500 \overset{\text{L}}{\text{g}} = \overset{\text{S}}{\text{mg}}$$

$$500 \times 1000 = 500,000 \text{ mg}$$

$$50 \overset{\text{L}}{\text{kg}} = \overset{\text{S}}{\text{mg}}$$

$$50 \times 1,000,000 = 50,000,000 \text{ mg}$$