

Additional Practice 12-6

Convert Metric Units of Mass

Another Look!

Remember:

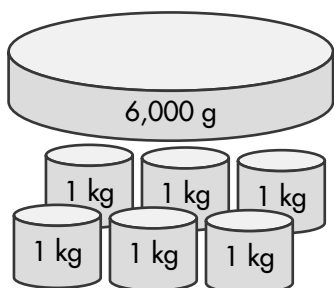
10^3 milligrams equals 1 gram and
 10^3 grams equals 1 kilogram.



How to convert from one metric unit of mass to another:

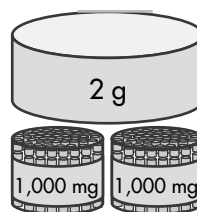
Smaller metric unit to a larger unit:

6,000 grams = ____ kilograms

You know 10^3 g = 1 kg, so divide.Find $6,000 \div 1,000$; 6,000 g = 6 kg.

Larger metric unit to a smaller unit:

2 grams = ____ milligrams

You know 1 g = 10^3 mg, so multiply.Find $2 \times 1,000$; 2 g = 2,000 mg.

In 1–6, convert each unit of mass.

1. 72 g = **72,000** mg

2. 8,000 g = **8** kg

3. 2,000 mg = **0.002** kg

4. 490 g = **0.49** kg

5. 0.648 g = **648** mg

6. 0.061 kg = **61** g

In 7–12, compare. Write >, <, or = for each ☐.

7. 4,000 mg ☒ 5 g

8. 64 kg ☒ 64,000 g

9. 3 kg ☒ 40,000 mg

10. 6,000 g ☒ 6 kg

11. 93 g ☒ 92,000 mg

12. 90 kg ☒ 90,000 mg

In 13 and 14, complete each table to show equivalent measures.

13.

grams	2	20	200
milligrams	2,000	20,000	200,000

14.

grams	100	1,000	10,000
kilograms	0.1	1	10



15. A recipe that serves two people calls for 1,600 milligrams of baking soda. You want to make enough for 10 people. How many grams of baking soda will you need? Write an equation to show your work.

8 g; $1,600 \times 5 = 8,000 \text{ mg} = 8 \text{ g}$

16. **Reasoning** What steps would you take to compare 2 kilograms and 3,200 grams?

Sample answer: First convert 2 kg to 2,000 g. Then compare 2,000 g to 3,200 g.



17. Nutritionists recommend that people eat 25,000 milligrams of fiber each day. The table shows the amount of fiber Jodi has eaten today. How many more grams of fiber does she need to get the recommended daily amount of fiber?

12 g

DATA	Food	Amount of Fiber
	1 cup raspberries	8 grams
	1 cup oatmeal	4 grams
	2 cups orange juice	1 gram

18. Classify the triangle by its sides and its angles.

Isosceles, obtuse



19. **Higher Order Thinking** How is converting grams to milligrams similar to converting pounds to ounces? How is it different?

Sample answer: For both, you need to multiply to convert the larger unit to the smaller unit; You multiply the number of grams by 1,000 to get milligrams, but you multiply the number of pounds by 16 to get ounces.

Assessment Practice

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

30 g 2 kg 60,000 mg

2 kg > 60,000 mg > 30 g

21. If you convert grams to kilograms, what operation would you use?

- (A) Addition
- (B) Subtraction
- (C) Multiplication
- (D) Division**