

★ Guided Practice*

Do You Understand?

- A-Z Vocabulary** How does the relationship between meters and millimeters help you understand the relationship between grams and milligrams?
- Which has the greater mass: 1 kilogram or 137,000 milligrams? Explain how you made your comparison.

Do You Know How?

In 3 and 4, convert each unit of mass.

3. $9.25 \text{ g} = \underline{\hspace{2cm}} \text{ mg}$

4. $190 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

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

5. $7,000 \text{ mg} \bigcirc 7,000 \text{ g}$

6. $10^2 \text{ kg} \bigcirc 10^4 \text{ g}$

★ Independent Practice★

In 7–12, convert each unit of mass.

7. $17,000 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

8. $18 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

9. $4,200 \text{ mg} = \underline{\hspace{2cm}} \text{ g}$

10. $0.276 \text{ g} = \underline{\hspace{2cm}} \text{ mg}$

11. $4.08 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

12. $43 \text{ mg} = \underline{\hspace{2cm}} \text{ g}$

In 13–18, compare. Write $>$, $<$, or $=$ for each \bigcirc .

13. $2,000 \text{ g} \bigcirc 3 \text{ kg}$

14. $4 \text{ kg} \bigcirc 4,000 \text{ g}$

15. $10^4 \text{ mg} \bigcirc 13 \text{ g}$

16. $7 \text{ kg} \bigcirc 7,000 \text{ g}$

17. $9,000 \text{ g} \bigcirc 8 \text{ kg}$

18. $8,000 \text{ g} \bigcirc 5 \text{ kg}$

In 19 and 20, complete each table.

19.

grams		10	
milligrams	1,000		100,000

20.

grams	500		50,000
kilograms		5	

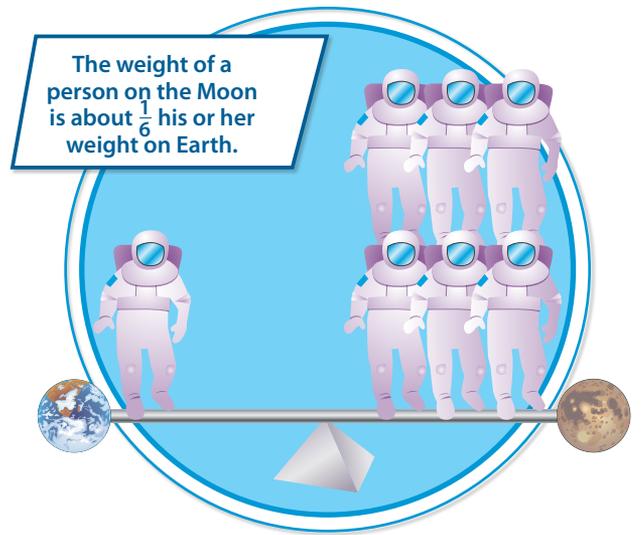
Problem Solving

21. **Make Sense and Persevere** Sheryl has a recipe for pasta with vegetables. The recipe calls for 130 grams of vegetables and twice as much pasta as vegetables. What is the total mass in grams of the recipe?
22. Terri is beginning a science experiment in the lab. The instructions call for 227 milligrams of potassium. Calculate the difference between this amount and 1 gram.
23. **Number Sense** One of the world's heaviest hailstones weighed 2.2 pounds. Which is more appropriate to express its mass, 1 kilogram or 1 gram?
24. **Higher Order Thinking** A cook has 6 onions that have a total mass of 900 grams and 8 apples that have a total mass of 1 kilogram. All onions are the same size, and all apples are the same size. Which has the greater mass, an onion or an apple? Explain.

In 25 and 26, use the given information and the picture.

Math and Science If a man weighs 198 pounds on Earth, his mass on Earth is 90 kilograms.

25. What is this man's weight on the Moon?
26. What is his mass on the Moon? Explain.



Assessment

27. Write the following masses on the lines from least to greatest.
500 g 50 kg 5,000 mg
28. If you convert grams to milligrams, what operation would you use?

_____ < _____ < _____