Another Look!

Kim bought granola bars for the soccer team. Each granola bar cost $0.89. She paid $38.13, including $0.75 for sales tax. How many granola bars did she buy?

Tell how you can use reasoning to solve the problem.

- I can write an equation to show relationships.

- I can give the answer using the correct unit.

Write an equation to find the total cost of the granola bars before tax.

$38.13 - $0.75 = $37.38

Divide to find the number of granola bars.

$37.38 ÷ $0.89

$0.89 × ? = $37.38
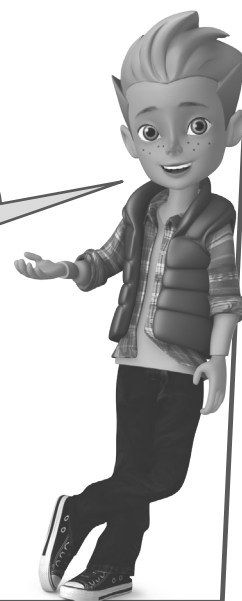
89 cents × ? = 3,738 cents

? = 42

So, Kim bought 42 granola bars for the soccer team.

> You can use reasoning to determine how the quantities are related.

Reasoning

Over the summer, Mr. Patel refilled a bird feeder 24 times using 6 cups of seed each time. A bag of seed holds 32 cups. How many bags of seed did Mr. Patel use?

1. Describe one way to solve the problem.
   Sample answer: Multiply 24 by 6 to find the total number of cups needed. Then divide the product by 32 to find the number of bags Mr. Patel used.
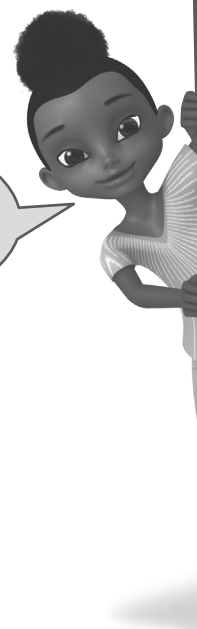
> You can use equations or diagrams when solving a problem using reasoning.

2. Write an equation or draw bar diagrams to represent the problem.
   Sample equation: $n = (24 \times 6) \div 32$; Check students' bar diagrams.

3. What is the solution to the problem? Explain.
   4.5 bags of seed; $(24 \times 6) \div 32 = 4.5$

Greeting Cards

Jana is making greeting cards that are 4 inches long and 3.5 inches wide to sell at a craft fair. She decorates each card by putting a strip of red ribbon along the border all the way around the card. The table shows the amount of ribbon she has on hand.

DATA	Ribbon	Length (inches)
	Gold	144
	Red	96
	Orange	152

4. **Make Sense and Persevere** Explain what each of the quantities means. Are all of the quantities given in the same units?

> **4 in. is the length of the card; 3.5 in. is the width of the card; 144 in. is the length of the gold ribbon; 96 in. is the length of the red ribbon; 152 in. is the length of the orange ribbon; Yes, all of the quantities are given in inches.**

5. **Model with Math** Draw a diagram of the card and show how it is decorated. Label the width and length of the card.
   Check students' diagrams.

6. **Reasoning** How could you determine the amount of red ribbon needed for one card?

> **Sample answer: I could find the perimeter of the card by adding twice the length to twice the width.**

Remember, you can use reasoning to find the amount of ribbon needed for each card.

7. **Be Precise** How many greeting cards can Jana decorate with the red ribbon? Show your work.

> **6 cards; Jana needs (2 × 4) + (2 × 3.5) = 15 inches of ribbon per card. Since 96 ÷ 15 = 6.4, Jana can decorate 6 cards.**

8. **Critique Reasoning** Jana decides to make some additional cards that are 7.5 inches long and 5 inches wide. She glues a strip of gold ribbon along each of the longer sides. She says that since 144 ÷ 7.5 = 19.2, she can decorate 19 cards with gold ribbon. Do you agree? Explain.

> **No; Each card needs 2 × 7.5 inches of ribbon, so Jana should have divided 144 by 15.**