

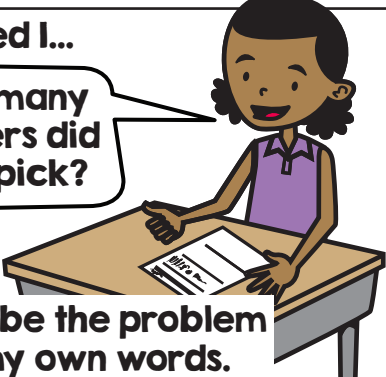
Make sense of problems and persevere in solving them. MP.1

I can choose strategies for solving a problem and checking my answers.

To get started I...

How many flowers did they pick?

Describe the problem in my own words.



Decide what information I need.



Select a strategy.

Flowers	Friends
Lisa	8
Imani	8
Carla	8
	↓
	24



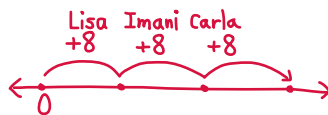
While I'm working I...

Follow my plan to solve the problem.



Try another strategy if I get stuck.

Lisa Imani Carla
+8 +8 +8

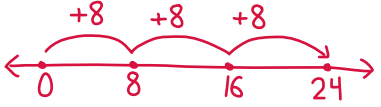


Keep working until I find an answer.

+8 +8 +8

0 8 16 24


$8 + 8 + 8 = 24$ Flowers



When I have an answer I...


Does $8 + 8 + 8$ equal 24?

Ask if it makes sense.



Check my work using another strategy.

3 × 8 = 24
8 × 3 = 24
24 ÷ 8 = 3
24 ÷ 3 = 8



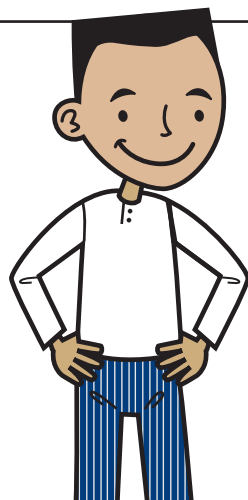
Check with a partner. If our answers differ, I figure out why.



Reason abstractly and quantitatively.

MP. 2

I can represent math problems in a variety of ways and think about what the problems mean.



4000 grams
+ 3 kilograms
X kilograms?

grams	kilograms
1000	1
2000	2
3000	3

I show my thinking with labeled sketches, charts, or diagrams.

John's cat weighs 5 kilograms.
How many grams is that?

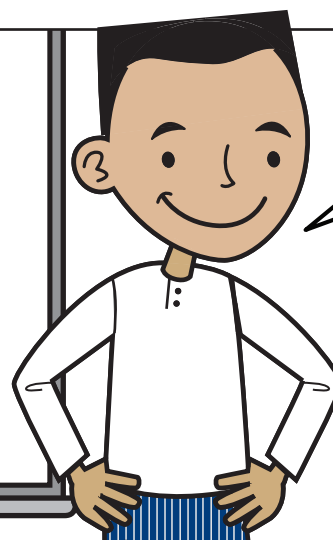
1 kg = 1000 grams

$$\begin{array}{r} 1000 \\ \times 5 \\ \hline 5000 \text{ grams} \end{array}$$



I show story problems with expressions and equations.

$$\begin{array}{r} 240 \text{ grams} \\ \times 10 \\ \hline 2400 \text{ grams} \end{array}$$



A box of cereal has 10 servings, each with 240 grams of cereal. How many total grams of cereal in the box?

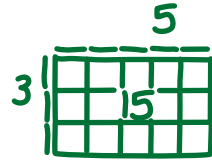
I come up with a story to describe an expression or equation.

Construct viable arguments and critique the reasoning of others. MP.3

I share ideas, explain my thinking, and analyze others' ideas.

I drew a 5-by-3 array and then added 5 plus 5 plus 5, which is 15.

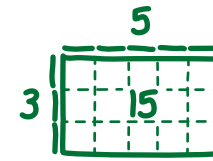
$$5 \times 3 =$$



$$5 + 5 + 5 = 15$$

$$5 \times 3 = 15$$

I explain how I got the answer.

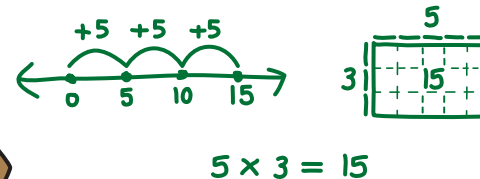


$$5 \times 3 = 15 \text{ sq. units}$$

I show connections between ideas, like how the area of a rectangle is related to multiplication.

What did you use to find your answer?

I ask others to explain how they got an answer or why they chose their strategy.



I compare my strategy to someone else's.

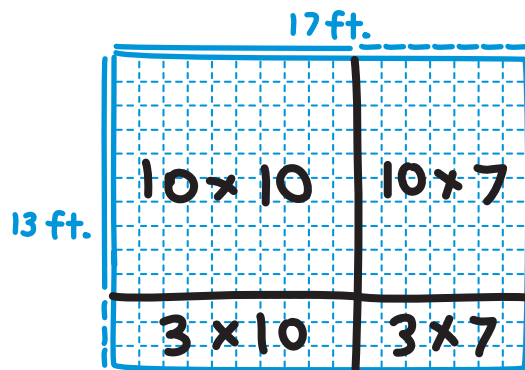
Model with mathematics.

MP. 4

I can see math in the world around me.

I can use math to answer questions and gain insight about situations and problems.

I can use the array I sketched to figure out the exact area. But I also can see right away that it's going to be a bit more than 200 square feet.



My Garden

I use diagrams and numbers to represent situations mathematically. I think carefully about what those diagrams and numbers can tell me about the situation.

1	2	4	8
$\frac{3}{4}$	$1\frac{1}{2}$	3	6

8 $\frac{3}{4}$ -cups will make
6 cups of water.

I need 6 cups to make the juice. How can I use this $\frac{3}{4}$ -cup to measure out 6 cups of water?

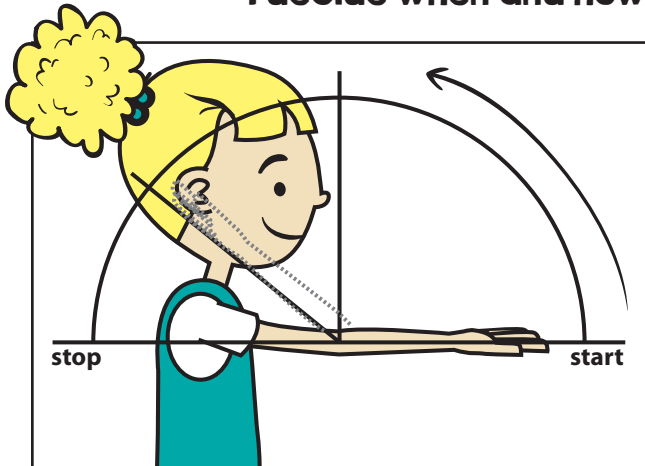


I represent situations with mathematics and use my representations to solve problems efficiently.

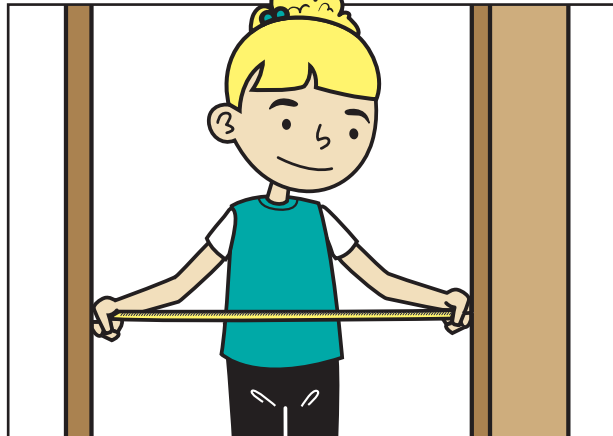
Use appropriate tools strategically.

MP. 5

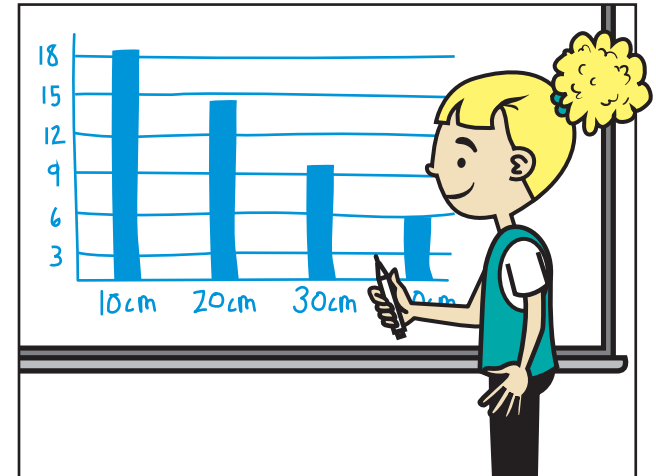
I decide when and how to use math tools, pictures, and models to help solve problems.



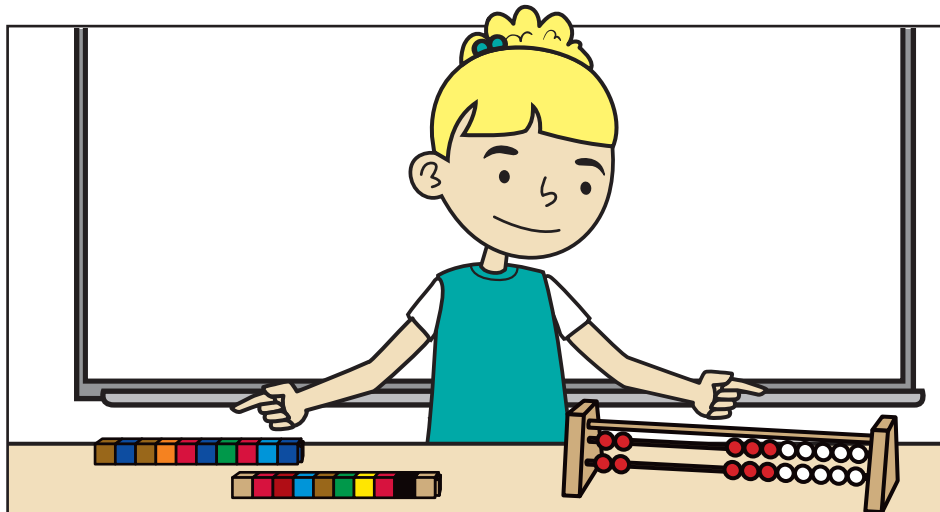
I know when I can estimate and when I need to find the exact answer.



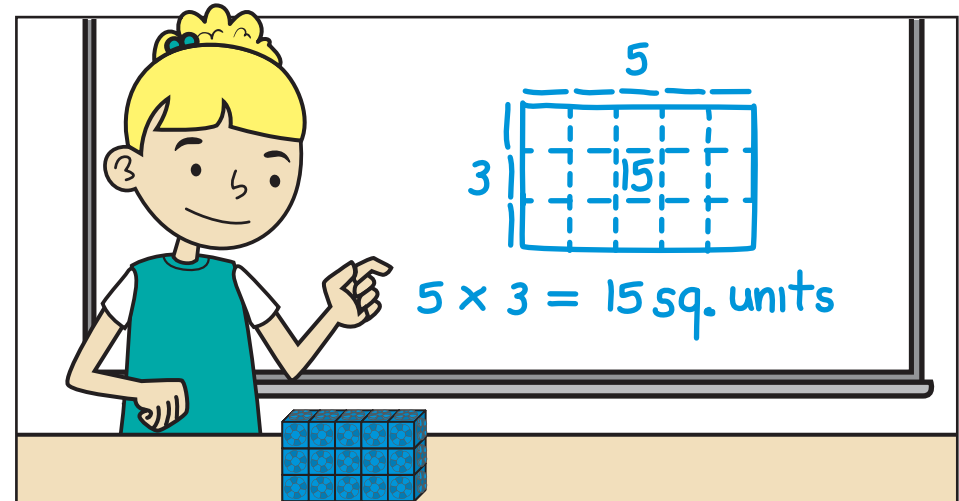
I use tools like rulers and meter sticks to compare units of measure.



I represent and explain data with graphs.



I use one model to solve a problem and a different model to check my answer.

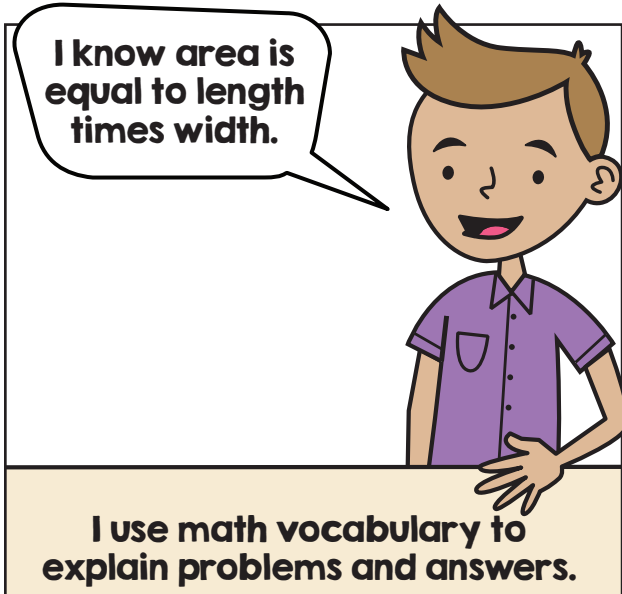


I determine whether the tool I selected makes sense.

Attend to precision.

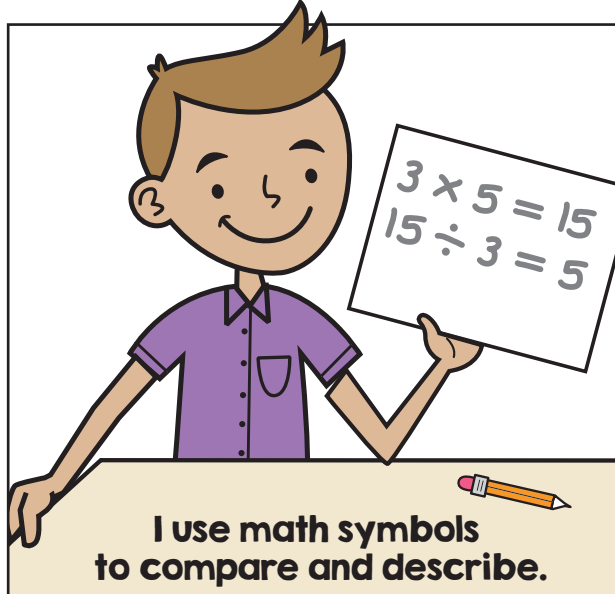
MP. 6

I can be mathematically precise and describe my ideas clearly.

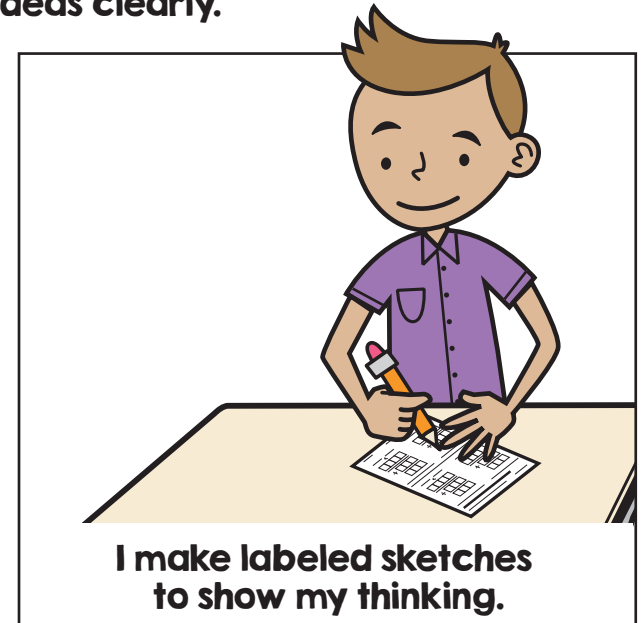


I know area is equal to length times width.

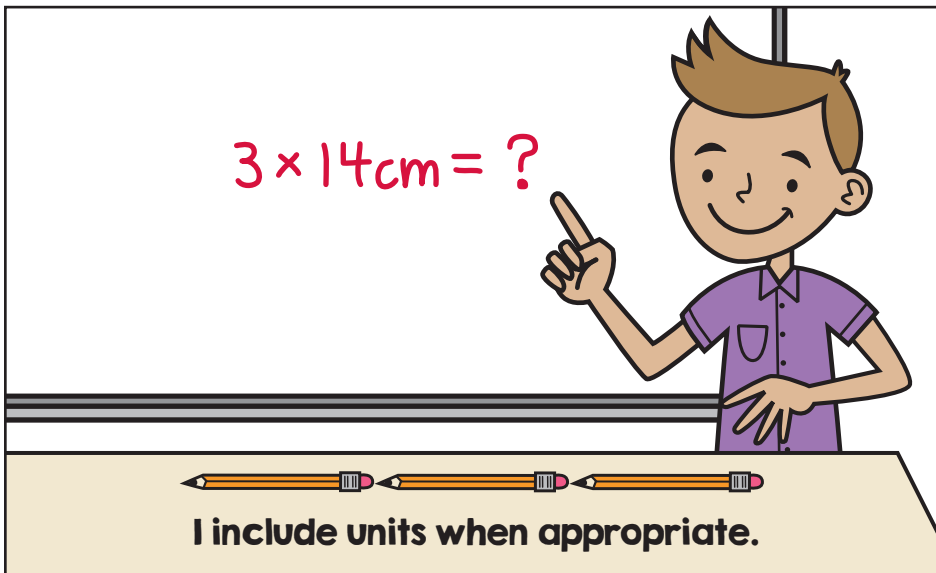
I use math vocabulary to explain problems and answers.


$$\begin{array}{l} 3 \times 5 = 15 \\ 15 \div 3 = 5 \end{array}$$

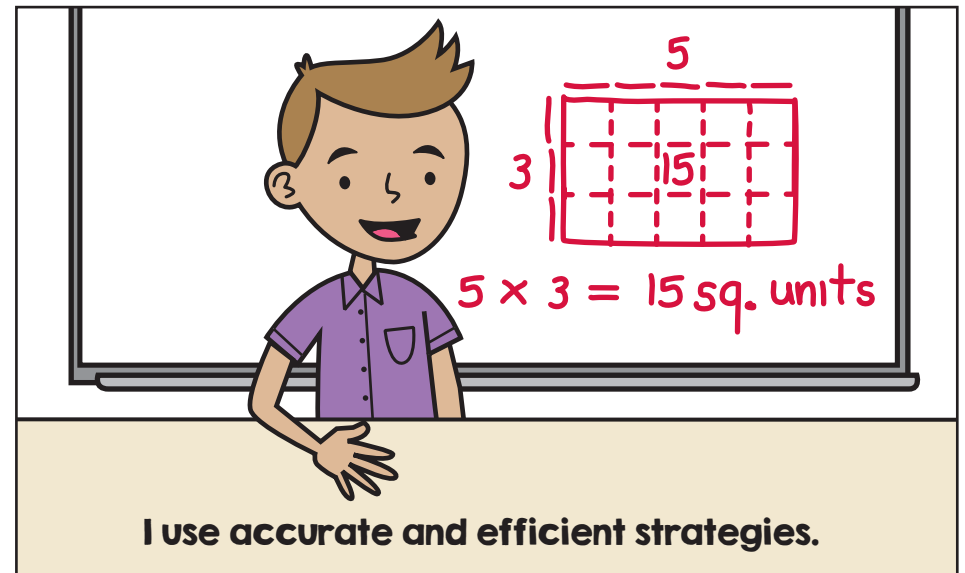
I use math symbols to compare and describe.



I make labeled sketches to show my thinking.


$$3 \times 14\text{cm} = ?$$

I include units when appropriate.

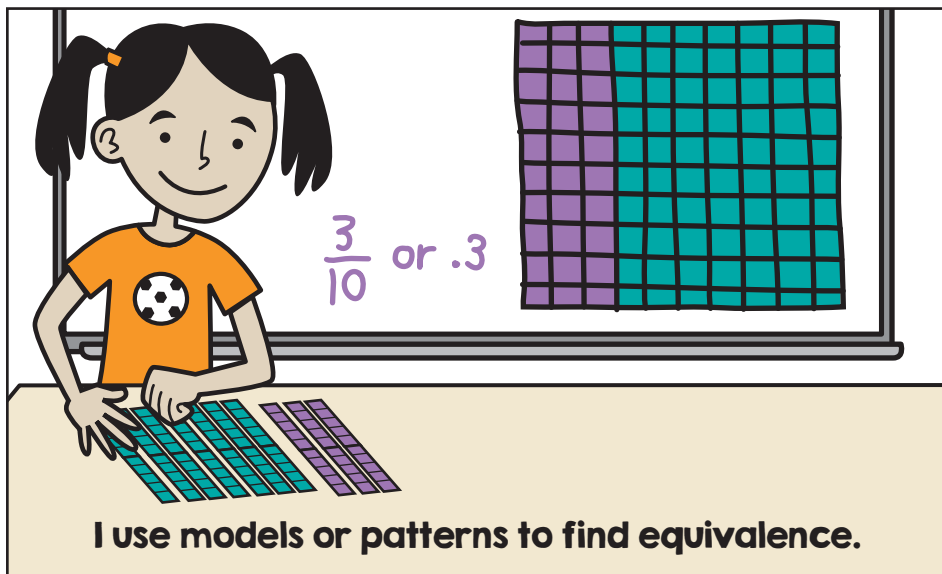

$$5 \times 3 = 15 \text{ sq. units}$$

I use accurate and efficient strategies.

Look for and make use of structure.

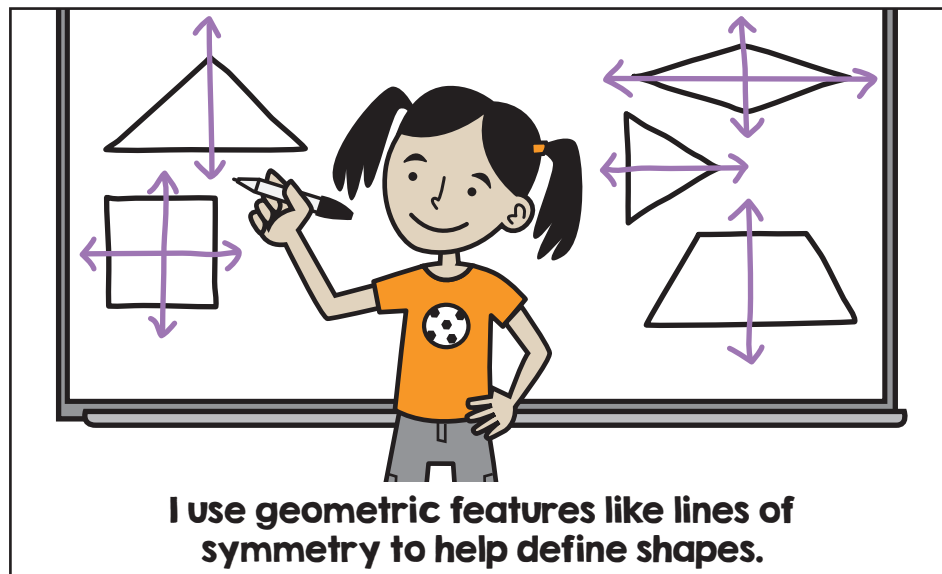
MP. 7

I use the structure of a number, shape, or model to solve problems and show my thinking.



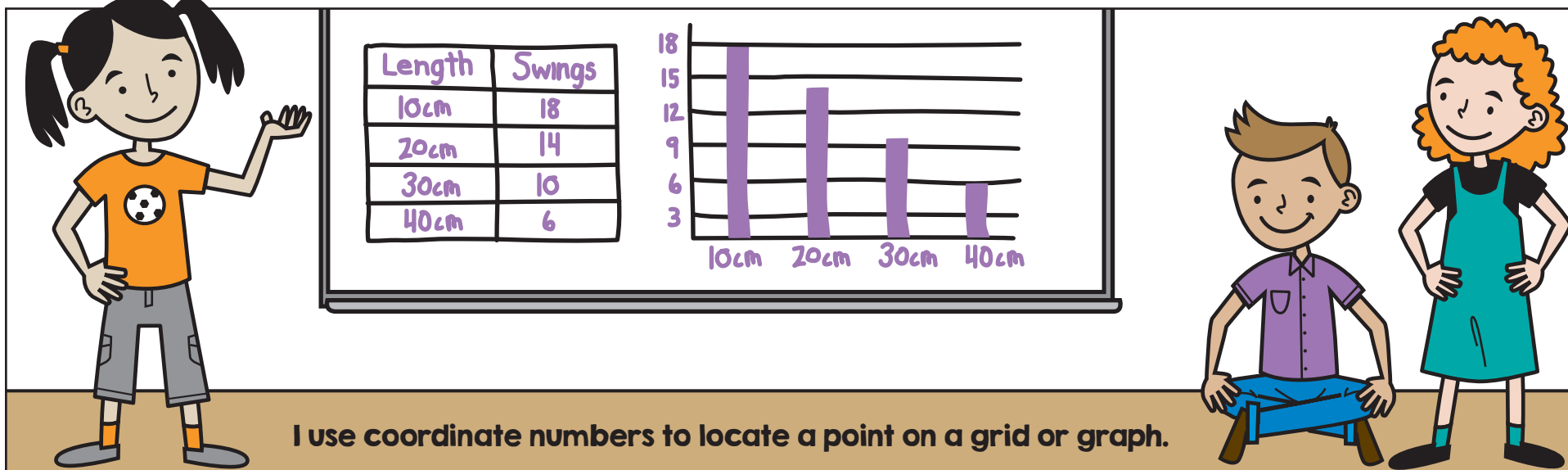
A girl with pigtails, wearing an orange t-shirt with a soccer ball design, stands at a desk. On the desk are several rows of colored blocks (green and purple). Behind her is a large grid on the wall, with the first 3 columns of the first 10 rows shaded purple. To the left of the grid, the text $\frac{3}{10}$ or .3 is written in purple.

I use models or patterns to find equivalence.



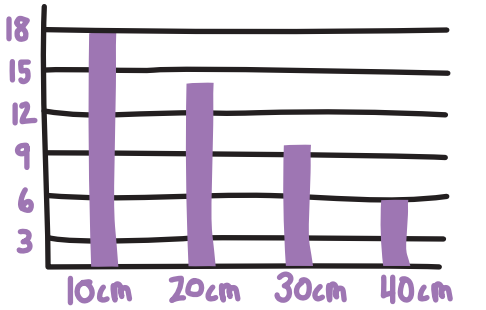
A girl with pigtails, wearing an orange t-shirt with a soccer ball design, stands in front of a whiteboard. She is pointing at a square on the board with a vertical line of symmetry. To the right of the square are three other shapes: a triangle, a diamond, and a trapezoid, each with lines of symmetry drawn on them.

I use geometric features like lines of symmetry to help define shapes.



A girl with pigtails, wearing an orange t-shirt with a soccer ball design, stands next to a whiteboard. On the whiteboard is a table and a bar graph.

Length	Swings
10cm	18
20cm	14
30cm	10
40cm	6



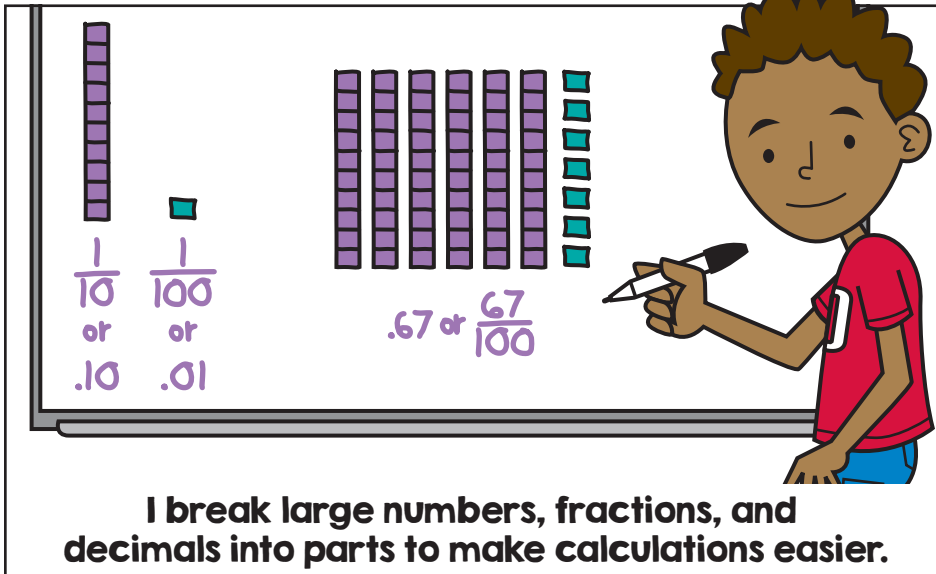
The bar graph has a vertical axis labeled from 3 to 18 in increments of 3. The horizontal axis is labeled with lengths: 10cm, 20cm, 30cm, and 40cm. The bars represent the number of swings for each length: 18 for 10cm, 14 for 20cm, 10 for 30cm, and 6 for 40cm.

I use coordinate numbers to locate a point on a grid or graph.

Look for and express regularity in repeated reasoning.

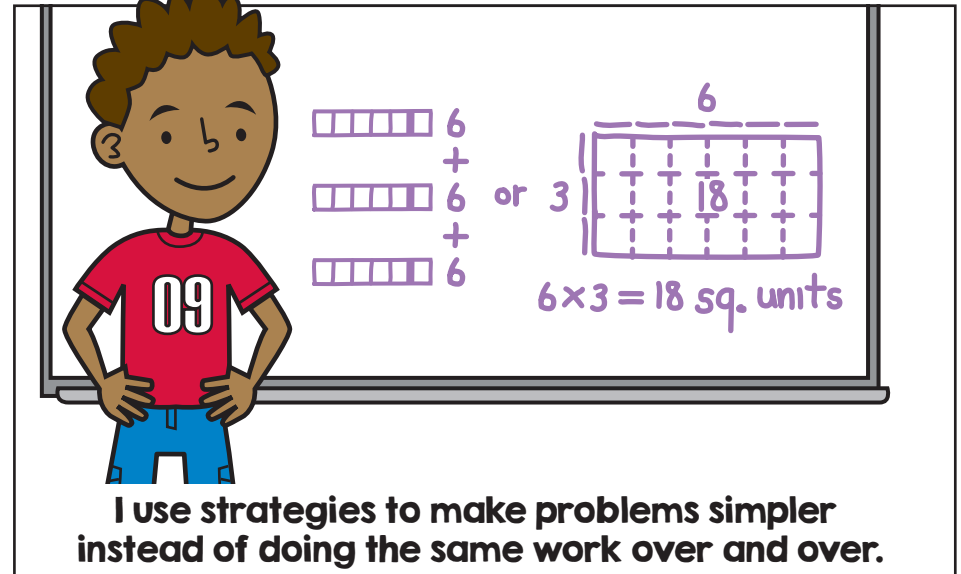
MP. 8

I can make generalizations about numbers and facts, and come up with strategies to solve similar problems.



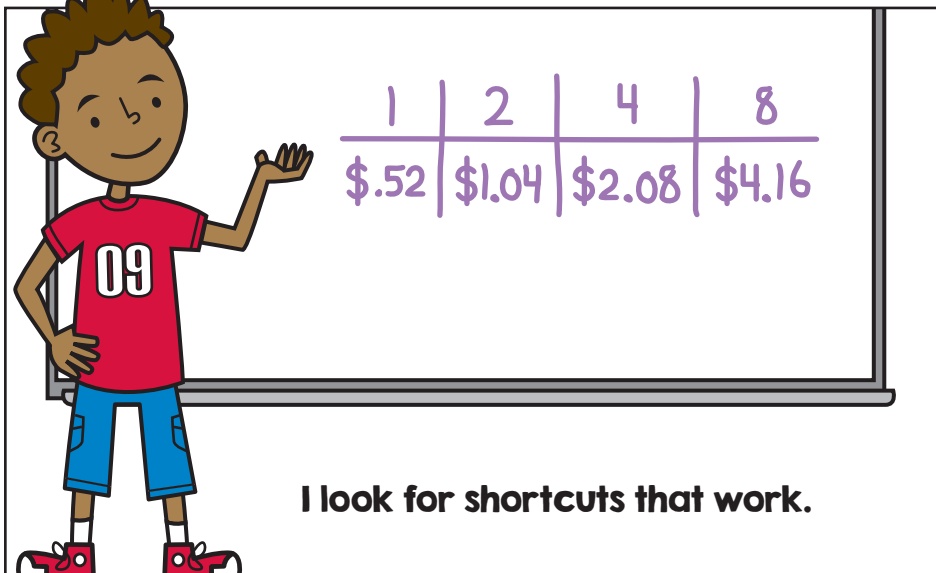
The boy is writing on a whiteboard. On the left, there is a vertical bar representing $\frac{1}{10}$ or $.10$ and a small square representing $\frac{1}{100}$ or $.01$. In the center, there are six vertical bars representing $.67$ or $\frac{67}{100}$. The boy is holding a marker and pointing at the blocks.

I break large numbers, fractions, and decimals into parts to make calculations easier.



The boy is standing next to a whiteboard. On the board, there are three rows of five blocks each, representing $6 + 6 + 6$. To the right, there is a grid representing $6 \times 3 = 18$ sq. units. The boy is holding a marker and pointing at the grid.

I use strategies to make problems simpler instead of doing the same work over and over.

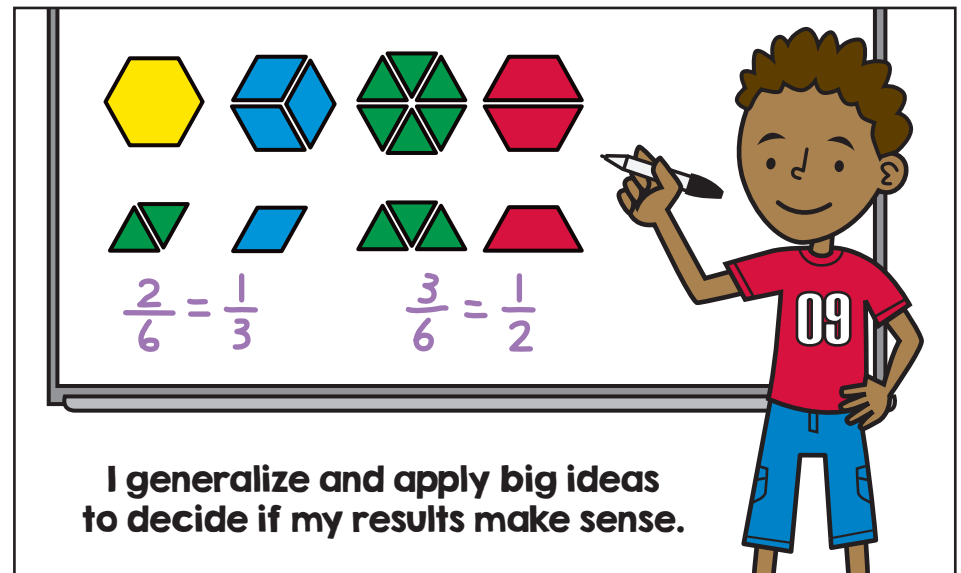


The boy is standing next to a whiteboard. On the board, there is a table with the following values:

1	2	4	8
\$0.52	\$1.04	\$2.08	\$4.16

The boy is holding a marker and pointing at the table.

I look for shortcuts that work.



The boy is writing on a whiteboard. On the board, there are four geometric shapes: a yellow hexagon, a blue cube, a green hexagon divided into six triangles, and a red hexagon divided into six triangles. Below the shapes, there are two equations: $\frac{2}{6} = \frac{1}{3}$ and $\frac{3}{6} = \frac{1}{2}$. The boy is holding a marker and pointing at the equations.

I generalize and apply big ideas to decide if my results make sense.