

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.

Flowers	Friends
Lisa	8
Imani	8
Carla	8
	↓
	24

Select a strategy.

While I'm working I...

Follow my plan to solve the problem.

Lisa Imani Carla
+8 +8 +8

Try another strategy if I get stuck.

+8 +8 +8

0 8 16 24

$8 + 8 + 8 = 24$ Flowers

Keep working until I find an answer.

When I have an answer I...

Does $8 + 8 + 8$ equal 24?

Ask if it makes sense.

8

3

$3 \times 8 = 24$
 $8 \times 3 = 24$
 $24 \div 8 = 3$
 $24 \div 3 = 8$

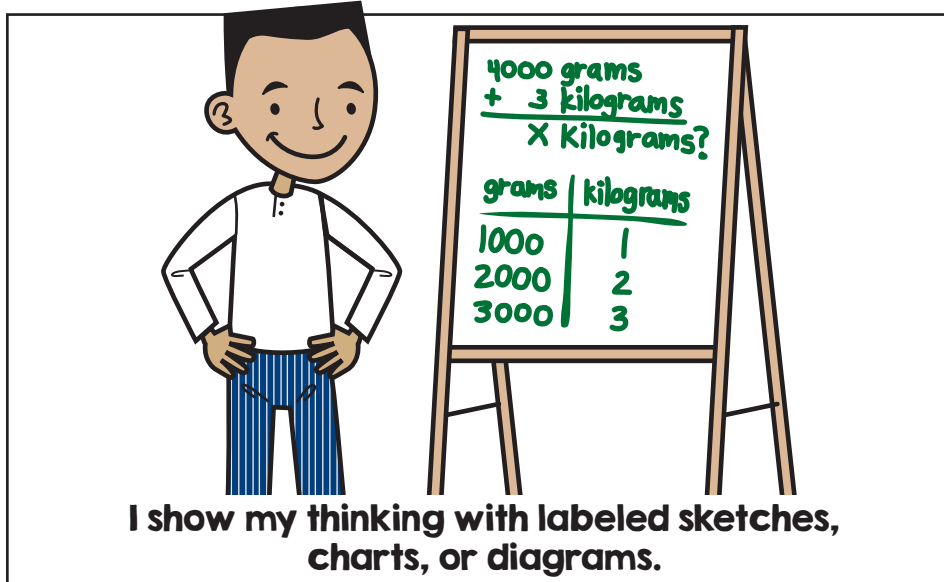
Check my work using another strategy.

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

Reason abstractly and quantitatively.

MP.2

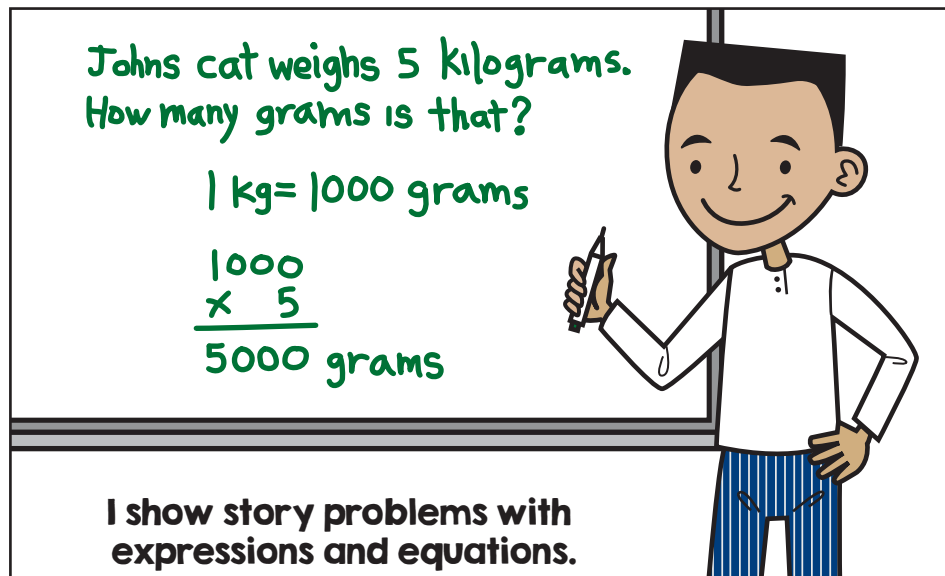
I can represent math problems in a variety of ways and think about what the problems mean.



4000 grams
+ 3 kilograms
X Kilograms?

grams	kilograms
1000	1
2000	2
3000	3

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

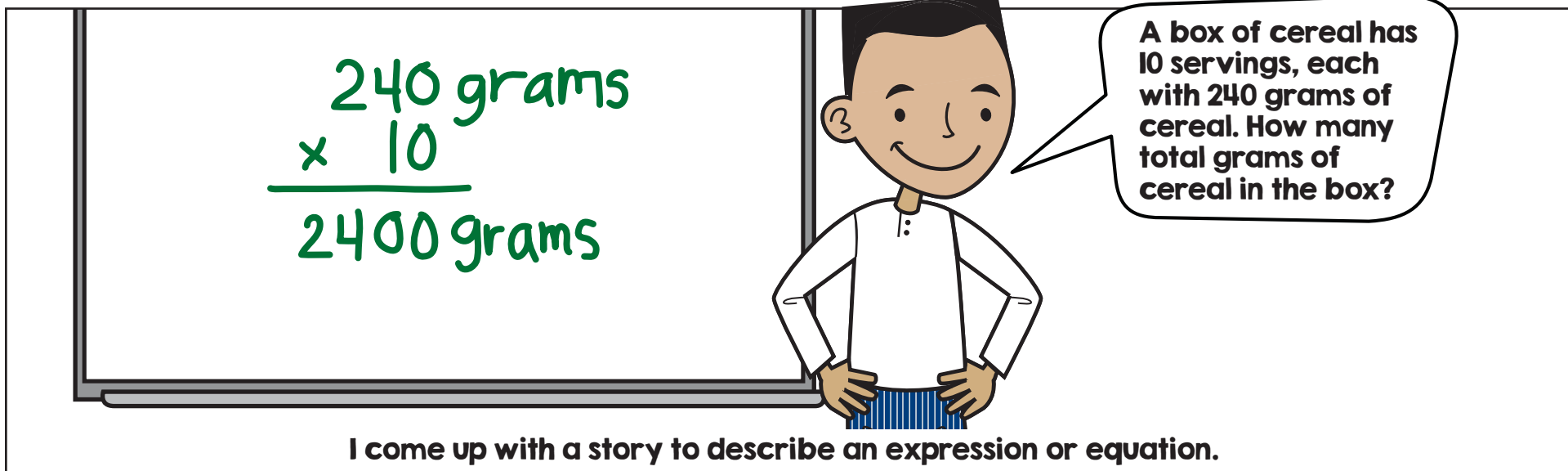


Johns cat weighs 5 kilograms.
How many grams is that?

1 kg = 1000 grams

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

I show story problems with expressions and equations.


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

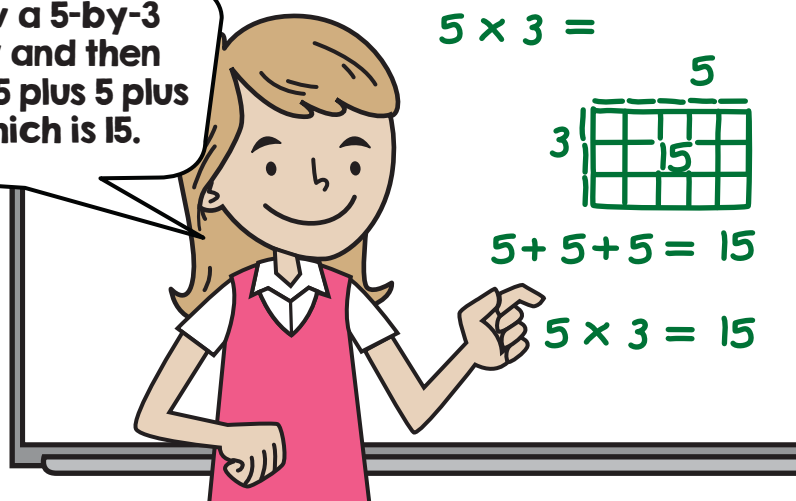
A box of cereal has 10 servings, each with 240 grams of cereal. How many total grams of cereal in the box?

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

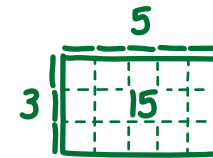
Construct viable arguments and critique the reasoning of others. MP.3

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.



I explain how I got the answer.



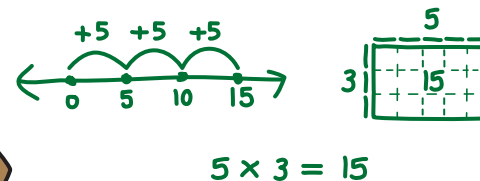
$$5 \times 3 = 15 \text{ sq. units}$$

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 solve math problems using models, labeled sketches, expressions, and equations.

$(4 \times 2) + (2 \times 2) = ?$

I use base ten pieces, geoboards, and other tools.

$176 \div 11 = ?$

	16		
1	10	7	6
11	110	77	66
	176		

I work with diagrams like arrays and ratio tables to help.

16	24
①	①
②	②
④	③
⑧	④
16	⑥
	⑧

I make charts, lists, and graphs to show and think about relationships.

There are 3 baskets, 14 apples in each. How many in all?

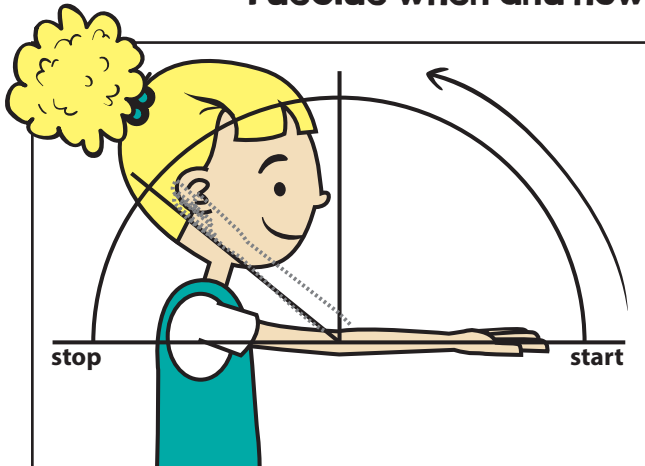
$3 \times 14 = ?$
 $(2 \times 14) + 14 = 28 + 14 = 42$
 $3 \times 14 = 42$

I represent my work with expressions and equations.

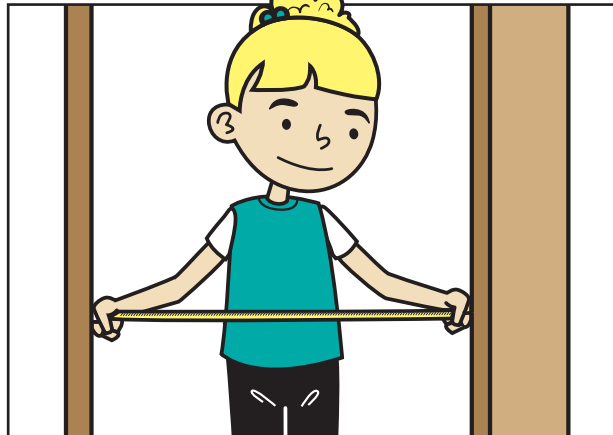
Use appropriate tools strategically.

MP. 5

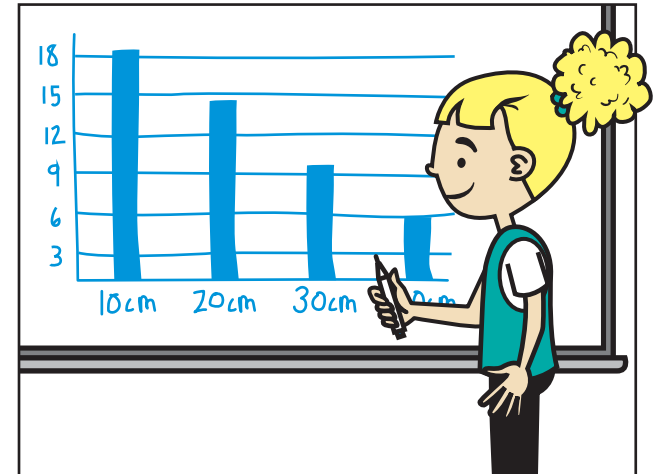
I decide when and how to use math tools, pictures, and models to help solve problems.



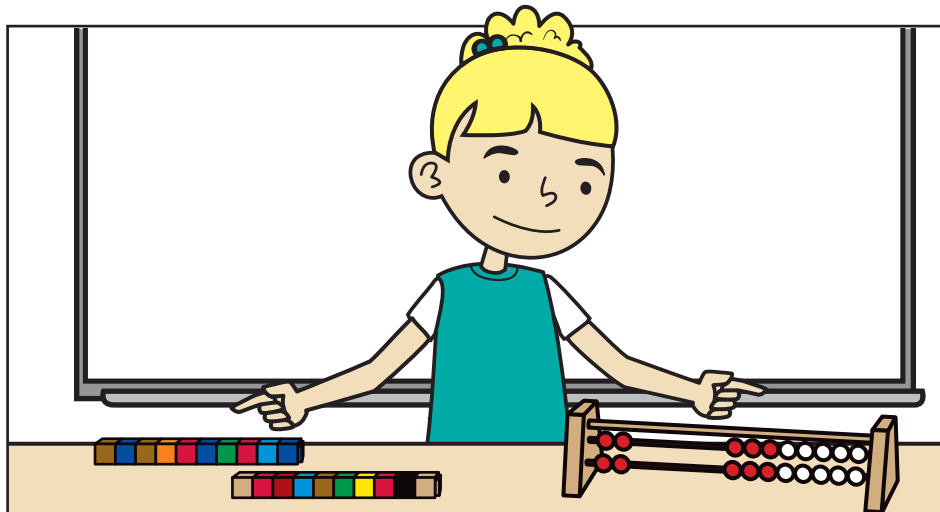
I know when I can estimate and when I need to find the exact answer.



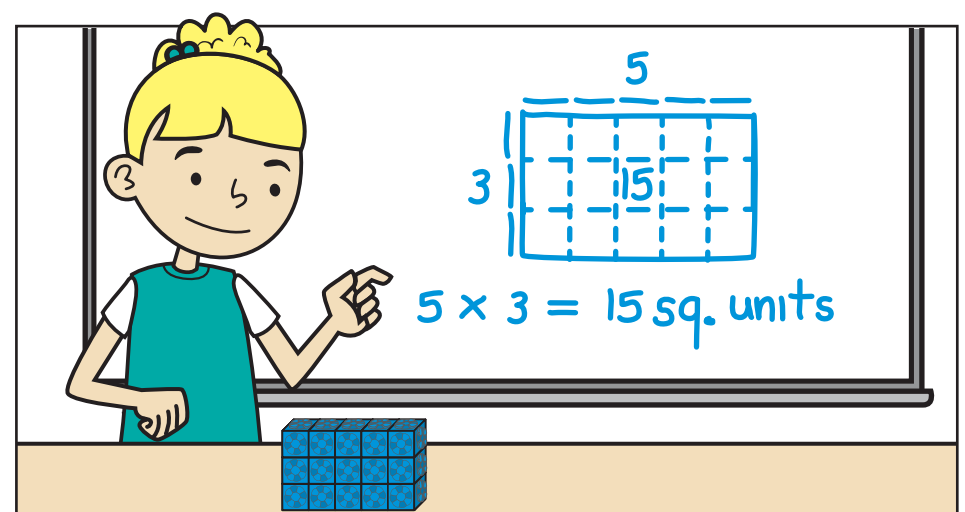
I use tools like rulers and meter sticks to compare units of measure.



I represent and explain data with graphs.



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

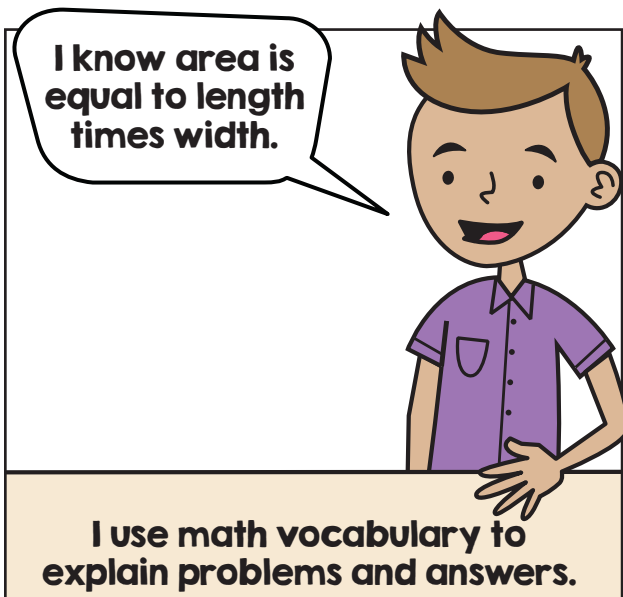


I determine whether the tool I selected makes sense.

Attend to precision.

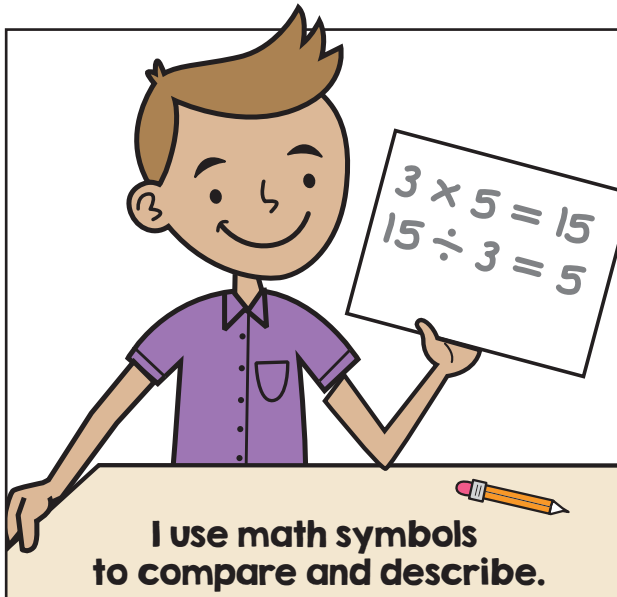
MP. 6

I can be mathematically precise and describe my ideas clearly.



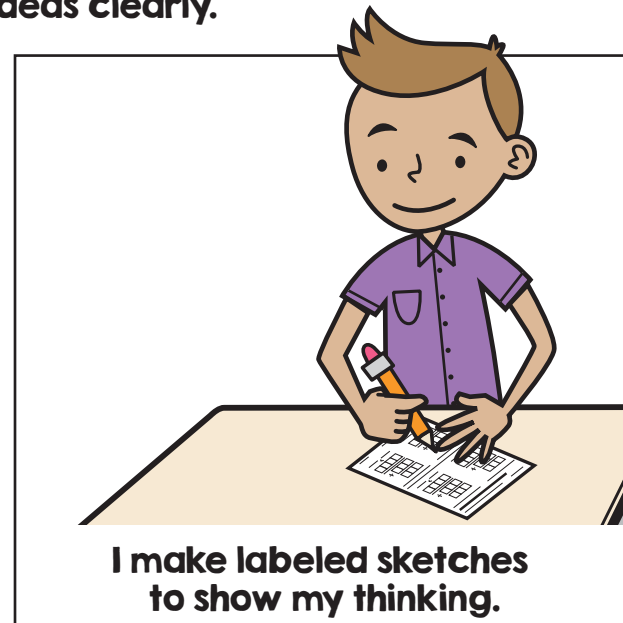
I know area is equal to length times width.

I use math vocabulary to explain problems and answers.

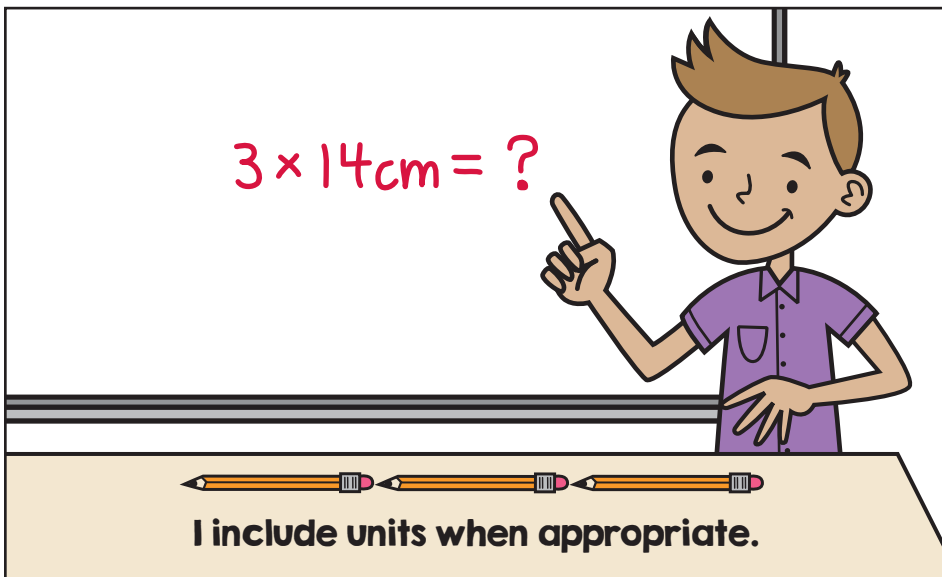


$3 \times 5 = 15$
 $15 \div 3 = 5$

I use math symbols to compare and describe.

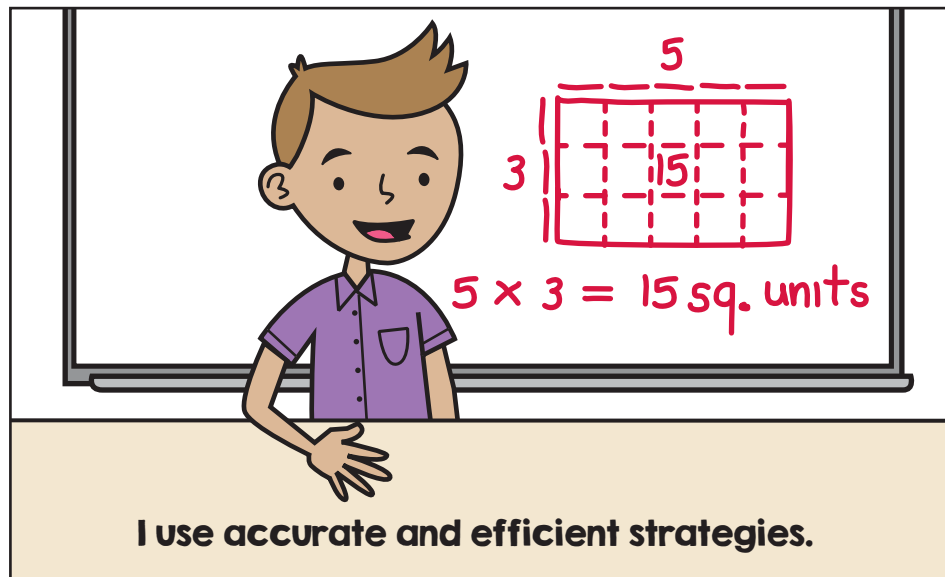


I make labeled sketches to show my thinking.



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

I include units when appropriate.



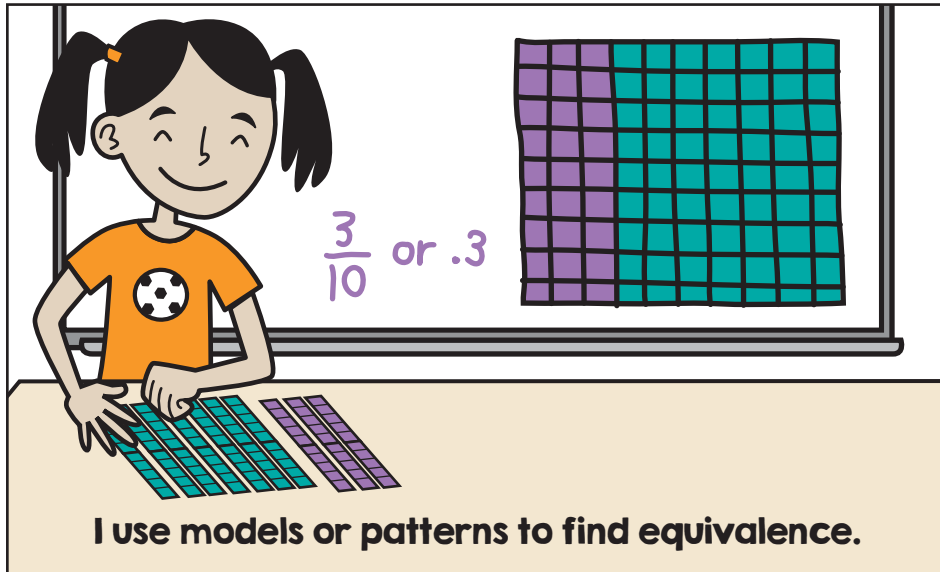
$5 \times 3 = 15 \text{ sq. units}$

I use accurate and efficient strategies.

Look for and make use of structure.

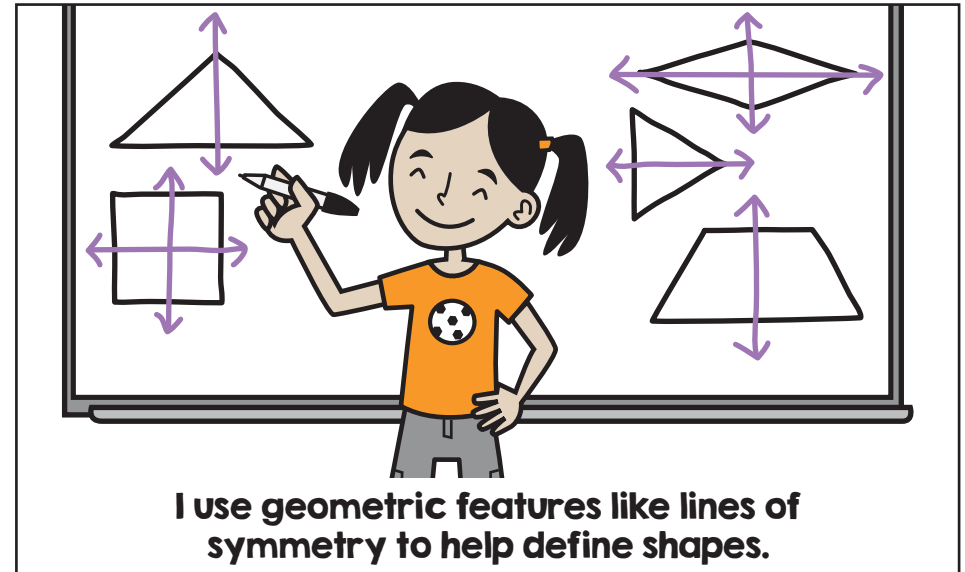
MP. 7

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



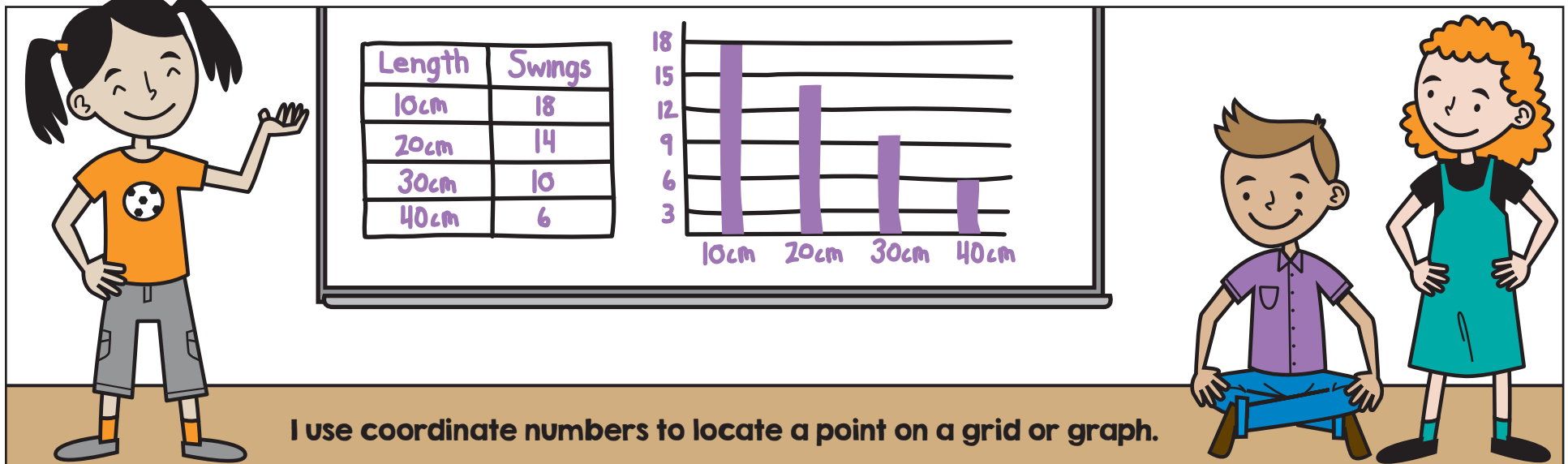
A girl with pigtails is standing at a desk. On the desk are several rows of colored blocks (green and purple). On the whiteboard behind her, the fraction $\frac{3}{10}$ or $.3$ is written. To the right of the text is a 10x10 grid where the first three columns are shaded purple and the rest are teal.

I use models or patterns to find equivalence.



A girl is standing in front of a whiteboard. She is pointing at several geometric shapes drawn on the board. Each shape has purple arrows indicating lines of symmetry: a triangle, a square, a diamond, a trapezoid, and a triangle pointing right.

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



A girl is standing next to a whiteboard. On the whiteboard is a table and a bar graph. The table shows the relationship between length and the number of swings. The bar graph shows the same data with bars of decreasing height as length increases.

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

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.

$\frac{1}{10}$ or $.10$
 $\frac{1}{100}$ or $.01$
 $.67$ or $\frac{67}{100}$

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

$6 + 6 + 6$
 or 3×6
 $6 \times 3 = 18 \text{ sq. units}$

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

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

I look for shortcuts that work.

$\frac{2}{6} = \frac{1}{3}$
 $\frac{3}{6} = \frac{1}{2}$

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