3rd Grade
Week 1
Math/Science Work
Week of: April 13-April 17

Date:	Work:	Standards:
Monday (4-13)	Math: • Lesson 11.1- Model Perimeter Page 433-436 Science: • "What's It Like in Space?" ReadWorks passage and questions • Watch BrainPOP Jr. on "Gravity"	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 MAFS.3.MD.2.4 SC.3.E.5.4
Tuesday (4-14)	Math: • Lesson 11.1- Model Perimeter Standard Practice Page P215-P216 Science: • "What's It Like in Space?" ReadWorks passage and questions • Watch BrainPOP Jr. on "Gravity"	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 MAFS.3.MD.2.4 SC.3.E.5.4
Wednesday (4-15)	Math: • Lesson 11.2- Find Perimeter Page 437-440 Science: • "What's It Like in Space?" ReadWorks passage and questions • Watch BrainPOP Jr. on "Gravity"	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 MAFS.3.MD.2.4 SC.3.E.5.4
Thursday (4-16)	Math: • Lesson 11.2- Find Perimeter Standard Practice Page P217-P218 Science: • "What's It Like in Space?" ReadWorks passage and questions • Watch BrainPOP Jr. on "Gravity"	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 MAFS.3.MD.2.4 SC.3.E.5.4
Friday (4-17)	Math: • Standard Practice MD.4.8 Page 85-86 Science: • "What's It Like in Space?" ReadWorks passage and questions • Watch BrainPOP Jr. on "Gravity"	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 MAFS.3.MD.2.4 SC.3.E.5.4

What's It Like in Space?

This text is adapted from an original work of the Core Knowledge Foundation.

In 1969, a group of American astronauts visited the moon on a rocket ship called Apollo 11. Since then, many more astronauts have traveled in space. Scientists have learned that there are many differences between Earth and space. One of the biggest differences has to do with gravity. Gravity is a force of attraction that pulls things toward one another. The force of gravity on Earth is pretty strong. Even the best jumpers can only jump a few feet off the ground. (Try it and see!)

Want to jump high? You will have to fight against gravity.

Two of the American astronauts who visited the moon were Buzz Aldrin and Neil Armstrong. When they were on the moon, they were easily able to jump up high. They didn't come down quickly either. Instead, they seemed to float down slowly. That was because the force of

gravity on the moon is not as strong as on Earth. The moon is not as big as Earth. So the force of gravity is not as strong on the moon.

If you think that is cool, wait until you read what happens out in space, away from the moon or planets. Out in space, astronauts do not feel the effects of gravity. They and their spaceship are moving freely in space. Since the astronaut and spaceship are moving freely together, the astronauts look and feel as if they are floating!

This astronaut is inside a spaceship in space, where the force of gravity is less.

Up in space, lots of things are different. You can do a flip and not worry about whether you will make it all the way around before you come down!

When you are free of the effects of gravity, it is easier to do flips and cartwheels.

Eating is different in space, too. I'll bet when you eat lunch at school, your food stays where you put it. If you set it on a table, it stays there until you pick it up. The force of gravity holds it down. But if you were up in space, you and your food would be moving freely together. If you let go of it, your food might drift away!

Look, no hands! These astronauts' lunches appear to be floating!

There are other differences in space besides less gravity. Did you know that the astronauts on the moon had to carry tanks of air for breathing? That's because another way outer space is different from Earth is that there is no air or oxygen at all in outer space. Look again at the image of the astronauts inside the spaceship. The astronauts are not carrying tanks of air. That's because oxygen is being pumped inside the spaceship.

Since there is no air in space, you also do not hear sounds in outer space. It is also very cold in space. The astronauts must train many months before going into space so they know what to expect. Do you think you would like to go into space some day?

This is what Earth looks like from the moon. Can you name some ways that being in space is different from being on Earth?

Name: _____ **Date:** _____

1. Where are the effects of gravity stronger, on Earth or in space?

_____

_____

_____

2. Describe an example from the text that shows how gravity is different in space than on Earth.

_____

_____

_____

3. There is no air in outer space. How does this affect people who go to outer space? Support your answer with details from the text.

_____

_____

_____

4. What is the main idea of this text?

_____

_____

_____

Model Perimeter

Essential Question How can you find perimeter?

Investigate

Perimeter is the distance around a shape.

Materials ■ geoboard ■ rubber bands

You can find the perimeter of a rectangle on a geoboard or on dot paper by counting the number of units on each side.

A. Make a rectangle on the geoboard that is 3 units on two sides and 2 units on the other two sides.

B. Draw your rectangle on this dot paper.

← 1 Unit
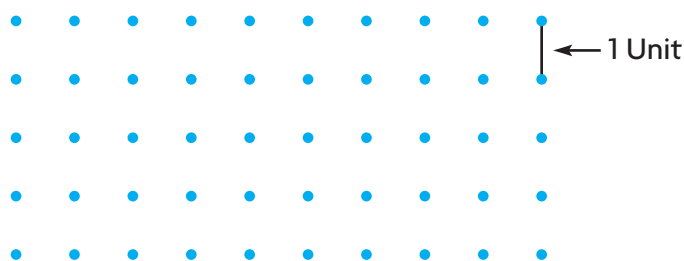
C. Write the length next to each side of your rectangle.

D. Add the number of units on each side.

_____ + _____ + _____ + _____ = _____

E. So, the perimeter of the rectangle

is _____ units.
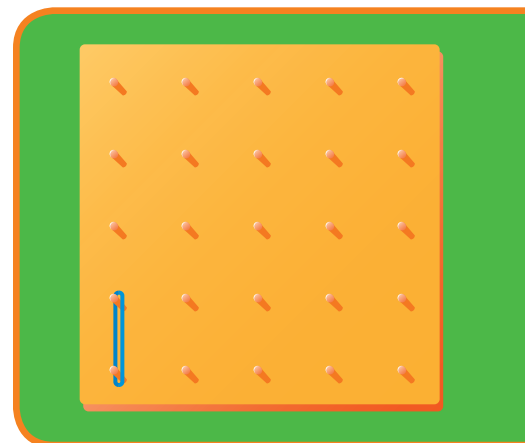
- How would the perimeter of the rectangle change if the length of two of the sides was 4 units instead of 3 units?

_____

_____

Draw Conclusions ....

1. **Describe** how you would find the perimeter of a rectangle that is 5 units wide and 6 units long.

   _____

2. 🔥**H.O.T.** A rectangle has two pairs of sides of equal length. **Explain** how you can find the unknown length of two sides when the length of one side is 4 units, and the perimeter is 14 units.

   _____

   _____

   _____

3. **Evaluate** Jill says that finding the perimeter of a shape with all sides of equal length is easier than finding the perimeter of other shapes. Do you agree? **Explain.**

   _____

   _____

Make Connections ....

You can also use grid paper to find the perimeter of shapes by counting the number of units on each side.

Start at the arrow and trace the perimeter. Begin counting with 1. Continue counting each unit around the shape until you have counted each unit.

Math Talk MATHEMATICAL PRACTICES
If a rectangle has a perimeter of 12 units, how many units wide and how many units long could it be? **Explain**.
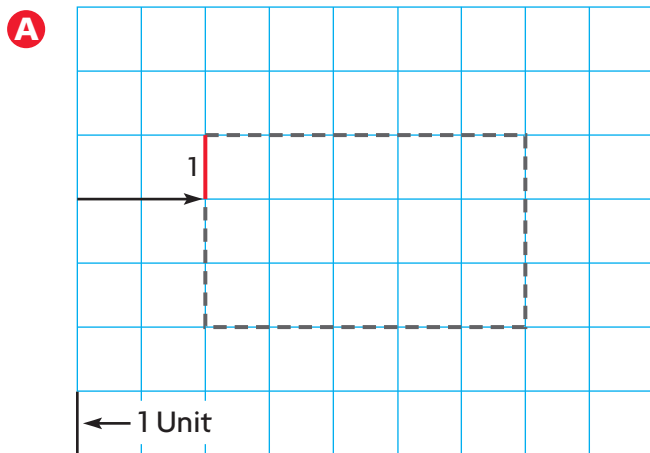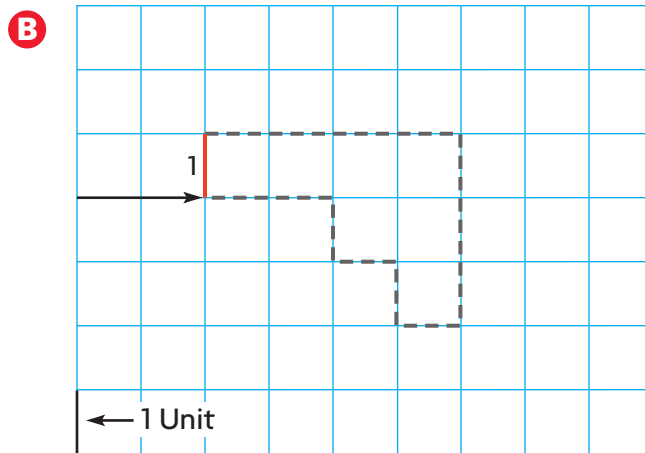
Ⓐ

1

← 1 Unit

Perimeter = _____ units

Ⓑ

1

← 1 Unit

Perimeter = _____ units

Share and Show [MATH BOARD] ....

Find the perimeter of the shape. Each unit is 1 centimeter.

1.

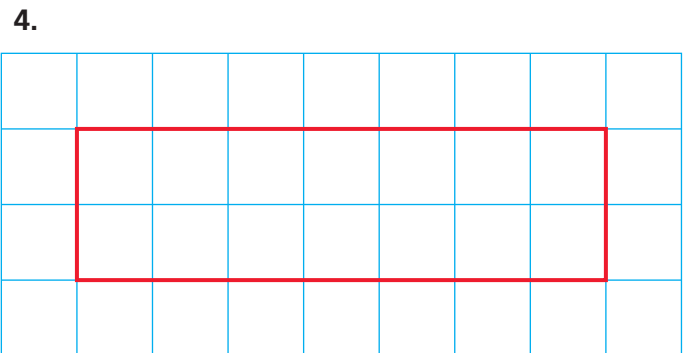_____ centimeters

2.

_____ centimeters

3.

_____ centimeters

4.
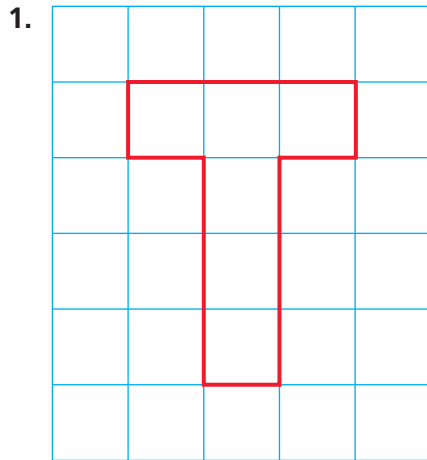
_____ centimeters

Find the perimeter.

5. A shape with four sides that measure 4 centimeters, 6 centimeters, 5 centimeters, and 1 centimeter

_____ centimeters

6. A shape with two sides that measure 10 inches, one side that measures 8 inches, and one side that measures 4 inches

_____ inches

7. **H.O.T.** **Write Math** ▶ **Explain** how to find the length of each side of a triangle with sides of equal length, and a perimeter of 27 inches.

_____

_____

Problem Solving ....

H.O.T. **What's the Error?**

8. Kevin is solving perimeter problems. He counts the units and says that the perimeter of this shape is 22 units.

Look at Kevin's solution.

Find Kevin's error.

A

B
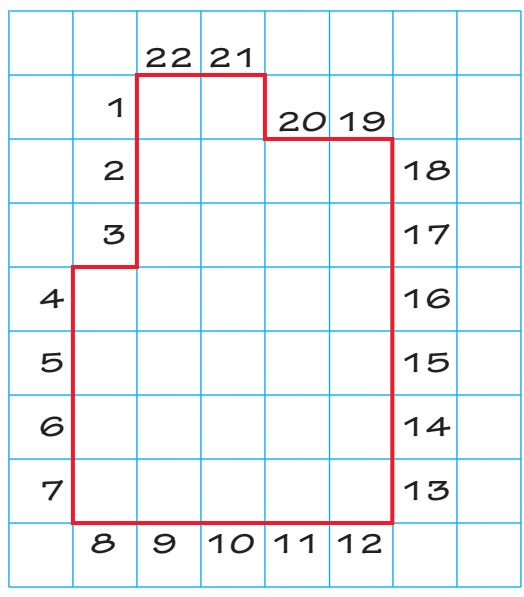
Perimeter = 22 units
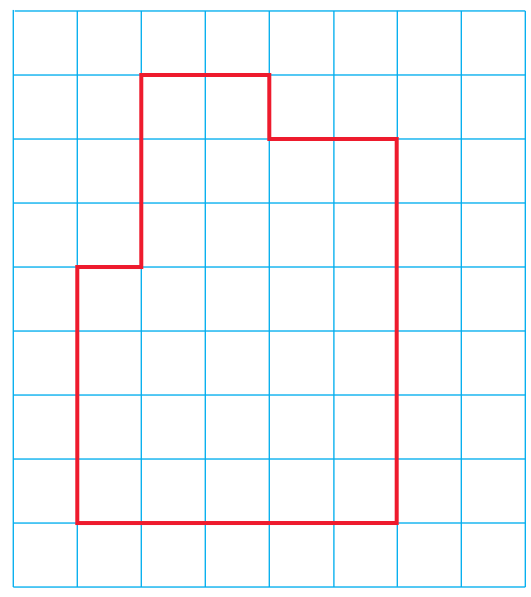
Perimeter = _____ units

- Use the grid on the right to find the correct perimeter of the shape above.

  _____

- Describe the error Kevin made.

  _____

  _____

  _____

- Circle the places in the drawing of Kevin's solution where he made an error.

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School-Home Letter

Dear Family,

During the next few weeks, our math class will be learning about perimeter and area of shapes.

You can expect to see homework that provides practice with measuring and finding perimeter, and finding area by counting squares, using addition, or using multiplication.

Here is a sample of how your child will be taught to find perimeter.

Vocabulary

area The measure of unit squares needed to cover a flat surface

perimeter The distance around a shape

unit square A square with a side length of 1 unit that is used to measure area

🔒 MODEL Find Perimeter

These are two ways to find perimeter.

Count units.

Find the perimeter of the shape by counting each unit around the shape.
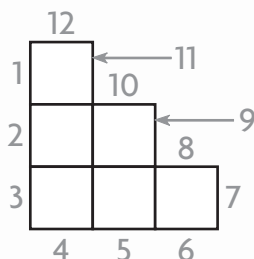
Perimeter is the distance around a shape.

So, the perimeter is 12 units.

Use addition.

Find the perimeter of the rectangle.
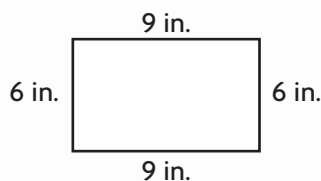
Perimeter = length + width + length + width

Add: 9 + 6 + 9 + 6 = 30 inches

So, the perimeter is 30 inches.

Tips

Finding Unknown Side Lengths

Sometimes not all lengths of the sides of a shape are given. If you know the perimeter, you can add the lengths of the sides you know and use an equation to find the unknown side length.

Activity

Have your child practice finding the perimeter and area of items around the house. Find and measure the sides of items that have plane shapes, such as an envelope, a place mat, a square potholder, a pennant, or a rug.
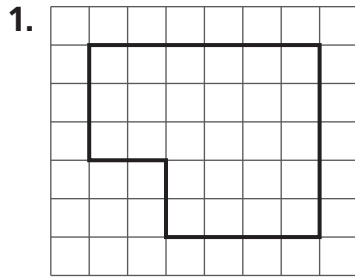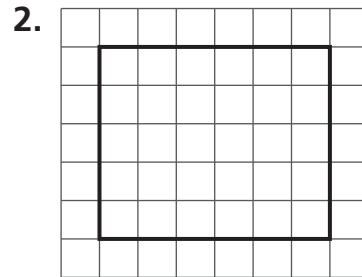
Name _____

Model Perimeter

COMMON CORE STANDARD MACC.3.MD.4.8
Geometric measurement: recognize perimeter as an
attribute of plane figures and distinguish between
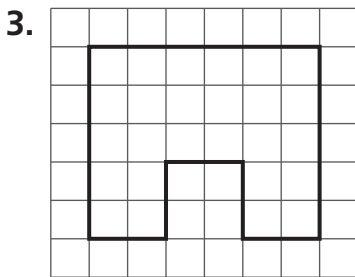linear and area measures.

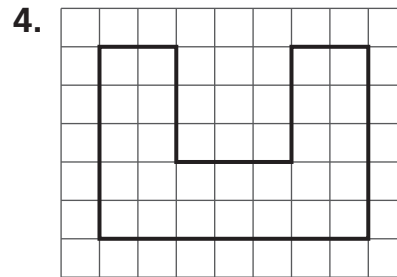## Find the perimeter of the shape. Each unit is 1 centimeter.
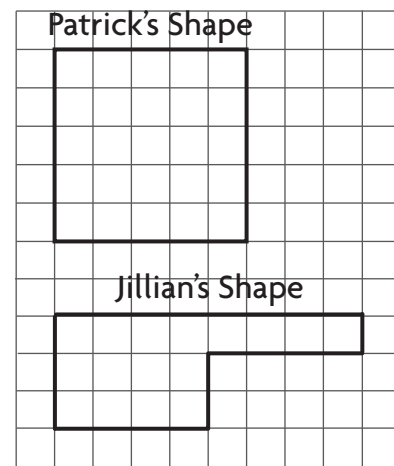
1.

22 centimeters

2.

_____ centimeters

3.

_____ centimeters

4.

_____ centimeters

Problem Solving REAL WORLD
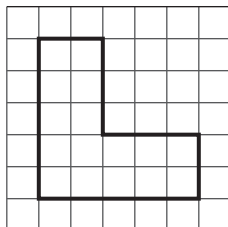
Use the drawing for 5–6. Each unit is 1 centimeter.

5. What is the perimeter of Patrick's
shape?

_____

6. How much greater is the perimeter of
Jillian's shape than the perimeter of
Patrick's shape?

_____

Patrick's Shape

Jillian's Shape

Lesson Check (MACC.3.MD.4.8)

1. Find the perimeter of the shape. Each unit is 1 centimeter.

(A) 14 centimeters

(B) 16 centimeters

(C) 18 centimeters

(D) 20 centimeters

2. Find the perimeter of the shape. Each unit is 1 centimeter.
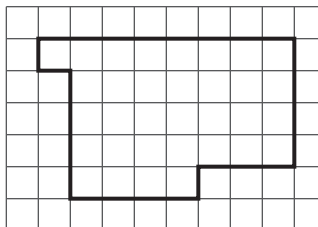
(A) 19 centimeters

(B) 26 centimeters

(C) 33 centimeters

(D) 55 centimeters

Spiral Review (MACC.3.NF.1.3d, MACC.3.MD.1.1, MACC.3.MD.1.2)

3. Which lists the fractions in order from least to greatest? (Lesson 9.5)

$$\frac{2}{4}, \frac{2}{3}, \frac{2}{6}$$

(A) $\frac{2}{3}, \frac{2}{4}, \frac{2}{6}$

(B) $\frac{2}{6}, \frac{2}{4}, \frac{2}{3}$

(C) $\frac{2}{4}, \frac{2}{3}, \frac{2}{6}$

(D) $\frac{2}{3}, \frac{2}{6}, \frac{2}{4}$

4. Kasey's school starts at the time shown on the clock. What time does Kasey's school start? (Lesson 10.1)

(A) 6:40   (C) 8:30

(B) 8:06   (D) 9:30

5. Michael and Dex are comparing fraction strips. Which statement is NOT correct? (Lesson 9.2)

(A) $\frac{1}{2} < \frac{2}{2}$ (C) $\frac{4}{8} < \frac{3}{8}$

(B) $\frac{2}{3} > \frac{1}{3}$ (D) $\frac{4}{6} > \frac{2}{6}$

6. Aiden wants to find the mass of a bowling ball. Which unit should he use? (Lesson 10.8)

(A) liter   (C) gram

(B) inch   (D) kilogram

Find Perimeter

Essential Question How can you measure perimeter?

You can estimate and measure perimeter in standard units, such as inches and centimeters.

🔑 UNLOCK the Problem REAL WORLD

Find the perimeter of the cover of a notebook.

🔒 Activity Materials ■ inch ruler

STEP 1 Estimate the perimeter of a notebook in inches. Record your estimate. _____ inches

STEP 2 Use an inch ruler to measure the length of each side of the notebook to the nearest inch.

STEP 3 Record and add the lengths of the sides measured to the nearest inch.

_____ + _____ + _____ + _____ = _____

So, the perimeter of the notebook cover measured

to the nearest inch is _____ inches.

Math Talk MATHEMATICAL PRACTICES
Explain how your estimate compares with your measurement.

Try This! Find the perimeter.

Use an inch ruler to find the length of each side.	Use a centimeter ruler to find the length of each side.
Add the lengths of the sides:	Add the lengths of the sides:
_____ + _____ + _____ + _____ = _____	_____ + _____ + _____ + _____ = _____
The perimeter is _____ inches.	The perimeter is _____ centimeters.

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Share and Show MATH BOARD ·····································

1. Find the perimeter of the triangle in inches.

_____ in.   _____ in.
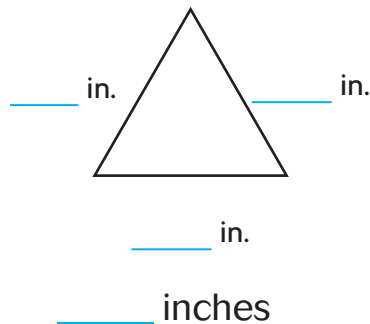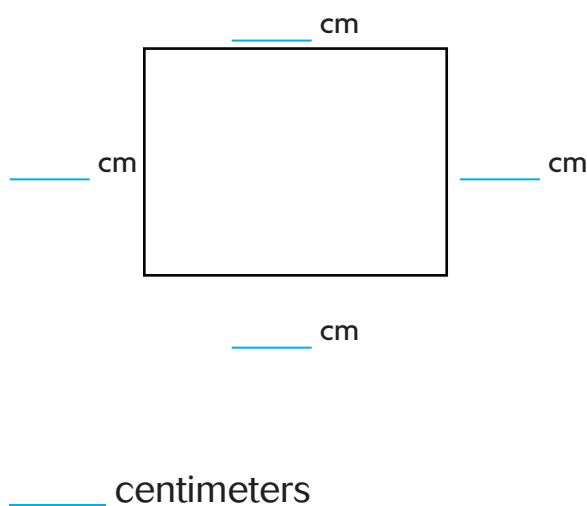
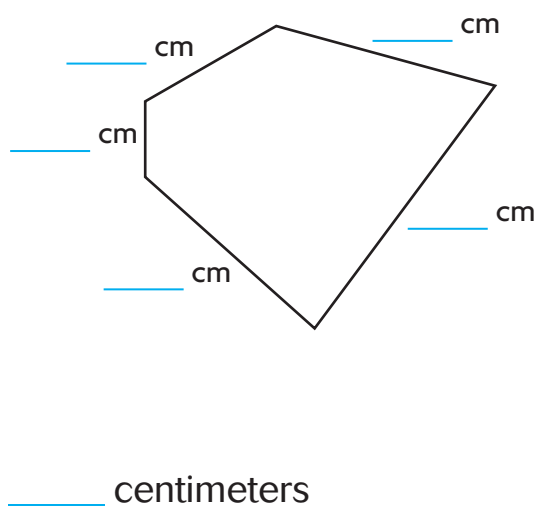**Think:** How long is each side?

_____ in.

_____ inches

Math Talk **Explain** how many numbers you add together to find the perimeter of a shape.
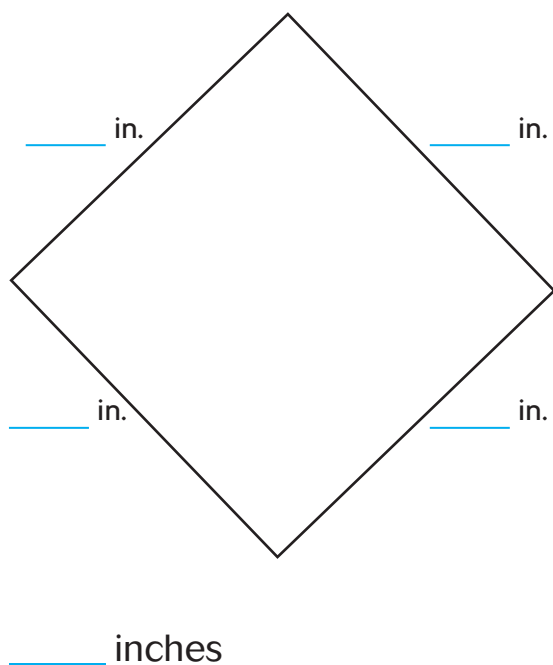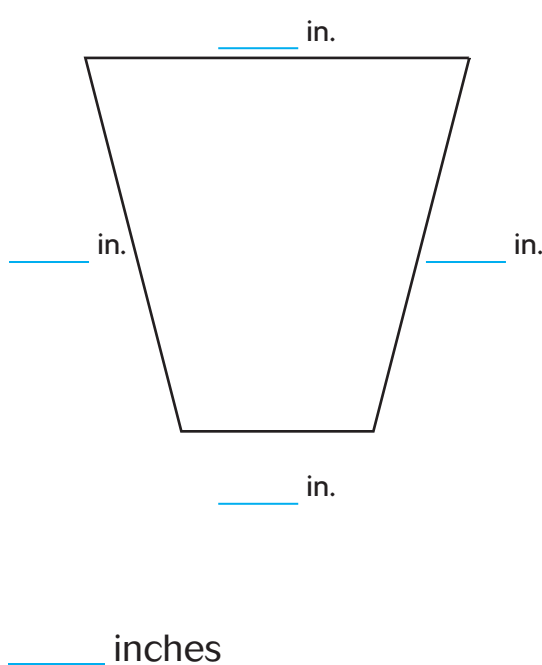
Use a centimeter ruler to find the perimeter.

2.

_____ cm

_____ cm   _____ cm

_____ cm

_____ centimeters

3.

_____ cm   _____ cm

_____ cm

_____ cm

_____ cm

_____ centimeters

Use an inch ruler to find the perimeter.

4.

_____ in.   _____ in.

_____ in.   _____ in.

_____ inches

5.

_____ in.

_____ in.   _____ in.

_____ in.

_____ inches

On Your Own . . . .

Use a ruler to find the perimeter.

6.

_____ in.

_____ in.   _____ in.

_____ in.

_____ inches

7.

_____ cm

_____ cm

_____ cm   _____ cm

_____ cm

_____ cm

_____ cm
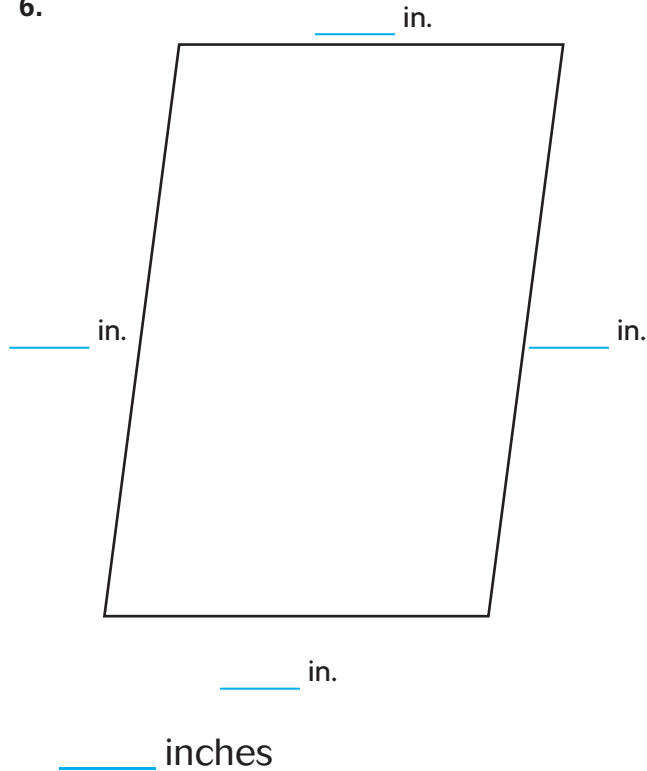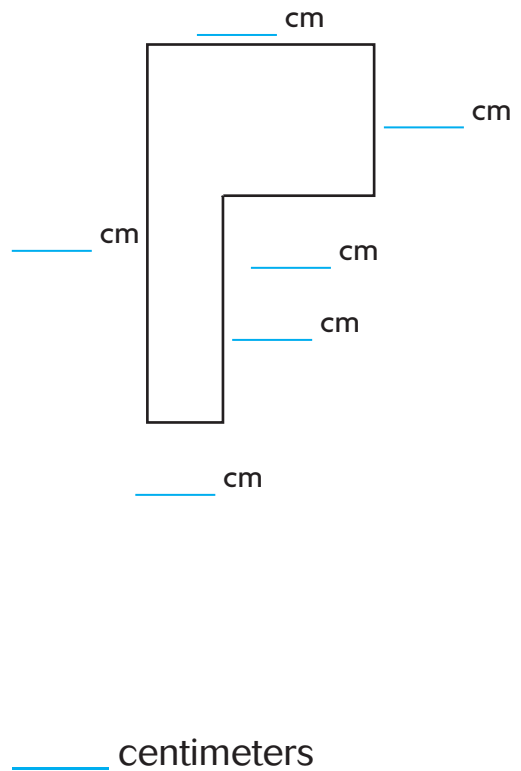
_____ centimeters

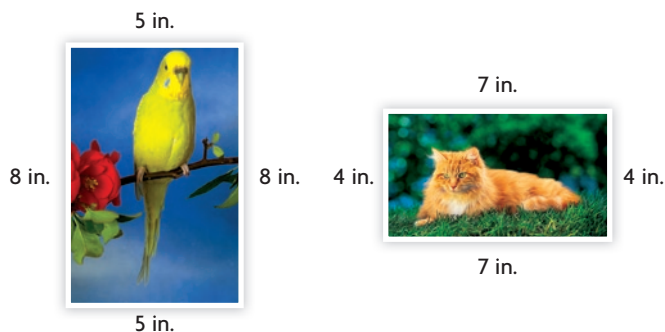**8.** Use the grid paper to draw a shape that has a perimeter of 24 centimeters. Label the length of each side.

← 1 cm
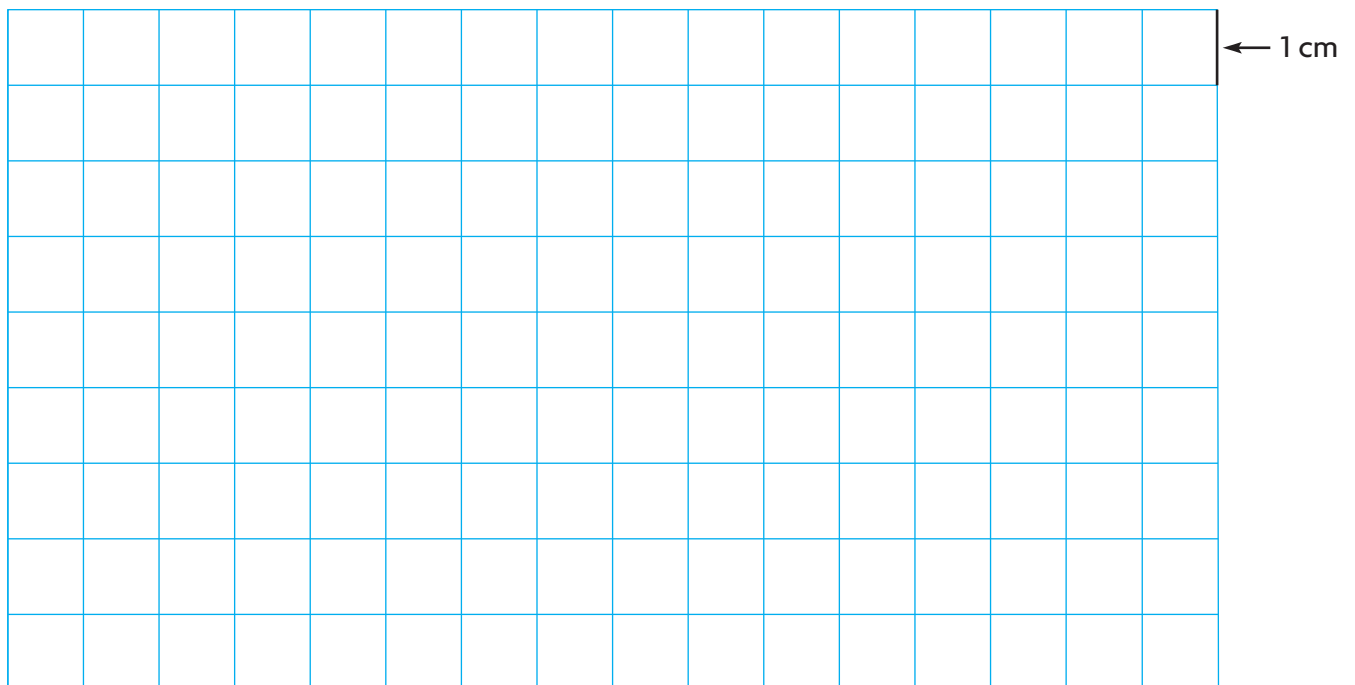
Problem Solving REAL WORLD

Use the photos for 9–10.

9. Which of the animal photos has a perimeter of 26 inches?

_____

10. How much greater is the perimeter of the bird photo than the perimeter of the cat photo?

_____

5 in.

8 in.   8 in.

5 in.

7 in.

4 in.   4 in.

7 in.

SHOW YOUR WORK

11. **H.O.T.** Erin is putting a fence around her square garden. Each side of her garden is 3 meters long. The fence costs $5 for each meter. How much will the fence cost?

_____

12. **H.O.T.** **Write Math** Gary's garden is shaped like a rectangle with two pairs of sides of equal length, and it has a perimeter of 28 feet. **Explain** how to find the lengths of the other sides if one side measures 10 feet.

_____

_____

_____

_____

9 ft

6 ft   6 ft

9 ft

13. **Test Prep** Austin's class is making a poster for Earth Day. What is the perimeter of the poster?
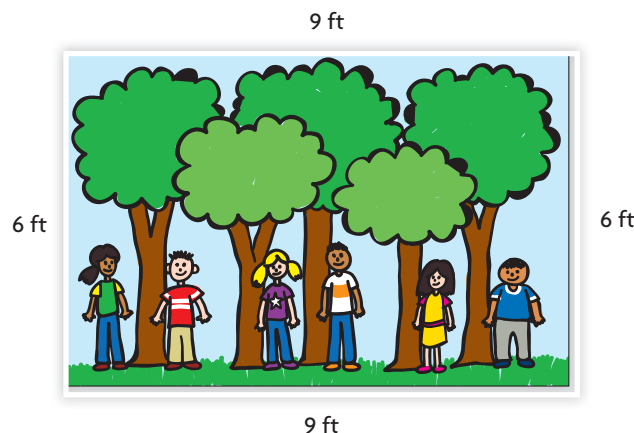
Ⓐ 20 feet   Ⓒ 24 feet

Ⓑ 21 feet   Ⓓ 30 feet

Name _____

Find Perimeter

Use a ruler to find the perimeter.

1.
_4_cm

_3_cm   _3_cm

_2_cm

12 centimeters

2.
___cm
___cm
___cm   ___cm
___cm

_____ centimeters

3.
___in.
___in.   ___in.
___in.

_____ inches

4.
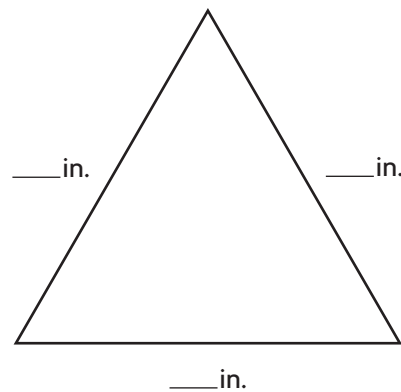___in.   ___in.
___in.
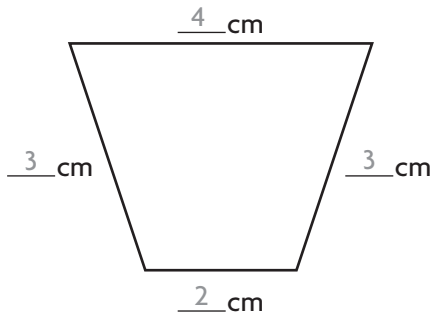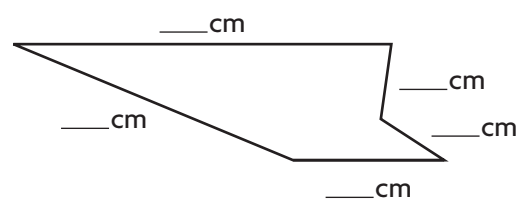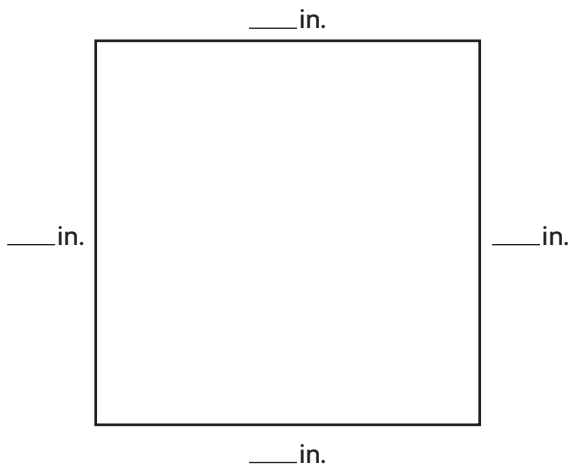
_____ inches

Problem Solving REAL WORLD

Draw a picture to solve 5–6.

5. Evan has a square sticker that measures 5 inches on each side. What is the perimeter of the sticker?

_____

6. Sophie draws a shape that has 6 sides. Each side is 3 centimeters. What is the perimeter of the shape?

_____

Lesson Check (MACC.3.MD.4.8)

Use an inch ruler for 1–2.

1. Ty cut a label the size of the shape shown. What is the perimeter, in inches, of Ty's label?

(A) 4 inches   (C) 6 inches

(B) 5 inches   (D) 7 inches

2. Julie drew the shape shown below. What is the perimeter, in inches, of the shape?
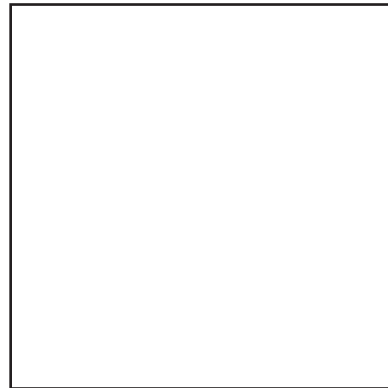
(A) 2 inches   (C) 6 inches

(B) 4 inches   (D) 8 inches

Spiral Review (MACC.3.NF.1.3d, MACC.3.MD.1.1, MACC.3.MD.1.2, MACC.3.MD.4.8)

3. What is the perimeter of the shape below? **(Lesson 11.1)**

(A) 8 units   (C) 20 units

(B) 10 units   (D) 22 units

4. Vince arrives for his trumpet lesson after school at the time shown on the clock. What time does Vince arrive for his trumpet lesson? **(Lesson 10.2)**

(A) 3:26 A.M.

(B) 4:26 A.M.

(C) 3:26 P.M.

(D) 4:26 P.M.
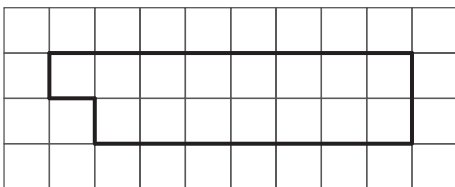
5. Matthew's small fish tank holds 12 liters. His large fish tank holds 25 liters. How many more liters does his large fish tank hold?

(Lesson 10.9)

(A) 12 liters   (C) 25 liters

(B) 13 liters   (D) 37 liters

6. Cecila and Sasha are comparing fraction strips. Which statement is correct? **(Lesson 9.3)**

(A) $\frac{1}{2} < \frac{1}{3}$ (C) $\frac{1}{4} > \frac{1}{2}$

(B) $\frac{1}{8} > \frac{1}{6}$ (D) $\frac{1}{6} < \frac{1}{4}$

MACC.3.MD.4.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

**1.** Robert drew the model below to show the fishpond in his backyard.

3 feet

4 feet   4 feet

4 feet   4 feet

3 feet
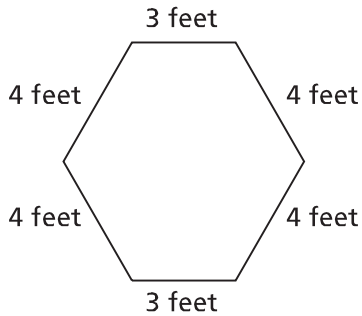
What is the perimeter of the fishpond?

A 7 feet

B 10 feet

C 16 feet

D 22 feet

2. On vacation, Mei bought a postcard to send to her best friend. The card is the shape of a rectangle.

8 cm

12 cm
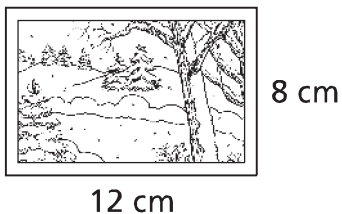
What is the perimeter of the postcard?

A 20 cm

B 24 cm

C 40 cm

D 96 cm

3. The flower garden in Mr. and Mrs. Garcia's backyard is in the shape of a rectangle.

4 feet

6 feet
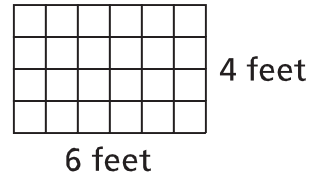
What is the perimeter of the garden?

4. The cover of Mario's library book has 4 equal sides and a perimeter of 36 inches. Which shows the length of one side of the book?

A 9 inches

B 12 inches

C 18 inches

D 36 inches

5. The area of a square is 25 square feet. The length of one side is 5 feet. What is the perimeter of the square?

A 10 feet

B 12 feet

C 15 feet

D 20 feet

6. Dwayne is painting a design on his bedroom wall in the shape of a hexagon with sides of equal length. The length of each side of the hexagon is 2 feet.
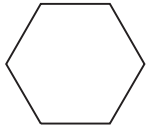
2 feet

What is the perimeter of his design?

_____

7. Phil measures one side of the baseball diamond at his school. It is 30 feet long. All four sides of the diamond are the same length. What is the perimeter of the baseball diamond?

A 150 feet

B 120 feet

C 90 feet

D 60 feet

8. Each side of the stop sign modeled below is 6 inches long.

What is the perimeter of the stop sign?

A 12 inches

B 36 inches

C 42 inches

D 48 inches

9. The perimeter of Sarah's town swimming pool is 54 feet. The length is 18 feet. The width is $\frac{1}{2}$ the length of the pool. What is the width of the pool?

A 18 feet

B 17 feet

C 9 feet

D 6 feet

10. Which shape has the same perimeter as the shape shown?
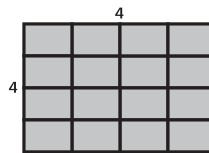
A
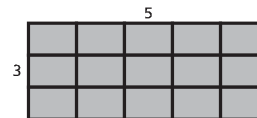
B
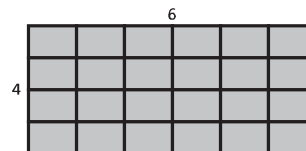
C
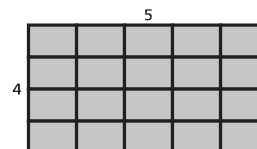
D
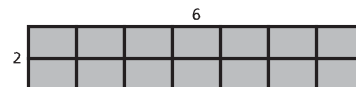
3rd Grade
Week 2
Math/Science Work
Week of: April 20-April 24

Date:	Work:	Standards:
Monday (4-20)	Math: • Lesson 11.3- Find Unknown Side Lengths Page 441-444 Science: • "Clean Energy" ReadWorks passage and questions	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 **MAFS.MD.3.5** **MAFS.3.MD.3.5a**/b MAFS.3.MD.3.6 SC.3.P.10.1 SC.3.P.10.2
Tuesday (4-21)	Math: • Lesson 11.3- Find Unknown Side Lengths Standard Practice Page P219-P220 Science: • "Clean Energy" ReadWorks passage and questions	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 **MAFS.MD.3.5** **MAFS.3.MD.3.5a**/b MAFS.3.MD.3.6 SC.3.P.10.1 SC.3.P.10.2
Wednesday (4-22)	Math: • Lesson 11.4- Understand Area Page 445-448 Science: • "Clean Energy" ReadWorks passage and questions	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 **MAFS.MD.3.5** **MAFS.3.MD.3.5a**/b MAFS.3.MD.3.6 SC.3.P.10.1 SC.3.P.10.2
Thursday (4-23)	Math: • Lesson 11.4- Understand Area Standard Practice Page P221-P222 Science: • "Clean Energy" ReadWorks passage and questions	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 **MAFS.MD.3.5** **MAFS.3.MD.3.5a**/b MAFS.3.MD.3.6 SC.3.P.10.1 SC.3.P.10.2
Friday (4-24)	Math: • Standard Practice MD.3.5a Page 71-72 Science: • "Clean Energy" ReadWorks passage and questions	**MAFS.3.MD.4.8** MAFS.3.NBT.1.2 **MAFS.MD.3.5** **MAFS.3.MD.3.5a**/b MAFS.3.MD.3.6 SC.3.P.10.1 SC.3.P.10.2

Clean Energy

Power From the Sun and Wind

Learn about Earth-friendly energy

What do people need to light their homes and drive cars? Energy! It gives power to many things we need and use.

Most of the energy people use comes from coal, oil, and gas. They are called fossil fuels. Those fuels come from fossils under the ground. Fossils are the remains of plants and animals that lived long ago.

Burning fossil fuels pollutes the air. The air becomes dirty. That can be harmful to people, animals, and plants.

Now more people are using clean energy. Such energy does not pollute the air. Two kinds of clean energy are wind power and solar power. *Solar* means "from the sun."

Solar Power

Construction Photography/Corbis

The sun gives Earth heat and light. Some homes have solar panels on the roof. The panels collect sunlight and turn it into **electricity.** That is a kind of energy. It lets people do many things. For example, we use electricity to light our homes and watch television. Solar power can also be used to warm up the water in our homes.

WENN/Newscom

The Antro Solo is a solar-powered car.

Wind Power

People can turn wind energy into electricity. Wind turbines are machines that spin when the wind blows. They make electricity.

Raimund Koch/Corbis

Wind turbines are often as tall as 20-story buildings. The blades can be more than 100 feet long.

Wind turbines are grouped together in wind farms. Some wind farms have hundreds of wind turbines. The Roscoe Wind Farm in Texas has 627 turbines. They can power 230,000 homes.

Name: _____ **Date:** _____

1. According to the text, where does most of the energy that people use come from?

    A. the wind

    B. plants

    C. fossil fuels

    D. the sun

2. Based on the text's description, what are two examples of clean energy?

    A. solar power and electricity

    B. wind power and solar power

    C. fossil fuels and wind power

    D. electricity and fossil fuels

3. Burning fossil fuels pollutes the air, which can be harmful to people, animals, and plants. Clean energy does not pollute the air.

Based on this evidence, what can you conclude about clean energy?

    A. Clean energy is probably better for the health of people, animals, and plants than fossil fuels.

    B. Clean energy is probably more dangerous to people, animals, and plants, than burning fossil fuels.

    C. Clean energy is probably worse for the air, but better for the health of people, animals, and plants than fossil fuels.

    D. Clean energy is probably better for the air, but worse for people, animals, and plants than fossil fuels.

4. What is most likely a main goal of using clean energy?

    A. to replace the sun and wind with man-made energy sources

    B. to remove pollution from the air as quickly as possible

    C. to stop destroying fossils from long ago

    D. to create electricity without creating pollution

5. What is the main idea of this passage?

 A. More people are using clean energy like solar power and wind power, which does not pollute the air.

 B. Clean energy is mainly used to create electricity, which people can use to power their homes.

 C. Fossil fuels like coal, oil, and gas, come from the remains of plants and animals that lived long ago.

 D. Most of the energy people use comes from burning fossil fuels, which pollutes the air.

6. Read these sentences from the text.

"Burning fossil fuels pollutes the air. The air becomes dirty. That can be harmful to people, animals, and plants."

Based on these sentences, what does the word "pollute" mean?

 A. to make something clean

 B. to make something cheaper

 C. to make something dirty

 D. to make something dangerous

7. Choose the answer that best completes the sentence.

Most of the energy people use comes from coal, oil, and gas. _____, now more people are using clean energy.

 A. However

 B. As a result

 C. At first

 D. For example

8. What does burning fossil fuels do to the air?

_____

_____

_____

9. Why are types of energy like solar power and wind power called "clean" energy? Use details from the text to support your answer.

_____

_____

_____

10. Why might more and more people be using clean energy instead of fossil fuels? Use evidence from the text to support your answer.

_____

_____

_____

Name _____

Find Unknown Side Lengths

Essential Question How can you find the unknown length of a side in a plane shape when you know its perimeter?

UNLOCK the Problem REAL WORLD

Chen has 27 feet of fencing to put around his garden. He has already used the lengths of fencing shown. How much fencing does he have left for the last side?

3 ft   7 ft
5 ft   4 ft
n ft
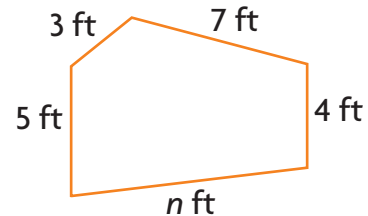
Find the unknown side length.

Write an equation for the perimeter.

$5 + 3 + \underline{\quad} + \underline{\quad} + n = 27$

Think: If I knew the value of *n*, I would add all the side lengths to find the perimeter.

$5 + 3 + 7 + 4 + n = 27$

Add the lengths of the sides you know.

$\underline{\quad} + n = 27$

Think: Addition and subtraction are inverse operations.

Write a related equation.

$n = 27 - 19$

So, Chen has _____ feet of fencing left.

$\underline{\quad} = 27 - 19$

Math Idea
A symbol or letter can stand for an unknown side length.

Try This!

The perimeter of the shape is 24 meters. Find the unknown side length.

$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + w = \underline{\quad}$

$\underline{\quad} + w = \underline{\quad}$

$w = \underline{\quad} - \underline{\quad}$

$\underline{\quad} = \underline{\quad} - \underline{\quad}$

2 m
6 m   7 m
w m
1 m   5 m
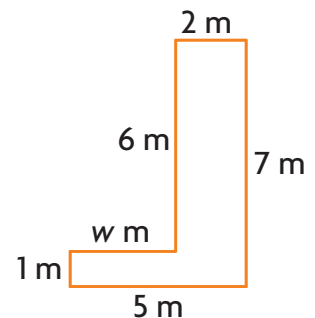
So, the unknown side length is _____ meters long.

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🔑 Example Find unknown side lengths of a rectangle.

Lauren has a rectangular blanket. The perimeter is 28 feet. The width of the blanket is 5 feet. What is the length of the blanket?

Hint: A rectangle has two pairs of opposite sides that are equal in length.

You can predict the length and add to find the perimeter. If the perimeter is 28 feet, then that is the correct length.

5 ft

l ft l ft

5 ft
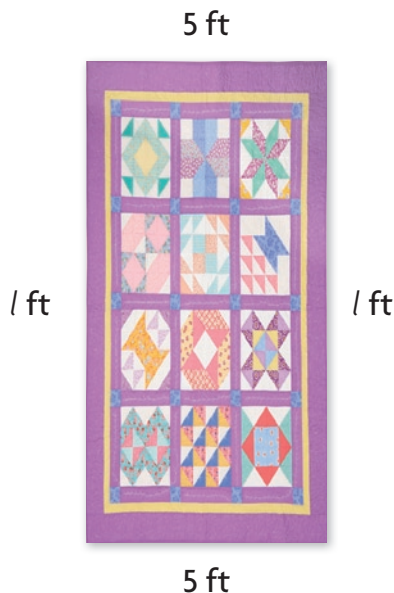
Predict	Check	Does it check?
$l = 7$	5 + ____ + 5 + ____ = ____	**Think:** Perimeter is not 28 feet, so the length does not check.
$l = 8$	5 + ____ + 5 + ____ = ____	**Think:** Perimeter is not 28 feet, so the length does not check.
$l = 9$	5 + ____ + 5 + ____ = ____	**Think:** Perimeter is 28 feet, so the length is correct. ✓

So, the length of the blanket is _____ feet.

Try This! Find unknown side lengths of a square.

The square has a perimeter of 20 inches. What is the length of each side of the square?

Think: A square has four sides that are equal in length.

s in.

s in. s in.

s in.

You can multiply to find the perimeter.

- Write a multiplication equation for the perimeter. $4 \times s = 20$

- Use a multiplication fact you know to solve. $4 \times$ _____ $= 20$
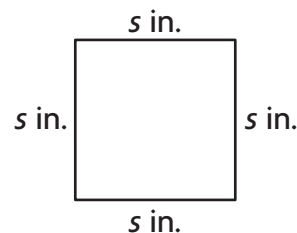
So, the length of each side of the square is _____ inches.

Share and Show MATH BOARD ....

Find the unknown side lengths.

1. Perimeter = 25 centimeters

$$9 + \underline{\quad} + \underline{\quad} + n = 25$$

$$\underline{\quad} + n = 25$$

$$\underline{\quad} = \underline{\quad} - \underline{\quad}$$

9 cm

n cm   6 cm
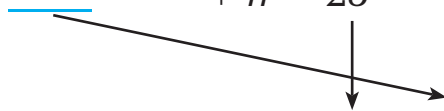
3 cm
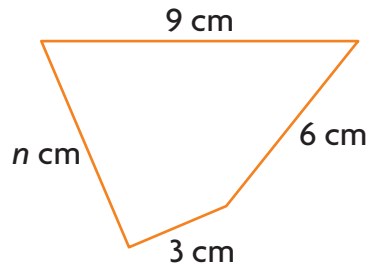
_____ centimeters

✓ 2. Perimeter = 34 meters

j m

7 m   7 m

j m
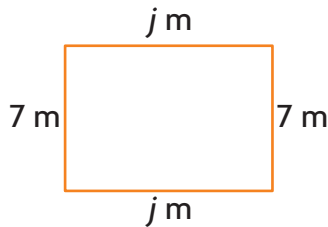
_____ meters

✓ 3. Perimeter = 12 feet

r ft

r ft r ft

r ft
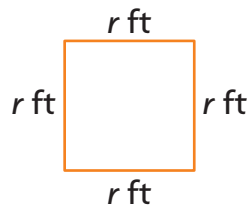
_____ feet

On Your Own ....

Find the unknown side lengths.

4. Perimeter = 32 centimeters

10 cm

3 cm

6 cm

k cm

8 cm

_____ centimeters

5. Perimeter = 8 meters

b m

b m b m

b m
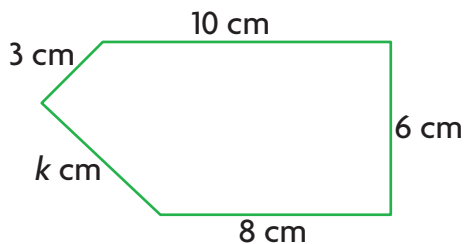
_____ meters

6. Perimeter = 16 inches

6 in.

n in. n in.

6 in.

_____ inches

7. **H.O.T.** Perimeter = 42 feet
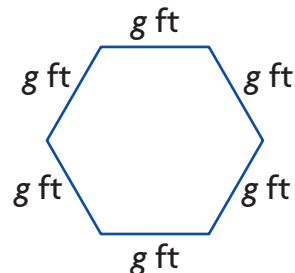
g ft

g ft g ft

g ft g ft

g ft

_____ feet

🔑 UNLOCK the Problem   REAL WORLD

8. Latesha wants to make a border with ribbon around a shape she made and sketched at the right. She will use 44 centimeters of ribbon for the border. What is the unknown side length?

3 cm

8 cm

13 cm

6 cm

5 cm

h cm
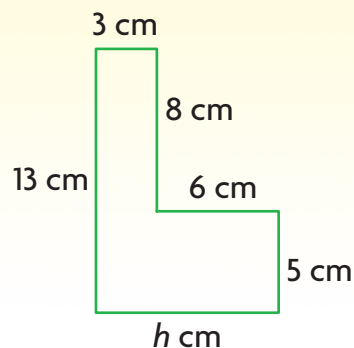
(A) 3 centimeters   (C) 9 centimeters

(B) 6 centimeters   (D) 13 centimeters

a. What do you need to find? _____

b. How will you use what you know about perimeter to help you

solve the problem? _____

_____

c. Write an equation to solve the problem.

d. Complete the sentences.

The perimeter is _____ centimeters.

The sum of the sides I know is _____ centimeters.

A related subtraction equation is _____ = _____ − _____.

So, the unknown side length is _____ centimeters.

e. Fill in the bubble for the correct answer choice above.

9. A rectangle has a perimeter of 34 inches. The left side is 6 inches long. What is the length of the top side?

(A)   6 inches

(B) 11 inches

(C) 28 inches

(D) 40 inches

10. Eleni wants to put up a fence around her square garden. The garden has a perimeter of 28 meters. How long will each side of the fence be?

a m

a m

a m

a m
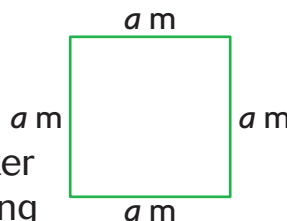
(A) 6 meters   (C) 8 meters

(B) 7 meters   (D) 14 meters

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FOR MORE PRACTICE:
Standards Practice Book, pp. P219–P220

Find Unknown Side Lengths

COMMON CORE STANDARD MACC.3.MD.4.8
Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Find the unknown side lengths.

1. Perimeter = 33 centimeters

5 cm
x
8 cm
4 cm
7 cm
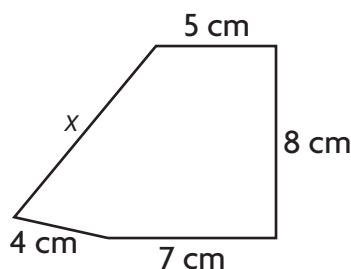
$5 + 8 + 7 + 4 + x = 33$
$24 + x = 33$
$x = 9$

$x =$ __**9**__ centimeters

2. Perimeter = 14 feet

4 ft
r r
4 ft
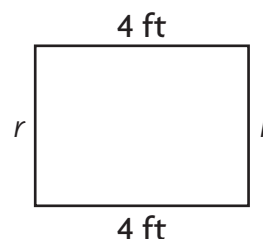
$r =$ _____ feet

3. Perimeter = 37 meters

8 m
11 m
5 m
s
2 m
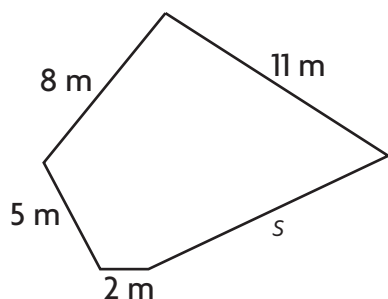
$s =$ _____ meters

4. Perimeter = 92 inches

7 in.   23 in.   12 in.
t
12 in.
23 in.
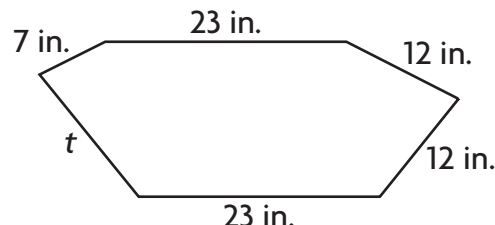
$t =$ _____ inches

Problem Solving REAL WORLD

5. Steven has a rectangular rug with a perimeter of 16 feet. The width of the rug is 5 feet. What is the length of the rug?

_____

6. Kerstin has a square tile. The perimeter of the tile is 32 inches. What is the length of each side of the tile?

_____

Lesson Check (MACC.3.MD.4.8)

1. Jesse is putting a ribbon around a square frame. He uses 24 inches of ribbon. How long is each side of the frame?

- (A) 4 inches
- (B) 5 inches
- (C) 6 inches
- (D) 8 inches

2. Davia draws a shape with 5 sides. Two sides are each 5 inches long. Two other sides are each 4 inches long. The perimeter of the shape is 27 inches. What is the length of the fifth side?

- (A) 9 inches
- (C) 14 inches
- (B) 13 inches
- (D) 18 inches

Spiral Review (MACC.3.OA.1.1, MACC.3.OA.4.8, MACC.3.NF.1.3c, MACC.3.MD.1.1)

3. Which of the following represents $7 + 7 + 7 + 7$? (Lesson 3.2)

- (A) 4×4
- (B) 4×7
- (C) 6×7
- (D) 7×7

4. Bob bought 3 packs of model cars. He gave 4 cars to Ann. Bob has 11 cars left. How many model cars were in each pack? (Lesson 7.10)

- (A) 18
- (C) 7
- (B) 11
- (D) 5

5. Randy looked at his watch when he started and finished reading. How long did Randy read? (Lesson 10.3)

Start   **End**

- (A) 55 minutes
- (C) 35 minutes
- (B) 45 minutes
- (D) 15 minutes

6. Which statement does the model represent? (Lesson 8.6)
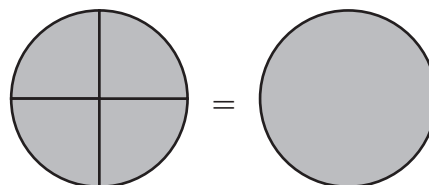
- (A) $\frac{4}{4} = 1$
- (C) $\frac{2}{4} = 1$
- (B) $\frac{3}{4} = 1$
- (D) $\frac{1}{4} = 1$

Understand Area

Essential Question How is finding the area of a shape different from finding the perimeter of a shape?

🔑 UNLOCK the Problem REAL WORLD

CONNECT You learned that perimeter is the measure around a shape. It is measured in linear units, or units that are used to measure the distance between two points.

Area is the measure of the number of unit squares needed to cover a flat surface. A **unit square** is a square with a side length of 1 unit. It has an area of 1 **square unit (sq un)**.

Unit Square

1 unit

1 unit   1 unit

1 unit

Perimeter

Area

1 unit + 1 unit + 1 unit + 1 unit = 4 units
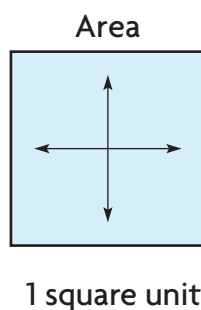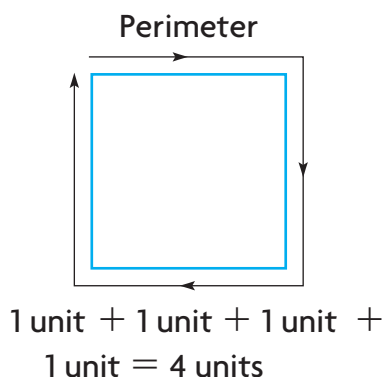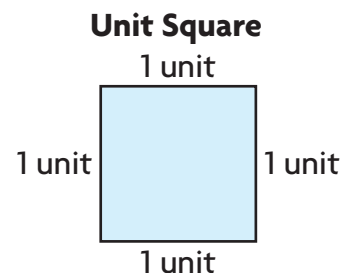
1 square unit

Math Idea
You can count the number of units on each side of a shape to find its perimeter. You can count the number of unit squares inside a shape to find its area in square units.

🔑 Activity Materials ■ geoboard ■ rubber bands

Ⓐ Use your geoboard to form a shape made from 2 unit squares. Record the shape on this dot paper.

. . . . .

. . . . .

. . . . .

. . . . .

. . . . .
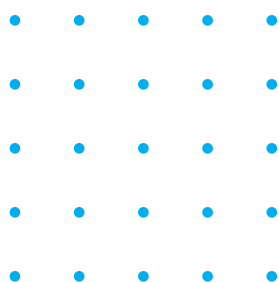
What is the area of this shape?

Area = _____ square units

Ⓑ Change the rubber band so that the shape is made from 3 unit squares. Record the shape on this dot paper.

. . . . .

. . . . .

. . . . .

. . . . .

. . . . .
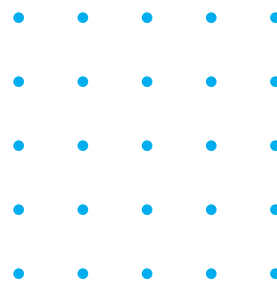
What is the area of this shape?

Area = _____ square units

MATHEMATICAL PRACTICES

Math Talk For B, did your shape look like your classmate's shape? **Explain.**

Try This! Draw three different shapes that are each made from 4 **unit squares. Find the area of the shape.**
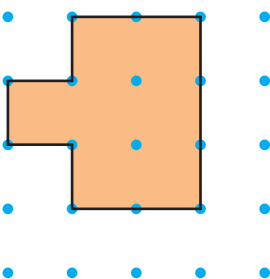
Shape 1
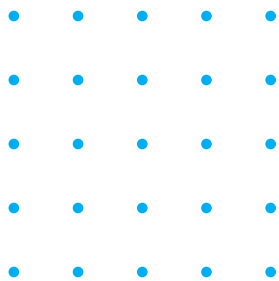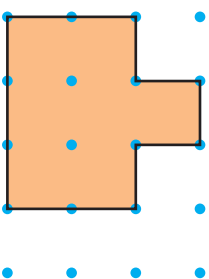
Area = _____ square units

Shape 2
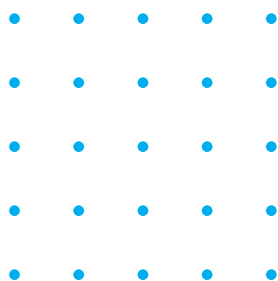
Area = _____ square units

Shape 3
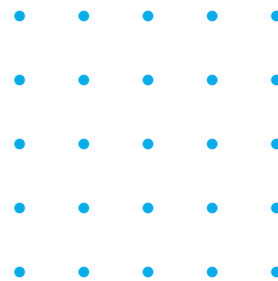
Area = _____ square units

- How are the shapes the same? How are the shapes different?

_____

Share and Show [MATH BOARD] . . . .

1. Shade each unit square in the shape shown.
   Count the unit squares to find the area.

   Area = _____ square units
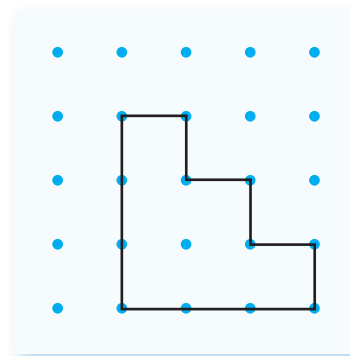
Count to find the area of the shape.
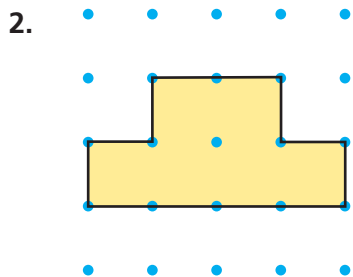
2.

Area = _____ square units

3.

Area = _____ square units

✓4.
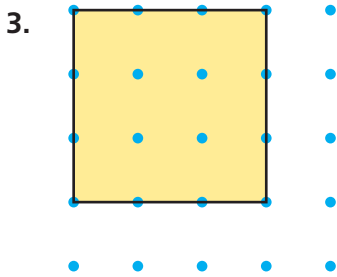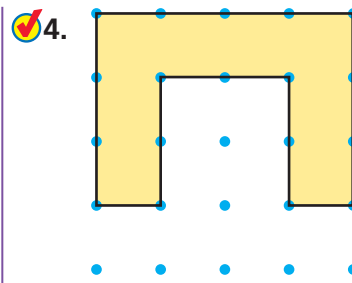
Area = _____ square units

Write *area* or *perimeter* for the situation.

5. buying a rug for a room

_____

✓6. putting a fence around a garden

_____

MATHEMATICAL PRACTICES

[Math Talk] What are other situations where you need to find area?

Name _____

On Your Own ·
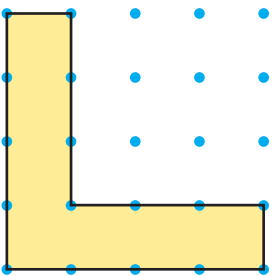
Count to find the area of the shape.

7.

Area = _____ square units

8.
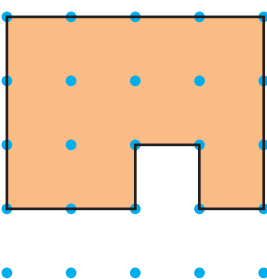
Area = _____ square units

9.

Area = _____ square units

10.
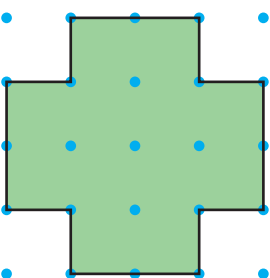
Area = _____ square units

11.
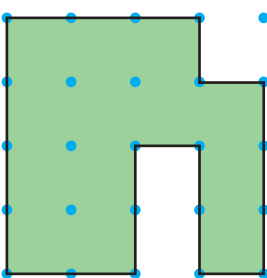
Area = _____ square units

12.
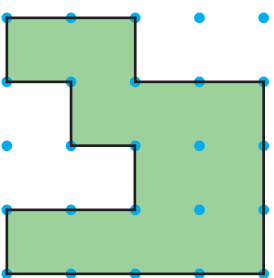
Area = _____ square units

13.

Area = _____ square units

14.

Area = _____ square units

15.

Area = _____ square units

Write *area* or *perimeter* for the situation.

16. painting a wall

_____

17. covering a patio with tiles

_____

18. putting a wallpaper border around a room

_____

19. gluing a ribbon around a picture frame

_____

Problem Solving REAL WORLD

Billy is building an enclosure for his small dog, Eli. Use the diagram for 20–22.

Eli's Enclosure

20. Billy will put fencing around the outside of the enclosure. How much fencing does he need for the enclosure?

_____

21. Billy will use sod to cover the ground in the enclosure. How much sod does Billy need?

_____

22. Write Math ▶ **Explain** how the perimeter and the area of the enclosure are different.

_____

_____

23. H.O.T. Draw two different shapes, each with an area of 10 square units.
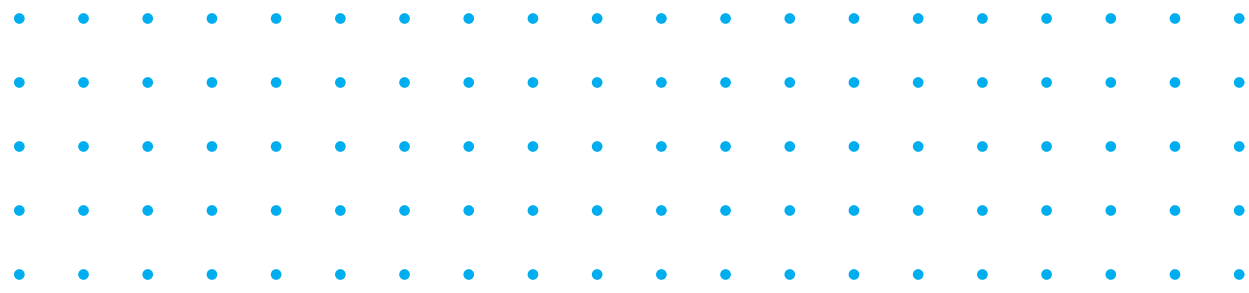
24. Test Prep What is the area of the shape at the right?

Ⓐ   6 square units

Ⓑ 21 square units

Ⓒ 24 square units

Ⓓ 36 square units

448

Name _____

Understand Area

Count to find the area for the shape.

1.
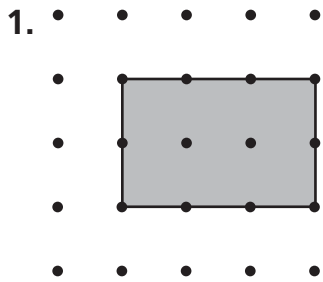
Area = **6** square units
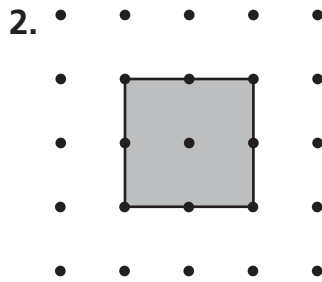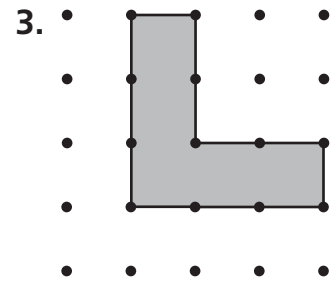
2.

Area = _____ square units

3.

Area = _____ square units

4.

Area = _____ square units

5.

Area = _____ square units

6.
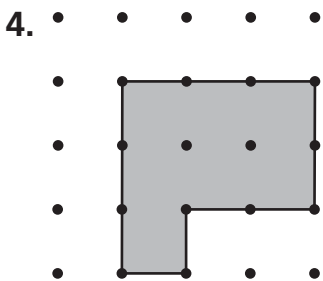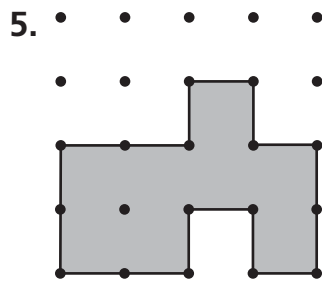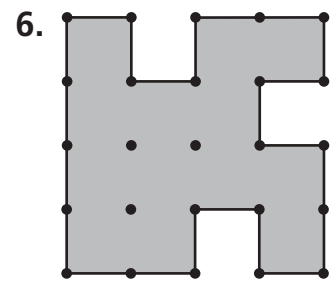
Area = _____ square units

Write *area* or *perimeter* for each situation.
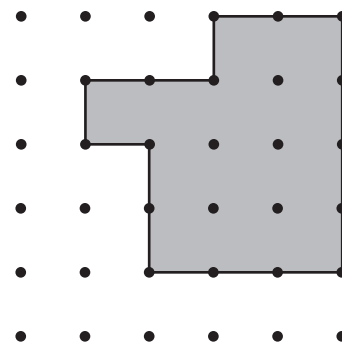
7. carpeting a floor

8. fencing a garden

_____   _____

Problem Solving REAL WORLD

Use the diagram for 9–10.

9. Roberto is building a platform for his model railroad. What is the area of the platform?

_____

10. Roberto will put a border around the edges of the platform. How much border will he need?
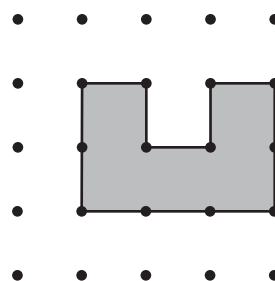
_____

Lesson Check (MACC.3.MD.3.5, MACC.3.MD.3.5a)

1. Josh used rubber bands to make the shape below on his geoboard. What is the area of the shape?
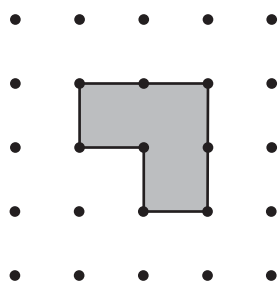
- (A) 3 square units
- (B) 4 square units
- (C) 5 square units
- (D) 6 square units

2. Wilma drew the shape below on dot paper. What is the area of the shape she drew?

- (A) 4 square units
- (B) 5 square units
- (C) 6 square units
- (D) 7 square units

Spiral Review (MACC.3.OA.3.7, MACC.3.NF.1.1, MACC.3.MD.1.1, MACC.3.MD.1.2)

3. Leonardo knows it is 42 days until summer break. How many weeks is it until Leonardo's summer break? (Hint: There are 7 days in a week.) (Lesson 7.7)

- (A) 5 weeks
- (C) 7 weeks
- (B) 6 weeks
- (D) 8 weeks

4. Nan cut a submarine sandwich into 4 equal parts and ate one part. What fraction represents the part of the sandwich Nan ate? (Lesson 8.3)

- (A) $\frac{1}{4}$
- (C) $\frac{4}{4}$
- (B) $\frac{1}{3}$
- (D) $\frac{4}{1}$

5. Wanda is eating breakfast. Which is a reasonable time for Wanda to be eating breakfast? (Lesson 10.2)

- (A) 7:45 A.M.
- (B) 7:45 P.M.
- (C) 2:15 A.M.
- (D) 2:15 P.M.

6. Dick has 2 bags of dog food. Each bag contains 5 kilograms of food. How many kilograms of food does Dick have in all? (Lesson 10.8)

- (A) 3 kilograms
- (C) 7 kilograms
- (B) 5 kilograms
- (D) 10 kilograms

MACC.3.MD.3.5a Recognize and understand concepts of area measurement. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
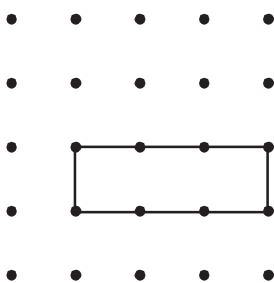
1. Look at the square.

What is the name of a square unit that has sides measuring 1 inch?

A 1 inch

B 4 units

C 1 square inch

D 1 square foot

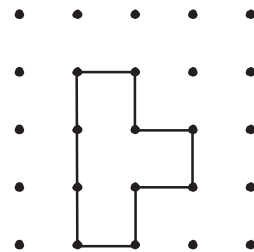**2.** Look at the plane figure on the geoboard.

How many square units cover the plane figure?

A 1

B 3

C 6

D 8

3. What is the measure of the number of unit squares needed to cover a flat surface—*area* or *perimeter*?

4. Look at the plane figure on the geoboard.

How many square units cover the plane figure?

A 10 square units

B 8 square units

C 4 square units

D 1 square unit

5. Look at the square.

What is the name of a square unit that has sides measuring 1 centimeter?

A 1 centimeter

B 1 inch

C 1 square inch

D 1 square centimeter

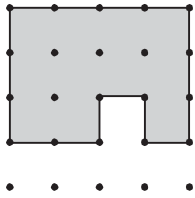**6.** A unit square is a square with a side length of _____.

7. Look at the square.
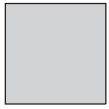
What is the name of a square unit that has sides measuring **1** foot?

A 1 square foot

B 1 square inch

C 1 foot

D 1 inch

8. Sam made this plane figure on the geoboard. Each square is 1 square unit.

How many square units cover the plane figure?

A 12 square units

B 11 square units

C 10 square units

D 1 square unit

9. Kim made this plane figure on the geoboard. Each square unit is **1** square foot.
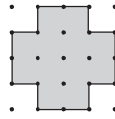
How many square feet cover the plane figure?

A 10 square feet

B 11 square feet

C 12 square feet

D 13 square feet

10. If each square unit is **1** square meter, then how many square meters cover the plane figure?
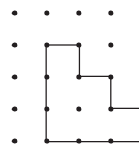
A 5 square meters

B 6 square meters

C 8 square meters

D 9 square meters

11. Draw a figure that has an area of 10 square units.

_____

3rd Grade
Week 3
Math/Science Work
Week of: April 27-May 1

Date:	Work:	Standards:
Monday (4-27)	Math: • Lesson 11.5- Measure Area Pages 449-452 Science: • "Light Bounces" ReadWorks passage and questions • Watch BrainPOP Jr. on "Light"	**MAFS.3.MD.3.5b** **MAFS.3.MD.3.6** MAFS.3.MD.3.5/a **MAFS.3.MD.3.7a** **MAFS.3.MD.3.7** MAFS.3.OA.1.3 MAFS.3.OA.3.7 MAFS.3.NBT.1.2 SC.3.P.10.3 SC.3.P.10.4
Tuesday (4-28)	Math: • Lesson 11.5- Measure Area Standard Practice Pages P223-224 Science: • "Light Bounces" ReadWorks passage and questions • Watch BrainPOP Jr. on "Light"	**MAFS.3.MD.3.5b** **MAFS.3.MD.3.6** MAFS.3.MD.3.5/a **MAFS.3.MD.3.7a** **MAFS.3.MD.3.7** MAFS.3.OA.1.3 MAFS.3.OA.3.7 MAFS.3.NBT.1.2 SC.3.P.10.3 SC.3.P.10.4
Wednesday (4-29)	Math: • Lesson 11.6- Use Area Models Pages 453-456 Science: • "Light Bounces" ReadWorks passage and questions • Watch BrainPOP Jr. on "Light"	**MAFS.3.MD.3.5b** **MAFS.3.MD.3.6** MAFS.3.MD.3.5/a **MAFS.3.MD.3.7a** **MAFS.3.MD.3.7** MAFS.3.OA.1.3 MAFS.3.OA.3.7 MAFS.3.NBT.1.2 SC.3.P.10.3 SC.3.P.10.4
Thursday (4-30)	Math: • Lesson 11.6- Use Area Models Standard Practice Pages P225-226 Science: • "Light Bounces" ReadWorks passage and questions • Watch BrainPOP Jr. on "Light"	**MAFS.3.MD.3.5b** **MAFS.3.MD.3.6** MAFS.3.MD.3.5/a **MAFS.3.MD.3.7a** **MAFS.3.MD.3.7** MAFS.3.OA.1.3 MAFS.3.OA.3.7 MAFS.3.NBT.1.2 SC.3.P.10.3 SC.3.P.10.4
Friday (5-1)	Math: • Standard Practice MD.3.6 Page 75-76 Science: • "Light Bounces" ReadWorks passage and questions • Watch BrainPOP Jr. on "Light"	**MAFS.3.MD.3.5b** **MAFS.3.MD.3.6** MAFS.3.MD.3.5/a **MAFS.3.MD.3.7a** **MAFS.3.MD.3.7** MAFS.3.OA.1.3 MAFS.3.OA.3.7 MAFS.3.NBT.1.2 SC.3.P.10.3 SC.3.P.10.4

Light Bounces!

by ReadWorks

Take a look around. What do you see? All of the objects that surround you-a book, a plant, a pen, a door and even your own body-can only be seen thanks to light. Light is a type of energy that helps us see the world we live in. When it's completely dark, it is impossible to see anything. Light comes from different places. The sun, stars, lightning and fire all give off light. So do light bulbs, flashlights and candles. Most living things need light in order to survive.

Some objects produce their own light, but most do not. The walls in the room you are in do not give off their own light. The light coming down from the ceiling lights above your head bounces right off the walls. If it didn't, we would not be able to see the walls at all. How do we see things? When light from any source bounces off an object and into our eyes, we are able

to see that object. Take a look at your pencil. You can see the pencil because light is bouncing off it and entering your eyes. This "bouncing off" is called "reflection."

Transparent, or see-through, objects let the light pass right through them. Light can shine through glass and clear plastic. It can also move through water and air. When light travels, it travels in a straight line.

Some objects block the light, like trees, buildings, and even you! When an object blocks the light, light cannot pass through to the other side. This is how shadows are made. When the sun shines on a tree, it cannot shine right through the tree. The tree blocks the light beams. On the other side of the tree, you will see a dark spot that is shaped like the tree. That is its shadow, the place where the sun cannot reach.

Try standing in front of a wall that is all lit up by a flashlight. Your body does not allow light to pass through it, so it will create a shadow on the wall. You can use all kinds of objects to block the light and make shadows. Try forks and spoons from your kitchen, your shoes or a stuffed animal. Try moving your body or one of these objects around to change the shape of the shadow! The closer the object moves to the flashlight, the bigger and fuzzier its shadow will be. The further the object moves away from the flashlight, the smaller and sharper its shadow will be.

Using a mirror, you can take light from one place and make it travel to another. Point your flashlight at the mirror. Now tilt the mirror. By moving the mirror around, you can make the light beam bounce off its shiny surface and fall on different objects in the room. Have you ever wondered why you can see your own face in a mirror? Light shines on your face, then bounces off it and hits the mirror you are looking into. Then, the light bounces, or reflects, off the mirror and right into your eyes.

Light bounces around! If it didn't, we'd be left in the dark.

Name: _____ **Date:** _____

1. What important kind of energy helps us to see the world that we live in?

    A. chemical energy

    B. light energy

    C. heat energy

    D. potential energy

2. What does the author mainly describe in the passage?

    A. how electricity helps to power our light bulbs

    B. how the movement of light helps us to view objects

    C. how some objects produce their own light

    D. how the energy of light helps plants to grow

3. Read the following sentences: "When the sun shines on a tree, it cannot shine right through the tree. The tree blocks the light beams. On the other side of the tree, you will see a dark spot that is shaped like the tree. That is its shadow, the place where the sun cannot reach."

Based on this evidence, what conclusion can be made?

    A. When an object blocks the light, light can pass through to the other side.

    B. When an object blocks the light, light cannot pass through to the other side.

    C. Sunlight has the ability to pass directly through trees.

    D. The dark spots behind the trees are places where other trees can't grow.

4. Read the following sentences: "Try standing in front of a wall that is all lit up by a flashlight. Your body does not allow light to pass through it, so it will create a shadow on the wall. You can use all kinds of objects to block the light and make shadows. The closer the object moves to the flashlight, the bigger and fuzzier its shadow will be. The further the object moves away from the flashlight, the smaller and sharper its shadow will be.

Based on this evidence, what will you see if you shine a flashlight on a wall, then place a fork very close to the flashlight?

    A. a big and fuzzy shadow shaped like a fork

    B. a small and sharp shadow shaped like a fork

    C. a big and fuzzy shadow shaped like a flashlight

    D. a small and sharp shadow shaped like a flashlight

5. What is this passage *mostly* about?

    A. the way flashlights work

    B. the way our eyes work

    C. the way light moves

    D. the way trees grow

6. Read the following sentences: "**Transparent**, or see-through, objects let the light pass right through them. Light can shine through glass and clear plastic."

As used in the passage, "**transparent**" can be understood to have the same meaning as what word?

    A. objects

    B. pass

    C. shine

    D. clear

7. Choose the answer that best completes the sentence below.

We are able to see objects _____ when light moves, it bounces off of the objects and into our eyes.

    A. until

    B. because

    C. thus

    D. even

8. What is created when the movement of light is blocked by an object and cannot pass through to the other side?

_____

_____

_____

9. Why can you see your own face in a mirror?

_____

_____

_____

10. At the end of the passage, the author writes, "Light bounces around! If it didn't, we'd be left in the dark." What does the author mean by this?

_____

_____

_____

Measure Area

Essential Question How can you find the area of a plane shape?

🔑 UNLOCK the Problem

Jaime is measuring the area of the rectangles with 1-inch square tiles.

1 square inch

Activity 1 Materials ■ 1-inch grid paper ■ scissors

Cut out eight 1-inch squares. Use the dashed lines as guides to place tiles for *A–C*.

A Place 4 tiles on Rectangle *A*.

• Are there any gaps? _____

• Are there any overlaps? _____

• Jaime says that the area is 4 square inches. Is Jaime's measurement correct? _____

So, when you measure area, there can be no space between the tiles, or no gaps.

B Place 8 tiles on Rectangle *B*.

• Are there any gaps? _____

• Are there any overlaps? _____

• Jaime says that the area is 8 square inches. Is Jaime's measurement correct? _____

So, when you measure the area, the tiles cannot overlap.

C Place 6 tiles on Rectangle *C*.

• Are there any gaps? _____

• Are there any overlaps? _____

• Jaime says that the area is 6 square inches. Is Jaime's measurement correct? _____

So, the area of the rectangles is

_____ square inches.
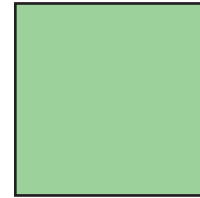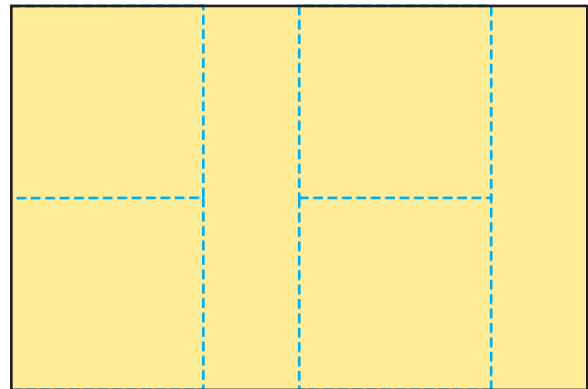
Rectangle A

Rectangle B
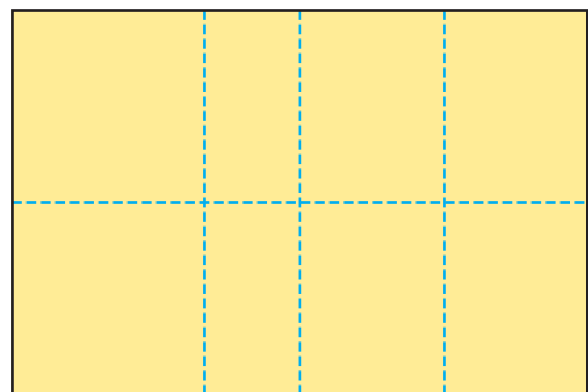
Rectangle C
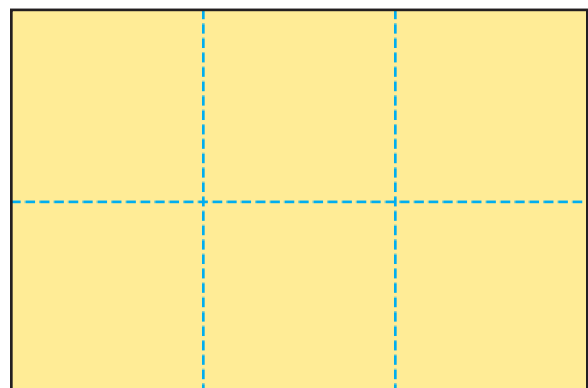
🔒 Activity 2 Materials ■ green and blue paper ■ scissors
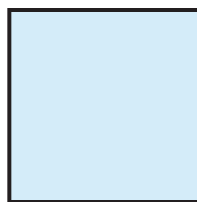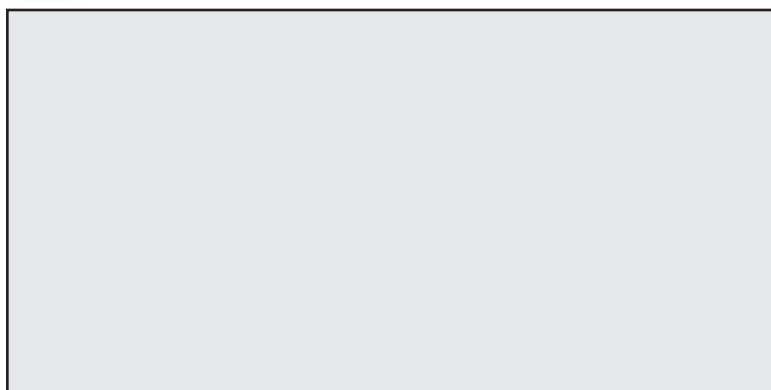
ERROR Alert
Be sure that there are no gaps or overlaps when you use square tiles to find area.

STEP 1 Estimate the number of blue square tiles it will take to cover the gray shape.   _____ blue square tiles

STEP 2 Estimate the number of green tiles it will take to cover the gray shape.   _____ green square tiles

STEP 3 Trace the blue square pattern ten times and cut out the squares.

STEP 4 Trace the green square pattern thirty-six times and cut out the squares.

STEP 5 Cover the gray shape with blue square tiles. Count and write the number of blue square tiles you used. Record the area of the shape.   _____ blue square tiles

Area = _____ blue square units

STEP 6 Cover the gray shape with green square tiles. Count and write the number of green square tiles you used. Record the area of the shape.   _____ green square tiles

Area = _____ green square units

MATHEMATICAL PRACTICES

Math Talk **Explain** why the number of green square tiles needed to cover the shape is different than the number of blue square tiles needed.

Try This! Count to find the area of the shape.

☐ is 1 square centimeter.

There are _____ unit squares in the shape.
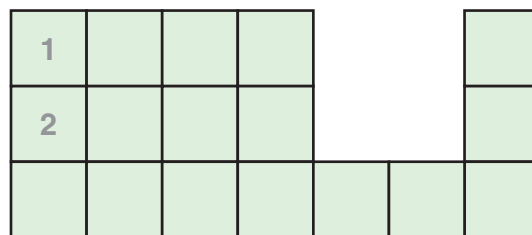
So, the area is _____ square centimeters.

Name _____

Share and Show MATH BOARD ....

1. Count to find the area of the shape. Each unit square is 1 square centimeter.
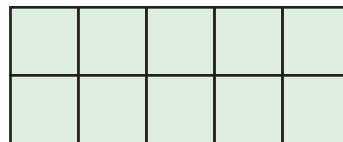
   Think: Are there any gaps? Are there any overlaps?

   There are _____ unit squares in the shape.

   So, the area is _____ square centimeters.

Count to find the area of the shape.
Each unit square is 1 square centimeter.

2.

   Area = _____ square centimeters

3.
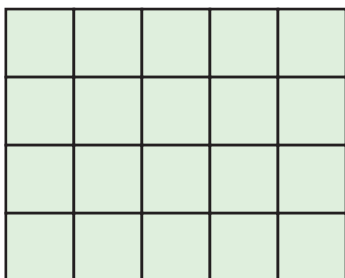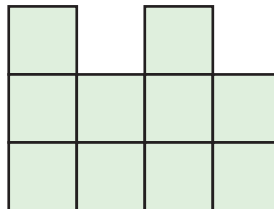
   Area = _____ square centimeters

On Your Own ....

Count to find the area of the shape.
Each unit square is 1 square inch.

4.
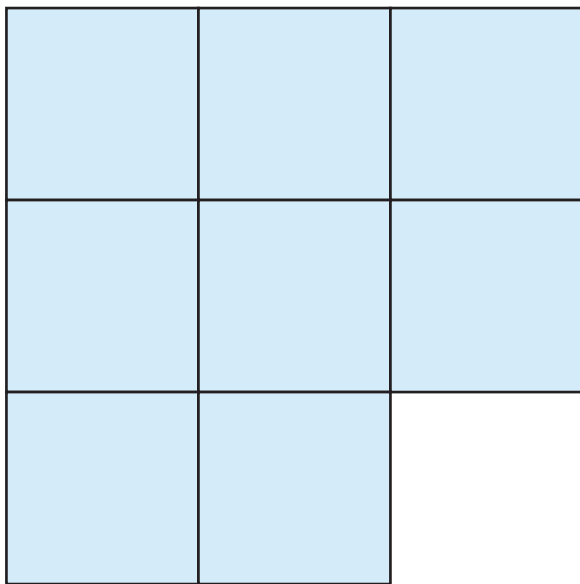
   Area = _____ square inches

5.
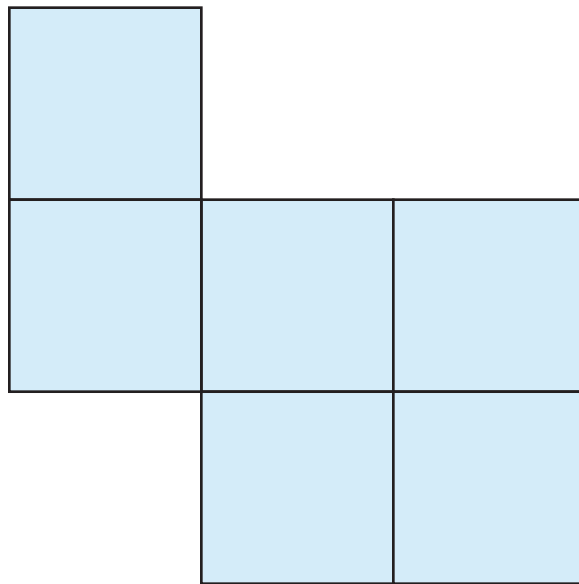
   Area = _____ square inches

Problem Solving REAL WORLD

6. Danny is placing tiles on the floor of an office lobby. Each tile is 1 square meter. The diagram shows the lobby. What is the area of the lobby?

_____
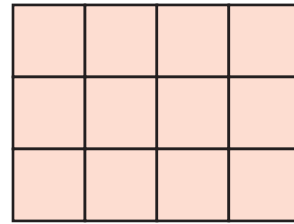
7. Angie is painting a space shuttle mural on a wall. She divides the area into sections that are each one square foot. The diagram shows the mural. What is the area of the mural?

_____
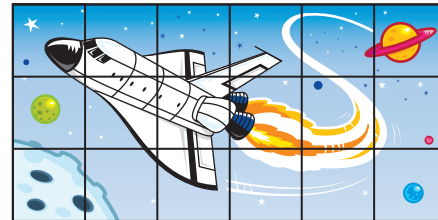
8. **Write Math** ▸ **Sense or Nonsense?** Tom places green square tiles on the shape shown. He says that the shape has an area of 12 square units. Does this make sense? **Explain.**

_____

_____

_____
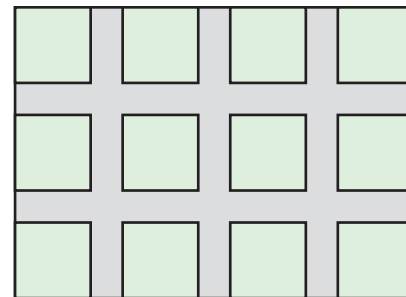
Rectangle A
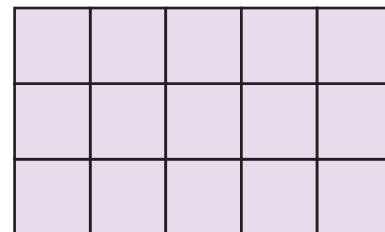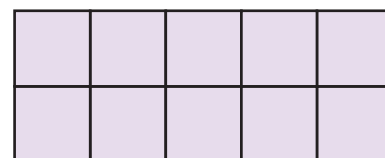
9. **H.O.T.** **Pose a Problem** Write an area problem that can be solved by using Rectangle A and Rectangle B. Then solve your problem.

_____

_____

_____

Rectangle B

10. **Test Prep** What is the area of the shape? Each unit square is 1 square foot.

   (A) 3 square feet   (C) 13 square feet

   (B) 10 square feet   (D) 15 square feet
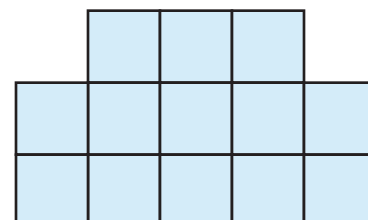
FOR MORE PRACTICE:
Standards Practice Book, pp. P223–P224

Name _____

Measure Area

**Count to find the area of the shape.
Each unit square is 1 square centimeter.**

1.
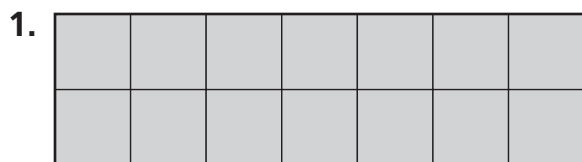
Area = __14__ square centimeters

2.

Area = _____ square centimeters

3.

Area = _____ square centimeters

4.
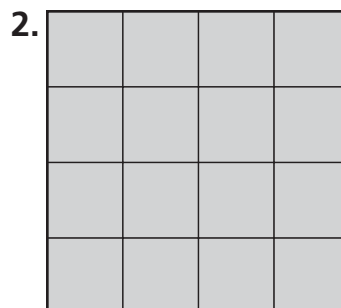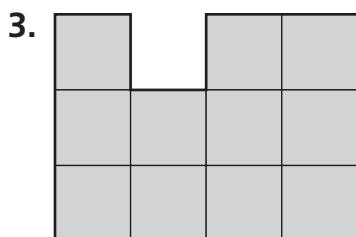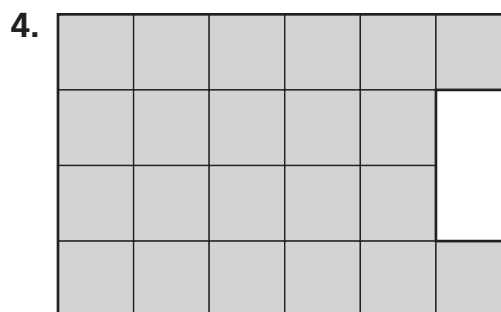
Area = _____ square centimeters

Problem Solving REAL WORLD

Alan is painting his deck gray. Use the diagram at the right for 5–6. Each unit square is 1 square meter.

Alan's Deck

5. What is the area of the deck that Alan has already painted gray?

_____

6. What is the area of the deck that Alan has left to paint?

_____
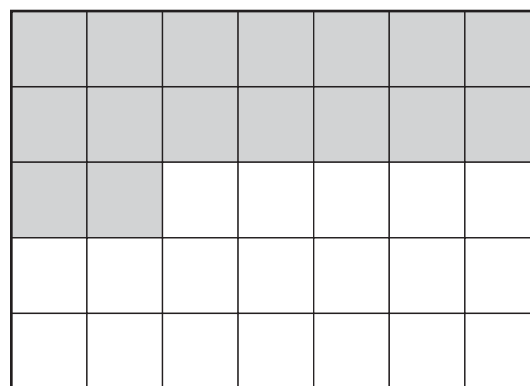
Lesson Check (MACC.3.MD.3.5b, MACC.3.MD.3.6)

Each unit square in the diagram is 1 square foot.
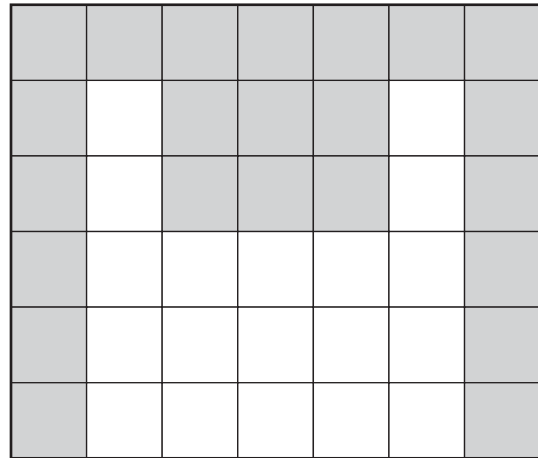
1. How many square feet are shaded?

   Ⓐ 19 square feet

   Ⓑ 21 square feet

   Ⓒ 23 square feet

   Ⓓ 25 square feet

2. What is the area that has NOT been shaded?

   Ⓐ 19 square feet

   Ⓑ 21 square feet

   Ⓒ 23 square feet

   Ⓓ 25 square feet

Spiral Review (MACC.3.OA.1.3, MACC.3.NF.1.1, MACC.3.NF.1.3b, MACC.3.MD.1.2)

3. Sonya buys 6 packages of rolls. There are 6 rolls in each package. How many rolls does Sonya buy? (Lesson 4.3)

   Ⓐ 42   Ⓒ 24

   Ⓑ 36   Ⓓ 12

4. Charlie mixed 6 liters of juice with 2 liters of soda to make fruit punch. How many liters of fruit punch did Charlie make? (Lesson 10.9)

   Ⓐ 3 liters   Ⓒ 8 liters

   Ⓑ 4 liters   Ⓓ 12 liters

5. Which drawing shows $\frac{2}{3}$ of the circle shaded? (Lesson 8.4)

   Ⓐ   Ⓒ

   Ⓑ   Ⓓ

6. Use the models to name a fraction that is equivalent to $\frac{1}{2}$. (Lesson 9.7)

   Ⓐ $\frac{2}{1}$ Ⓒ $\frac{2}{4}$

   Ⓑ $\frac{2}{2}$ Ⓓ $\frac{4}{4}$
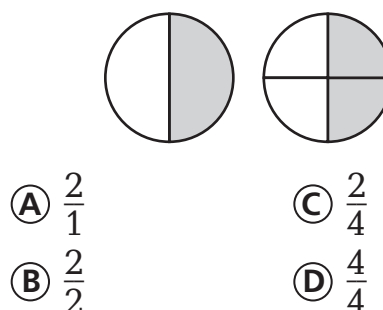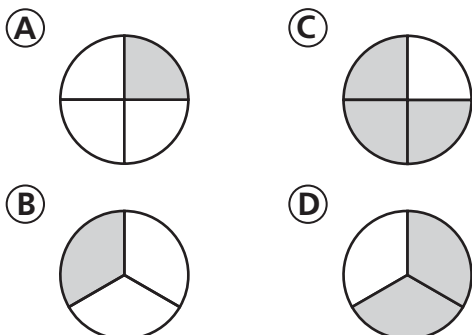
Use Area Models

Essential Question Why can you multiply to find the area of a rectangle?

🔑 UNLOCK the Problem REAL WORLD

Melissa has a garden that is shaped like the rectangle below. Each unit square represents 1 square meter. What is the area of her garden?

• Circle the shape of the garden.

🔑 One Way Count unit squares.

Count the number of unit squares in all.

There are _____ unit squares.

So, the area is _____ square meters.
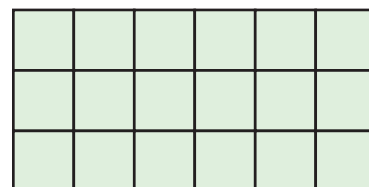
🔑 Other Ways

A **Use repeated addition.**

Count the number of rows. Count the number of unit squares in each row.
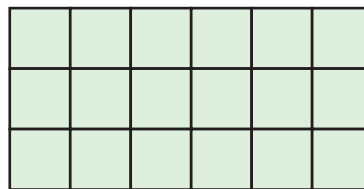
_____ rows of _____ = ▢

Write an addition equation.

So, the area is _____ square meters.

_____ unit squares
_____ unit squares
_____ unit squares

_____ + _____ + _____ = _____

B **Use multiplication.**

Count the number of rows. Count the number of unit squares in each row.

_____ rows of _____ = ▢
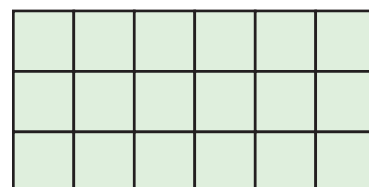
This shape is like an array. How do you find the total number of squares in an array?

_____

Write a multiplication equation.

So, the area is _____ square meters.

_____ unit squares in each row

_____ rows

_____ × _____ = _____

MATHEMATICAL PRACTICES

Math Talk **Explain** when you can use different methods to find the same area.

Try This!

Find the area of the shape.
Each unit square is 1 square foot.

Think: There are 4 rows of 10 unit squares.

_____ × _____ = _____

So, the area is _____ square feet.
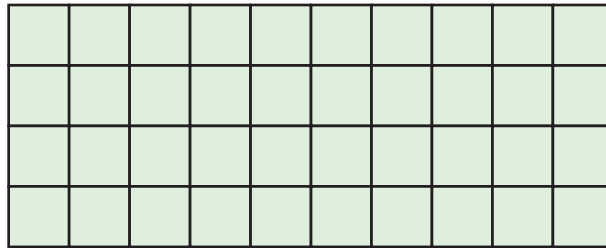
Share and Show 🖊️📝 . . . .

1. Look at the shape.

_____ rows of _____ = ■

Add. _____ + _____ + _____ = _____

Multiply. _____ × _____ = _____

What is the area of the shape?

_____ square units
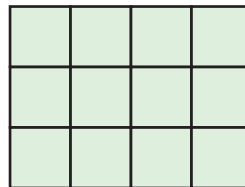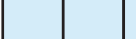
**Find the area of the shape.
Each unit square is 1 square foot.**

2.

_____

✓ **3.**

_____

**Find the area of the shape.
Each unit square is 1 square meter.**

4.

_____

✓ **5.**

_____

On Your Own ·

Find the area of the shape.
Each unit square is 1 square foot.

6.

7.

_____   _____

Find the area of the shape.
Each unit square is 1 square meter.

8.

9.

_____   _____
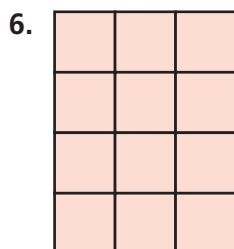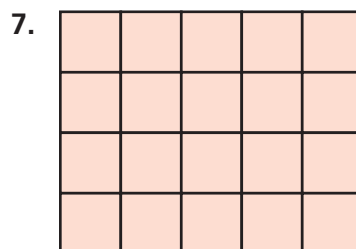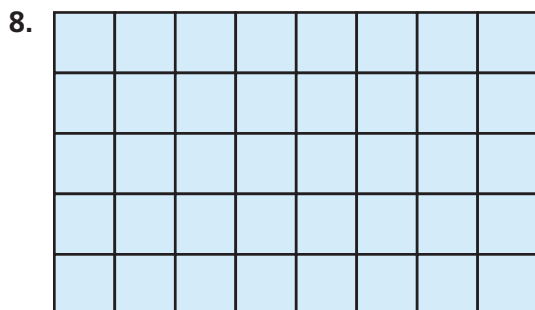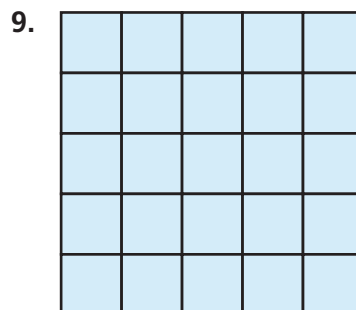
10. **H.O.T.** Draw and shade three rectangles with an
area of 24 square units. Then write an addition
or multiplication equation for each.

_____

_____
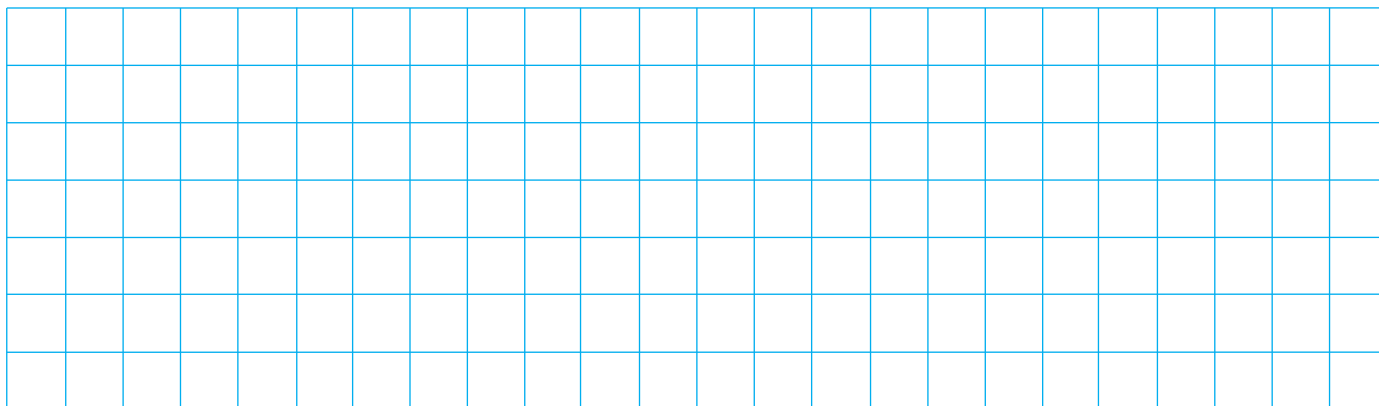
Problem Solving REAL WORLD

11. Test Prep Heather drew this rectangle. Which multiplication equation can be used to find the area of the rectangle?
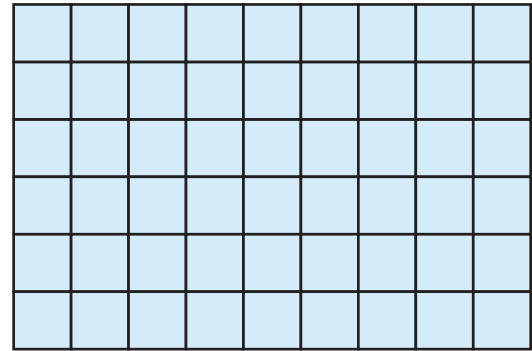
Ⓐ $6 \times 9 = 54$

Ⓑ $9 \times 9 = 81$

Ⓒ $9 + 9 + 9 + 9 + 9 + 9 = 54$

Ⓓ $6 \times 6 = 36$

H.O.T. Pose a Problem

12. Tile Design Company tiled a bathroom wall using square tiles. A mural is painted in the center. The drawing shows the design. The area of each tile used is 1 square foot.

Write a problem that can be solved by using the drawing.

Pose a problem.

_____

_____

_____

_____

_____

_____

_____

_____

Solve your problem.

FOR MORE PRACTICE:
Standards Practice Book, pp. P225–P226

Name _____

Use Area Models

Find the area of each shape. Each unit square is 1 square foot.

1.

2.
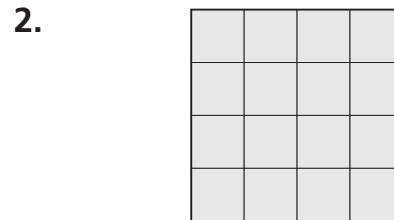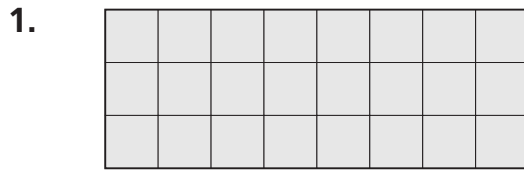
There are 3 rows of 8 unit squares.
3 × 8 = 24

24 square feet

_____

**Find the area of each shape.
Each unit square is 1 square meter.**

3.

4.

5.

_____   _____   _____
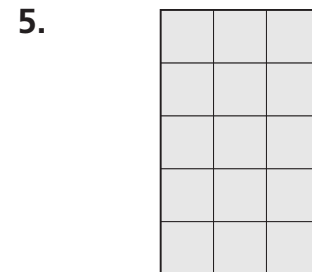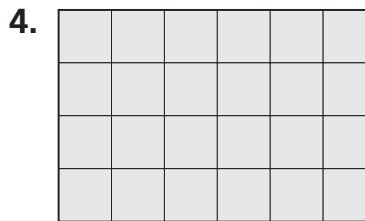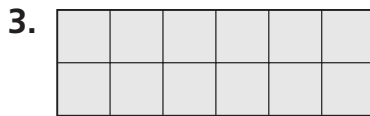
Problem Solving REAL WORLD

6. Landon made a rug for the hallway.
Each unit square is 1 square foot.
What is the area of the rug?

_____
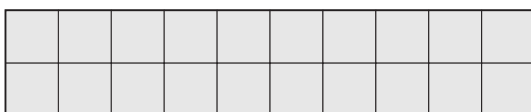
7. Eva makes a border at the top of
a picture frame. Each unit square is
1 square inch. What is the area
of the border?

_____

Lesson Check (MACC.3.MD.3.7, MACC.3.MD.3.7a)

1. The entrance to an office has a tiled floor. Each square tile is 1 square meter. What is the area of the floor?

(A) 8 square meters

(B) 9 square meters

(C) 10 square meters

(D) 12 square meters

2. Ms. Burns buys a new rug. Each unit square is 1 square foot. What is the area of the rug?
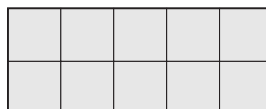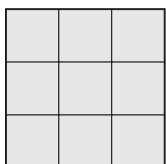
(A) 5 square feet

(B) 7 square feet

(C) 10 square feet

(D) 12 square feet

Spiral Review (MACC.3.OA.1.4, MACC.3.NF.1.3d, MACC.3.MD.1.1, MACC.3.MD.4.8)

3. Ann and Bill are comparing fraction strips. Which statement is correct?
(Lesson 9.2)

(A) $\frac{3}{8} > \frac{5}{8}$

(B) $\frac{3}{4} < \frac{1}{4}$

(C) $\frac{3}{6} > \frac{4}{6}$

(D) $\frac{1}{3} < \frac{2}{3}$

4. Claire bought 6 packs of baseball cards. Each pack had the same number of cards. If Claire bought 48 baseball cards in all, how many cards were in each pack? (Lesson 7.8)

(A) 54   **(C)** 8

(B) 42   **(D)** 6

5. Austin left for school at 7:35 A.M.. He arrived at school 15 minutes later. What time did Austin arrive at school? (Lesson 10.4)

(A) 7:40 A.M.   **(C)** 7:55 A.M.

(B) 7:50 A.M.   **(D)** 8:00 A.M.

6. Wyatt's room is a rectangle with a perimeter of 40 feet. The width of the room is 8 feet. What is the length of the room? (Lesson 11.3)

(A) 5 feet   **(C)** 16 feet
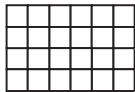
(B) 12 feet   **(D)** 32 feet

MACC.3.MD.3.6 Measure areas by counting unit squares.

**1.** Jo colored in some squares on grid paper to make the letter H.
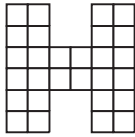
How many squares are there in all?

A 12

B 24

C 28

D 36

**2.** Doug drew a layout of his garden on grid paper. Each square represents 1 square meter.

What is the area of the flower garden?

A 10 square meters

B 12 square meters

C 20 square meters

D 24 square meters

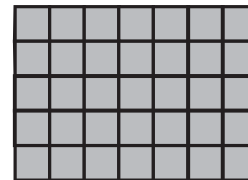**3.** Beth designed a patio with square tiles. Each tile represents 1 square foot.
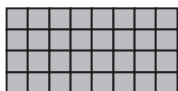
Count the squares. What is the area of the patio?

_____

4. Which figure has an area of 30 square units?

A

B

C

D
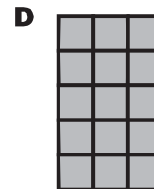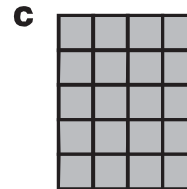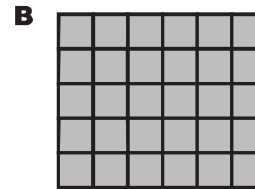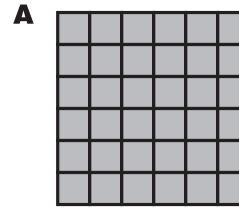
5. Look at the squares. Each square represents 1 square meter.

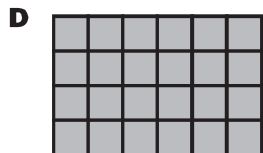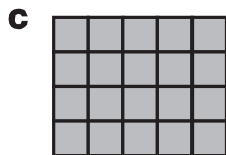Count the squares. What is the area of the figure?
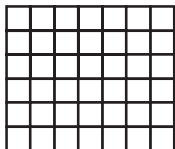
_____

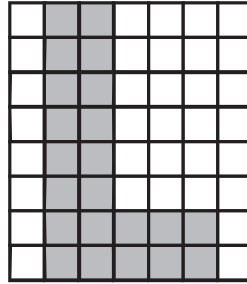**6.** Laura drew this rectangle on grid paper.

What is the area of the figure?

A 6 square units

B 12 square units

C 15 square units

D 18 square units

7. Which figure has an area of 24 square units?

A

B

C

D

8. Shade squares of this grid to show a figure with an area of 15 square units.

9. Larry shaded squares on grid paper to make the letter L.

What is the area of the figure Larry shaded?

A 28 square units

B 24 square units

C 22 square units

D 20 square units

10. Shade squares of this grid to show a figure with an area of 16 square units.