Calendar Time

Quick Review

Gillian's cat was born on May 15th, 2004.

We can write this date in different ways:

➤ We use 2 digits for the month and 2 digits for the day.

2004   05   15

↑   ↑   ↑

Year   5th month   15th day

This date is written in metric notation.

➤ This way of writing the date uses two 2 digits for the year too.

04	05	15	05	15	04	15	05	04
↑	↑	↑	↑	↑	↑	↑	↑	↑
Year	Month	Day	Month	Day	Year	Day	Month	Year

Try These

1. Write each date in metric notation.
   a) November 30th, 2005 **2005 11 30**
   b) March 17th, 1998 **1998 03 17**
   c) April 7, 2000 **2000 04 07**
   d) June 26, 1959 **1959 06 26**

2. Write each date using words and numbers.
   a) 1976   10   14 **October 14th, 1976**
      Year Month Day
   b) 2007   12   01 **December 1st, 2007**
      Year Month Day
   c) 01   03   95 **January 3rd, 1995**
      Month Day Year
   d) 08   04   06 **August 4th, 1906**
      Month Day Year
   e) 05   06   00 **June 5th, 2000**
      Day Month Year
   f) 09   05   12 **May 9th, 1912**
      Day Month Year

1. Write each date using words and numbers. **Sample Answers**

   a) 2001 09 08 <u>**September 8th, 2001**</u> b) 1989 12 11 <u>**December 11th, 1989**</u>

   c) 2009 10 02 <u>**October 2nd, 2009**</u> d) 2004 04 03 <u>**April 3rd, 2004**</u>

2. Use words and numbers to record the date of birth of 2 classmates. Then write each date in metric notation.
   Sample Answers

   a) <u>**March 27th, 1998; 1998 03 27**</u>

   b) <u>**August 3rd, 1997; 1997 08 03**</u>

3. Write each date in metric notation.

   Sample Answers

   a) the seventh day of last month   <u>**2007 11 07**</u>

   b) the first day of this year   <u>**2007 01 01**</u>

   c) the date of your fifth birthday   <u>**2002 05 15**</u>

   d) the last day of next month   <u>**2008 01 31**</u>

   e) the day after April 19th, 2008   <u>**2008 04 20**</u>

   f) the day before June 1st, 1987   <u>**1987 05 31**</u>

   g) the day after December 31st, 2010   <u>**2011 01 01**</u>

4. In what ways can the date 03 04 79 be interpreted?

   <u>**March 4th, 1979, April 3rd, 1979**</u>

Stretch Your Thinking

Benito turned 10 on the 3rd day of the 11th month of 2005.
Write this date in as many ways as you can.
<u>**November 3rd, 2005; 2005 11 03; 11 03 05; 03 11 05**</u>
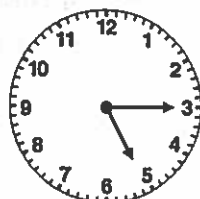
Exploring Time

Quick Review

> A clock with numbers and hands is an **analog clock**.
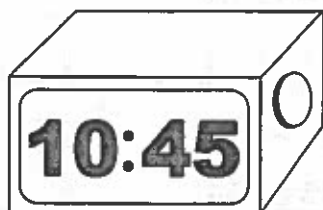
5 o'clock
5:00

quarter after 5
5:15

half past 5
5:30

quarter to 6
5:45

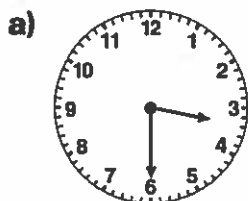> A clock with numbers and no hands is a **digital clock**.

10:45
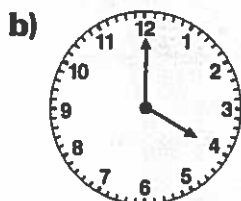
The clock shows 45 minutes after 10 o'clock.
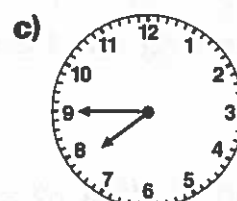
We say: "Ten forty-five."

Try These

1. Write each time two different ways.   **Sample Answers**

a)
<u>3:30</u>
<u>half past 3</u>

b)
<u>4 o'clock</u>
<u>4:00</u>

c)
<u>7:45</u>
<u>quarter to 8</u>

2. Write each time in a different way.   **Sample Answers**

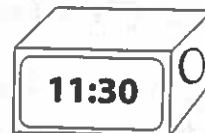a) 2:00   <u>2 o'clock</u>   b) quarter after 9   <u>9:15</u>
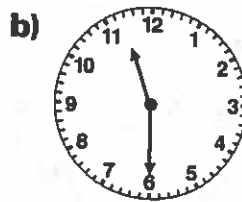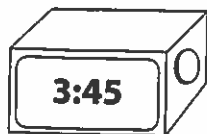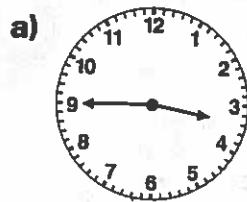
c) 8:30   <u>half past 8</u>   d) twelve forty-five   <u>12:45</u>

Practice

1. Read the time on each analog clock.
   Write the same time on the digital clock.

   a) `3:45` **b)** `11:30`

   c) `11:00` **d)** `2:15`
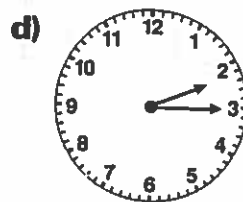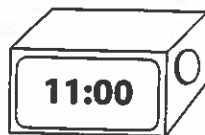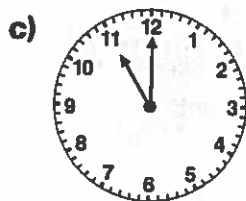
2. Write each time in a different way. **Sample Answers**

   a) quarter after 12 **12:15**
   c) nine o'clock **9:00**
   e) 7:15 **quarter after 7**
   g) six forty-five **6:45**

   b) 7:45 **quarter to 8**
   d) three thirty **half past 3**
   f) half past one **1:30**
   h) quarter to four **3:45**

3. Caleb did push-ups for 15 minutes. He started at 4:30.
   At what time did he finish? **4:45**

Stretch Your Thinking

Millie started baking at 3:45. She finished at 5:00.
How long did Millie spend baking? Explain how you know.

From 3:45 to 4:00 is 15 minutes.
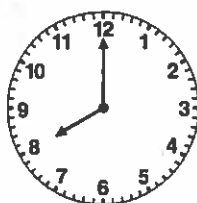
From 4:00 to 5:00 is 1 hour.

So, Millie baked for 1 hour and 15 minutes.

57

Telling Time

Quick Review

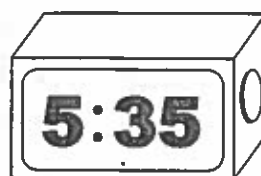It takes 5 minutes for the minute hand to move from one number to the next number.

8 o'clock
8:00

5 minutes after 8 o'clock
8:05

This analog clock shows
50 minutes after 12 o'clock or
10 minutes before 1 o'clock
12:50

It is twelve fifty or ten to one.

This digital clock shows
35 minutes after 5 o'clock
5:35

5:35

It is five thirty-five.

Try These

1. Write the time shown on each analog clock.

a)
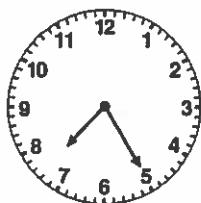
__7:25__

b)

__3:40__

c)

__2:55__

1. Write each time two different ways.

a)

1:15

15 minutes after 1

b)

4:40

20 minutes to 5

c)

11:35

25 minutes to 12

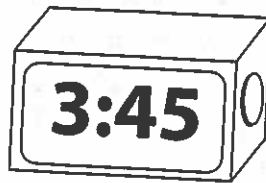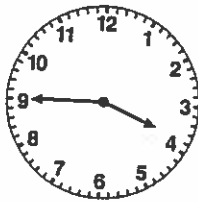2. Skip count to find how many minutes are between each pair of times.

a) 6:15 and 6:20 **5 minutes**

b) 8:10 and 8:40 **30 minutes**

c) 2:40 and 2:55 **15 minutes**

d) 12:00 and 12:30 **30 minutes**

3. Read the time on the analog clock.
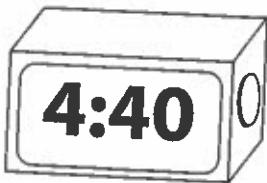Write the same time on the digital clock.

3:45

4. What is another way you could write twenty-five to seven?

6:35

Stretch Your Thinking

Lester left the library at 20 minutes before 5:00.
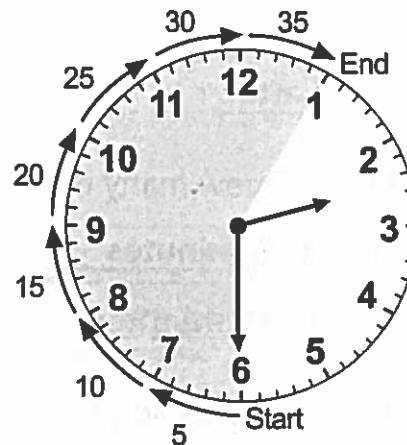Show the time on the digital clock.

4:40

Elapsed Time

Quick Review

The amount of time from the start to the end of an activity is the **elapsed time**.

Oscar practised on his drums from 2:30 P.M. to 3:05 P.M.

To find the elapsed time in minutes, count on by 5s.

Oscar practised for 35 minutes.

Try These

Use a clock to help you.

1. Find each elapsed time. Write the answer in minutes.

   a) 2:40 P.M. to 2:55 P.M. <u>**15 minutes**</u>

   b) 6:05 A.M. to 6:40 A.M. <u>**35 minutes**</u>

   c) 7:55 P.M. to 8:35 P.M. <u>**40 minutes**</u>

   d) 11:45 A.M. to 12:25 P.M. <u>**40 minutes**</u>

2. Tell what time it will be 25 minutes later.

   a) It's 4:30 P.M. <u>**4:55 P.M.**</u>   b) It's 1:25 P.M. <u>**1:50 P.M.**</u>

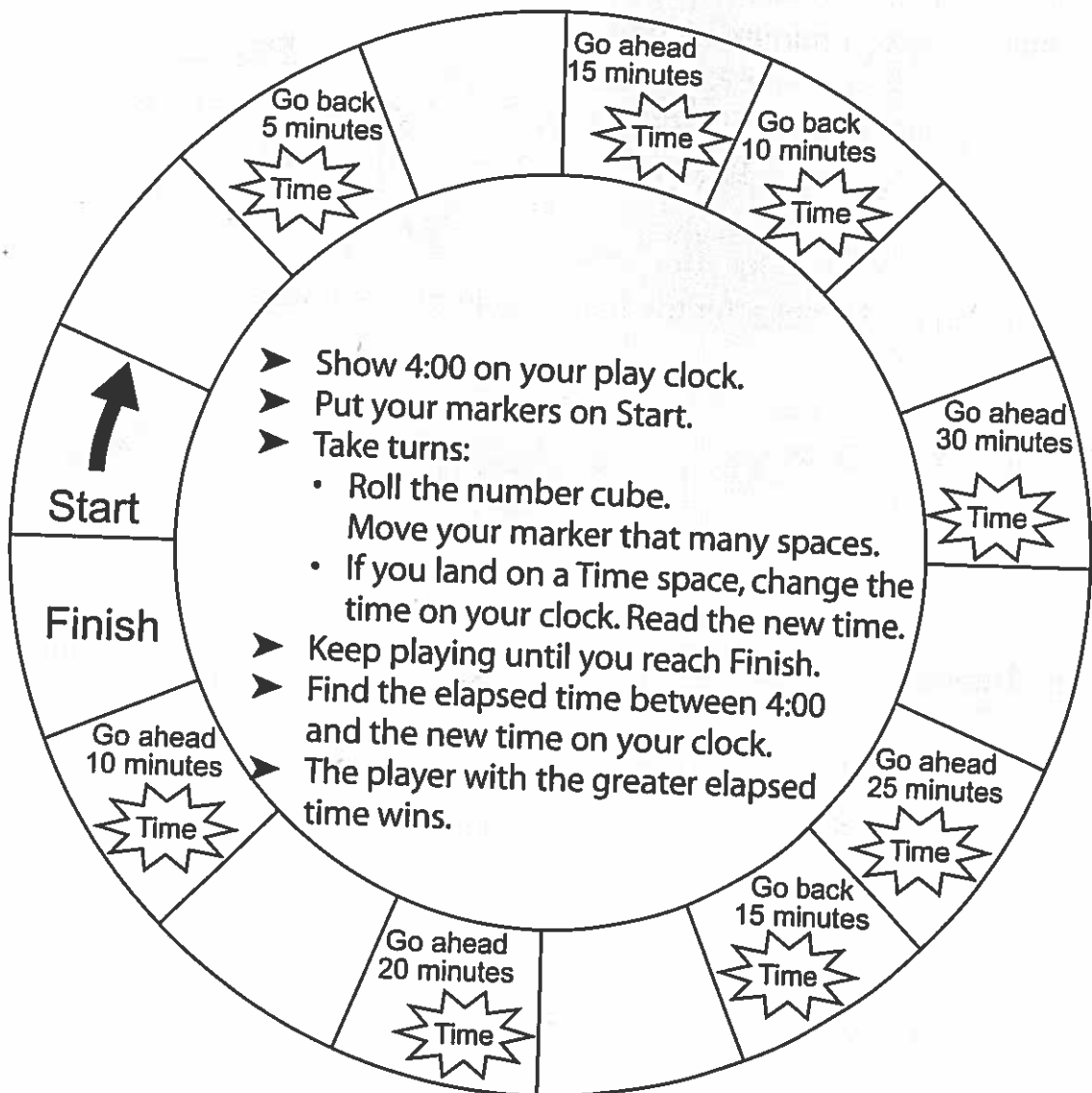   c) It's 8:20 A.M. <u>**8:45 A.M.**</u>   d) It's 5:15 A.M. <u>**5:40 A.M.**</u>

1. Play this game with a partner.
   You will need:
   2 play clocks
   2 markers
   1 number cube labelled 1 to 6

Go ahead 15 minutes — Time

Go back 5 minutes — Time

Go back 10 minutes — Time

Start

Finish

Go ahead 30 minutes — Time

➤ Show 4:00 on your play clock.
➤ Put your markers on Start.
➤ Take turns:
   • Roll the number cube.
     Move your marker that many spaces.
   • If you land on a Time space, change the time on your clock. Read the new time.
➤ Keep playing until you reach Finish.
➤ Find the elapsed time between 4:00 and the new time on your clock.
➤ The player with the greater elapsed time wins.

Go ahead 10 minutes — Time

Go ahead 25 minutes — Time

Go back 15 minutes — Time

Go ahead 20 minutes — Time

Stretch Your Thinking

It is 11:20 P.M. What time will it be in 2 hours 25 minutes? __1:45 A.M.__

Telling Time to the Minute

Quick Review

When the minute hand moves from one mark on the clock to the next mark, it takes 1 minute of time.

9:25   9:26

You can read times after the half-hour in different ways.

52 minutes after 4 o'clock or 4:52

8 minutes before 5 o'clock or 8 minutes to 5

Try These

1. Write the time shown on each clock.

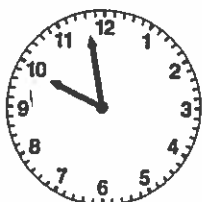   a)   b)   c)

   __12:14__   __6:42__   __1:27__

2. Show the time on each clock.

   a)   b)   c)

   9:58   3:39   10:21

1. Write each time two different ways.
   a)

   <u>**3:38**</u>

   <u>**38 minutes after 3**</u>

   b)

   <u>**7:47**</u>

   <u>**13 minutes to 8**</u>

2. Show the time on each digital clock.
   a) quarter to five   b) half past eleven   c) quarter past six

   4:45   **11:30**   **6:15**
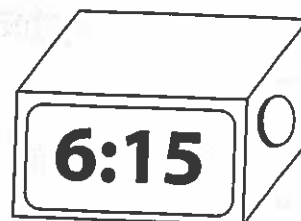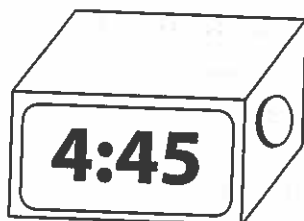
3. Write something you might be doing at each time.
   Sample Answers
   a) 12:04 P.M. <u>**eating lunch**</u>
   b) 3:58 A.M. <u>**sleeping**</u>
   c) 9:25 P.M. <u>**taking a bath**</u>

Stretch Your Thinking

The sum of the digits on this digital clock is 15.
At what other times will the digits add up to 15?
Give at least 2 answers.

5:37

<u>Sample Answer: 4:47, 5:55, 6:18, 7:35, 8:34, 9:33, 10:59, 9:15 ...</u>

STUDENT BOOK

6

LESSON

The 24-Hour Clock

Quick Review

This is a 24-h clock.
There are 24 h in one day.
From midnight to noon, the hours are from 0 to 12.
From 1 P.M. to midnight, the hours are from 13 to 24.
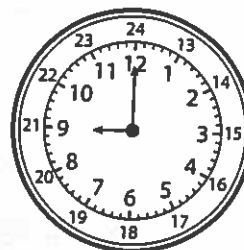
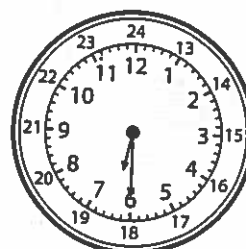When we use the 24-h clock, we use 4 digits to write the time.

10:15 A.M. is
written 10:15.
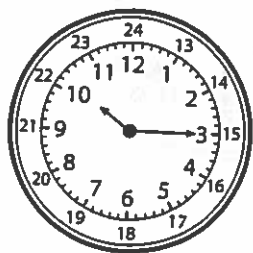
6:30 A.M. is
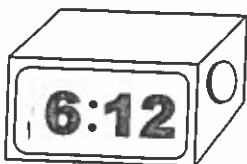written 06:30.
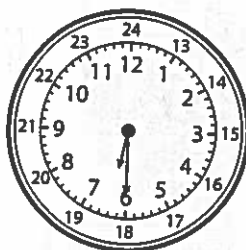
6:30 P.M. is
written 18:30.

Try These

1. Write each time using a 24-h clock.
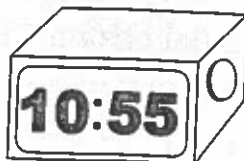
   a) 8:10 A.M. __08:10__

   b) 12:00 noon __12:00__

   c) 10:20 P.M. __22:20__

2. Write each time using A.M. or P.M.

   a)

   6:12

   __6:12 A.M.__

   b)

   10:55

   __10:55 A.M.__

   c)

   13:43

   __1:43 P.M.__

Practice

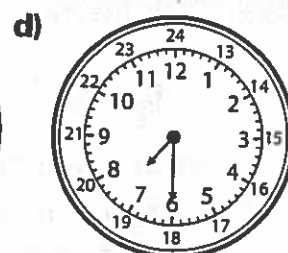1. Write each time using a 24-h clock. Assume it is past noon.

a)   **14:27**

b)   **23:15**

c)   **14:38**
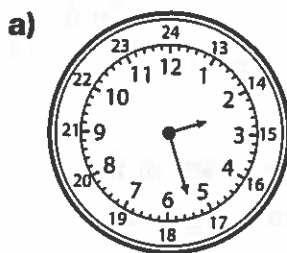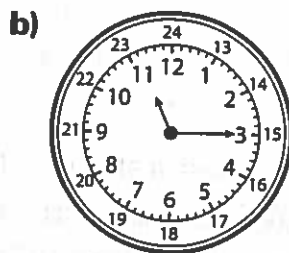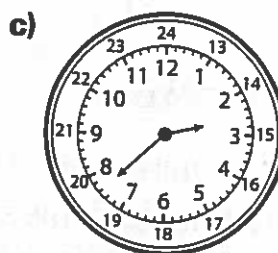
d)   **19:30**

2. Write each time using A.M. or P.M.

a) `07:14`   **7:14 A.M.**

b) `11:47`   **11:47 A.M.**

c) `15:58`   **3:58 P.M.**

d) `04:44`   **4:44 A.M.**

3. What time is it?

   a) 2 h after 17:25 _____ **19:25**   b) 7 h after 18:45 _____ **01:45**

   c) 6 h before 14:30 _____ **08:30**   d) 12 h before 07:21 _____ **19:21**

   e) 20 min after 11:55 _____ **12:15**   f) 45 min after 23:00 _____ **23:45**

4. Gerald arrived at school at 09:03. School starts at 09:00.

   How late was Gerald? _____ **3 min**

5. Shu Ying started running on the treadmill at 07:45.

   She stopped at 08:02. How long did Shu Ying run? _____ **17 min**

6. Mr. Albert fell asleep at 23:30 and slept for seven and one-quarter hours.

   At what time did he wake up? _____ **06:45**

Stretch Your Thinking

Amanjeet left Winnipeg, MB, at 16:55 on Oct. 26. When she arrived in Edmonton, AB, her watch showed 08:05, Oct. 27. How long was the trip? **16 h 10 min**
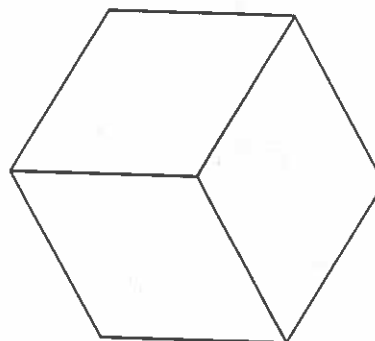
Covering Shapes

Quick Review

*At Home
At School*

The number of units needed to cover a shape is the **area** of the shape.
The units must be the same size. The units must be *congruent*.
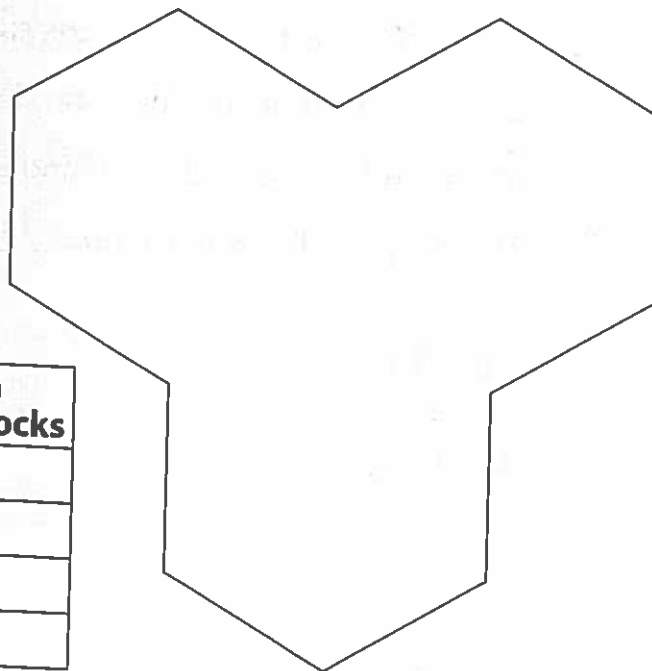To find the area of a shape, count how many units cover it.
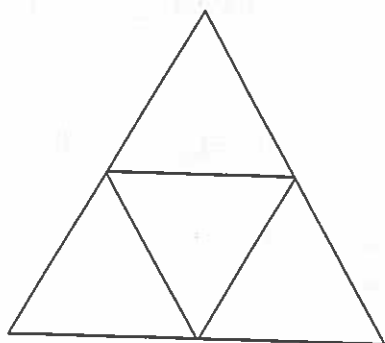
The unit is 1 green Pattern Block.
The area is 4 green Pattern Blocks.

The unit is 1 blue Pattern Block.
The area is 3 blue Pattern Blocks.

Try These

1. **a)** Use yellow Pattern Blocks to
    find the area of this shape.
    Record the area in the table.

    b) Repeat using red, blue, and
    green Pattern Blocks.

Unit	Area in Pattern Blocks
Yellow Pattern Block	3
Red Pattern Block	6
Blue Pattern Block	9
Green Pattern Block	18

1. **a)** Estimate the area of the hexagon in red Pattern Blocks.
      Then find the area in red Pattern Blocks and record it in the table.
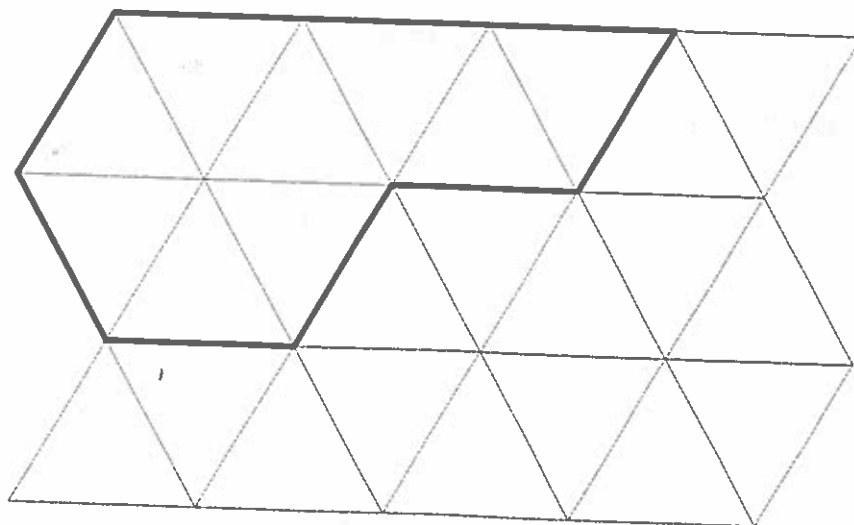   **b)** Repeat the activity with blue and green Pattern Blocks.
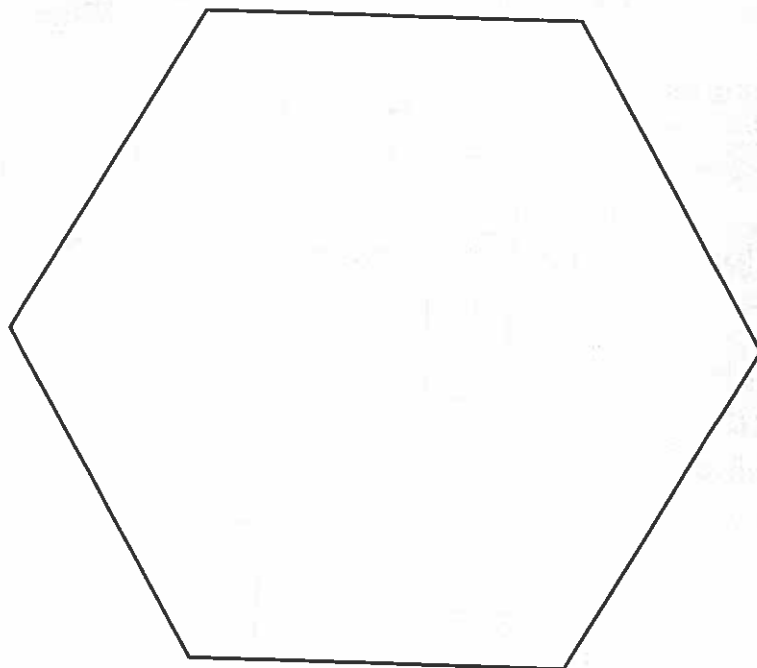
Estimates are Sample Answers

Pattern Block Unit	Estimate	Area in Pattern Blocks
red	10	8
blue	14	12
green	30	24

2. Use this grid. Draw a shape with area 3 red Pattern Blocks.

Sample Answer

Suppose a shape has an area of 5 yellow Pattern Blocks.

What is its area in red Pattern Blocks? __10__

In blue Pattern Blocks? __15__

Exploring Area

Quick Review

At Home
At School

To find the **area** of a shape, count the number of square units needed to cover it.

The area of this shape is 5 square units.

To find the area of a rectangle, you can count the number of square units or you can multiply.
There are 2 rows of 5 squares.
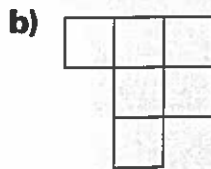$2 \times 5 = 10$
The area of this rectangle is 10 square units.
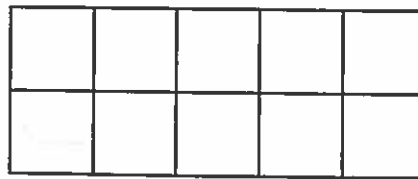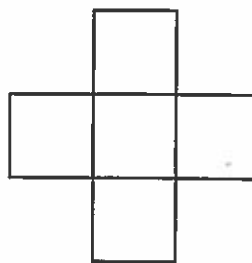
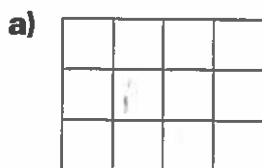**Try These**

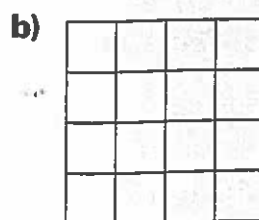1. Find the area of each shape in square units.

a)

___8___ square units

b)

___6___ square units

c)

___8___ square units

2. Write a multiplication fact to find the area of each rectangle.

a)

___$3 \times 4 = 12$___

b)

___$4 \times 4 = 16$___

c)

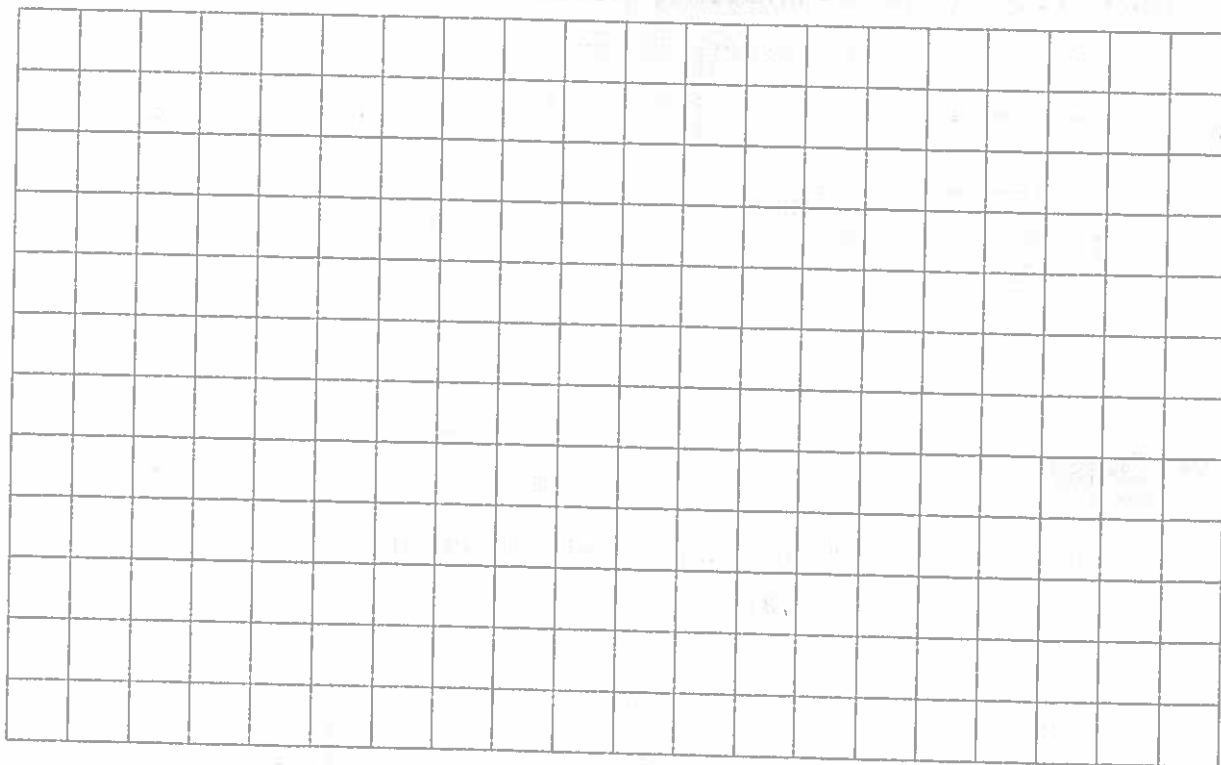___$1 \times 6 = 6$___

1. Play this game with a partner.

   You will need:

   2 number cubes   2 pencil crayons of different colours

   Take turns:
   ➤ Roll the cubes. Add the numbers to get an area in square units.
   ➤ Colour a shape with that area on the grid.
   ➤ No shape can overlap another shape.
   ➤ If there is no room left for your shape, you lose your turn.
   ➤ Continue until there is no more room on the grid.

Stretch Your Thinking

Find the total area you coloured on the grid. Then find the total area your partner coloured. Who coloured the greater area?

<u>**Sample Answer: The total area coloured was 180 square units.**</u>

<u>**My area was 80 square units, and my partner's area was 100 square units.**</u>

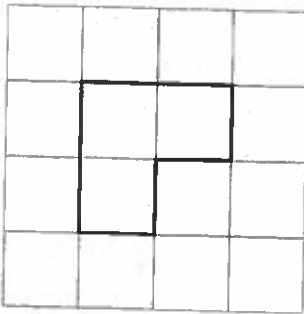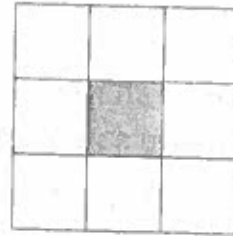<u>**My partner coloured the greater area.**</u>

Measuring Area in Square Centimetres

Quick Review

Each side of every square on this grid paper is 1 cm long.

Every square has an area of one **square centimetre** (1 cm²).
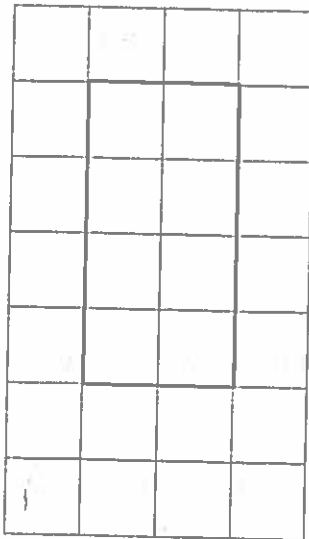
You can use square centimetres to measure area.

The area of this shape is 3 cm².

Try These

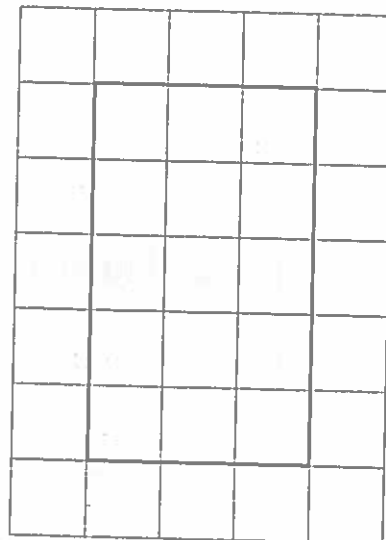1. Find the area of each rectangle in square centimetres.

   a)

   Area = __8 cm²__

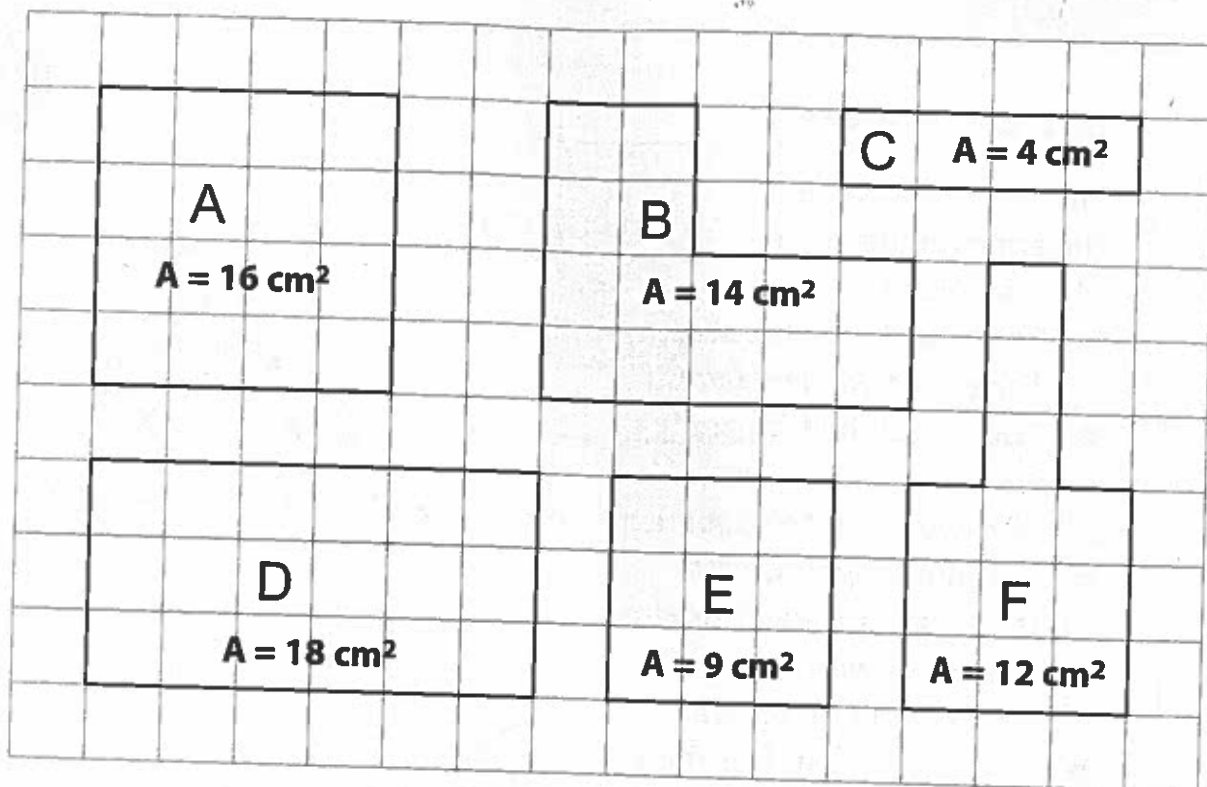   b)

   Area = __5 cm²__

   c)

   Area = __15 cm²__

1. Write the area inside each shape in square centimetres.

A		B		C A = 4 cm²

A = 16 cm²

A = 14 cm²

D = 18 cm²

E   A = 9 cm²

F   A = 12 cm²

2. Draw three different rectangles with area 12 cm².

The area of a square is 25 cm². What are its length and width?

<u>Length 5 cm, width 5 cm</u>

Estimating and Measuring Area

Quick Review

At Home At School

This is one way to find the approximate area of a triangle.

➤ Count each whole square.
   There are 8 whole squares.
➤ Count each half square.
   There are 4 half squares.
   This equals 2 whole squares.
➤ Count each part greater than $\frac{1}{2}$ a square as 1 square.
   There are 2 parts greater than $\frac{1}{2}$ a square.
➤ Ignore each part less than $\frac{1}{2}$ a square.
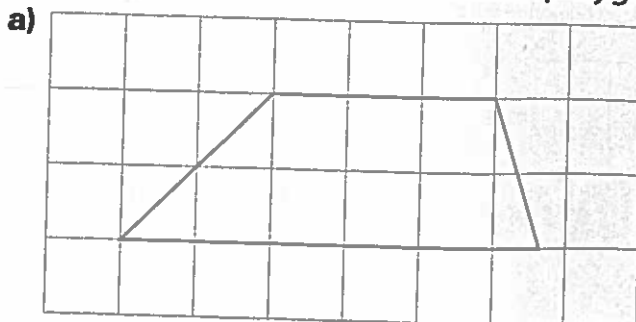➤ Add to find the total number of squares: $8 + 2 + 2 = 12$
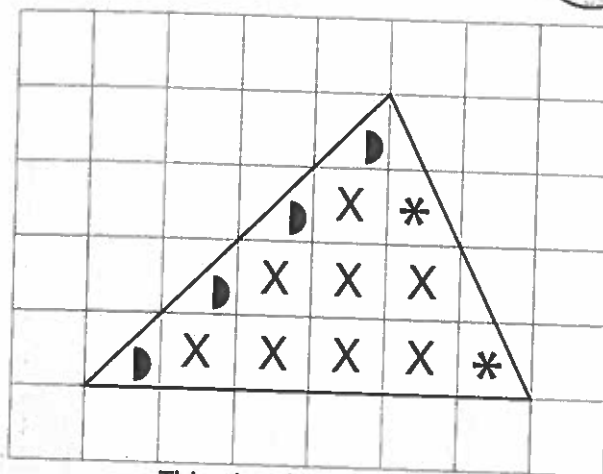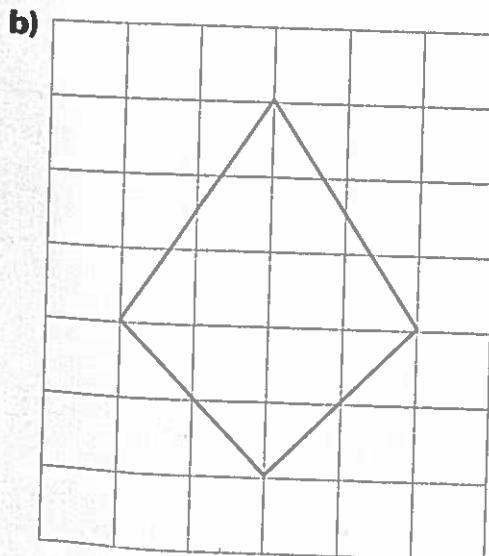
This triangle has an area of about 12 cm².

Try These

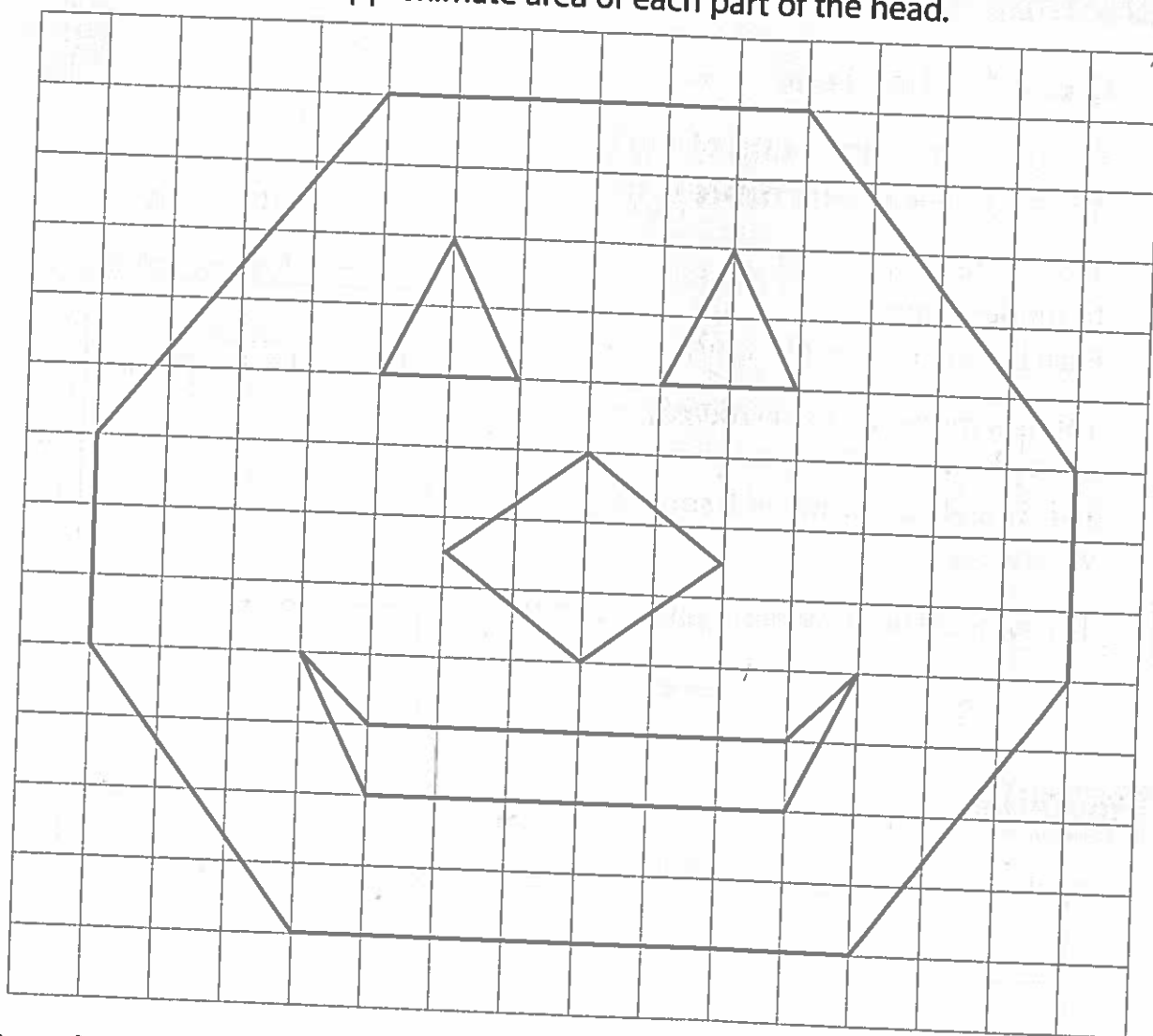1. Find the approximate area of each polygon.

   a)

   Area = about __9 cm²__

   b)

   Area = about __10 cm²__

1. Draw a large clown's head on the grid. Use as many different polygons as you can. Find the approximate area of each part of the head.

Sample Answers

	Nose	Mouth	One Eye	Whole Head
Approximate Area	8 cm²	6 cm²	2 cm²	136 cm²

Stretch Your Thinking

Explain how you would find the approximate area of a leaf.

Sample Answer: Lay the leaf on grid paper and trace around it. Then count the number of whole, half, and part squares. Add to get the area.

Finding Area in Square Metres

Quick Review

A square with side lengths of 1 m has an area of one **square metre** (1 m²).

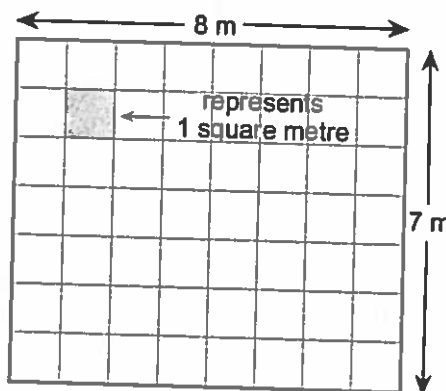You can use grid paper to model a large area.
Each square represents 1 m².

This is a model of a strawberry patch.
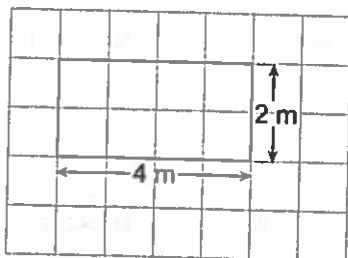It is 7 m wide and 8 m long.
The model has 7 rows of 8 squares.
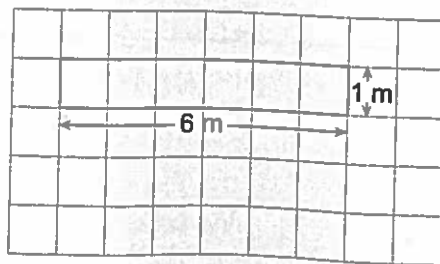$7 \times 8 = 56$

The area of the strawberry patch is 56 m².

← 8 m →
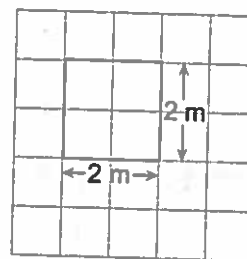represents 1 square metre
7 m

Try These

1. Find the area of each garden. Each square has an area of 1 m².

2 m
4 m

6 m
1 m

2 m
2 m

a) Area = __8 m²__

b) Area = __6 m²__

c) Area = __4 m²__

2. Put the rectangles in question 1 in order from least to greatest area.
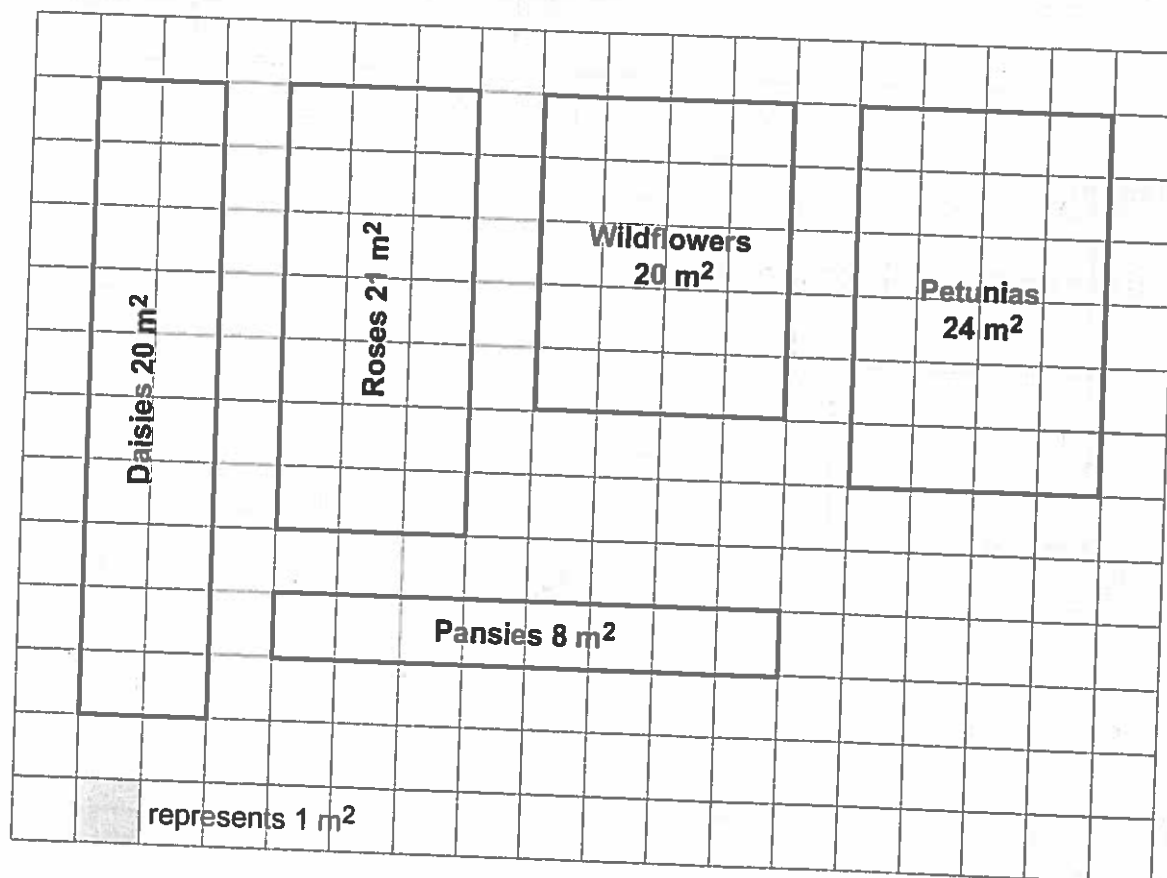
__c, b, a__

1. Here are the dimensions of each of Sheila's rectangular gardens. Model each of the gardens on the grid.

   ➤ Find the area of each garden.
   ➤ On each model, record the area and the type of flowers.

Sheila's Gardens

Flowers	Width	Length
Roses	7 m	3 m
Wildflowers	5 m	4 m
Pansies	1 m	8 m
Petunias	6 m	4 m
Daisies	10 m	2 m

Sample Answers

Garden	Area
Daisies	20 m^2
Roses	21 m^2
Wildflowers	20 m^2
Petunias	24 m^2
Pansies	8 m^2

represents 1 m^2

Stretch Your Thinking

Sheila has a rectangular pumpkin patch with area 36 m^2.
The patch is 4 m wide. How long is it?

9 m long

Exploring Rectangles with Equal Areas

Quick Review

At Home At School

Different rectangles can have equal areas.
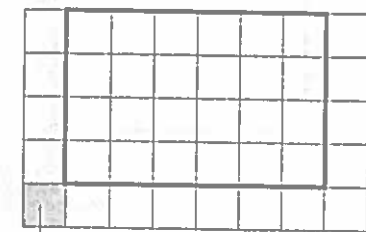Each rectangle below has an area of 10 m².

□ = 1 m²

Try These

1. Find the area of each rectangle.

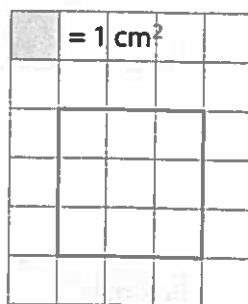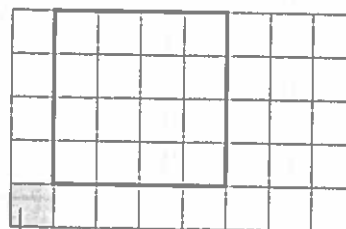a)

1 cm²

Area = **24 cm²**

b)

= 1 cm²

Area = **9 cm²**
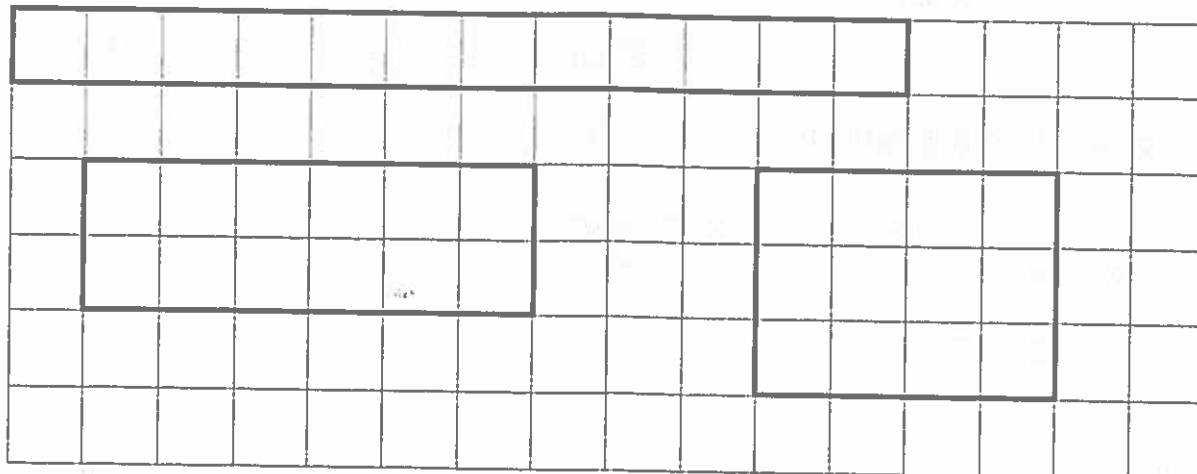
c)

1 cm²

Area = **16 cm²**
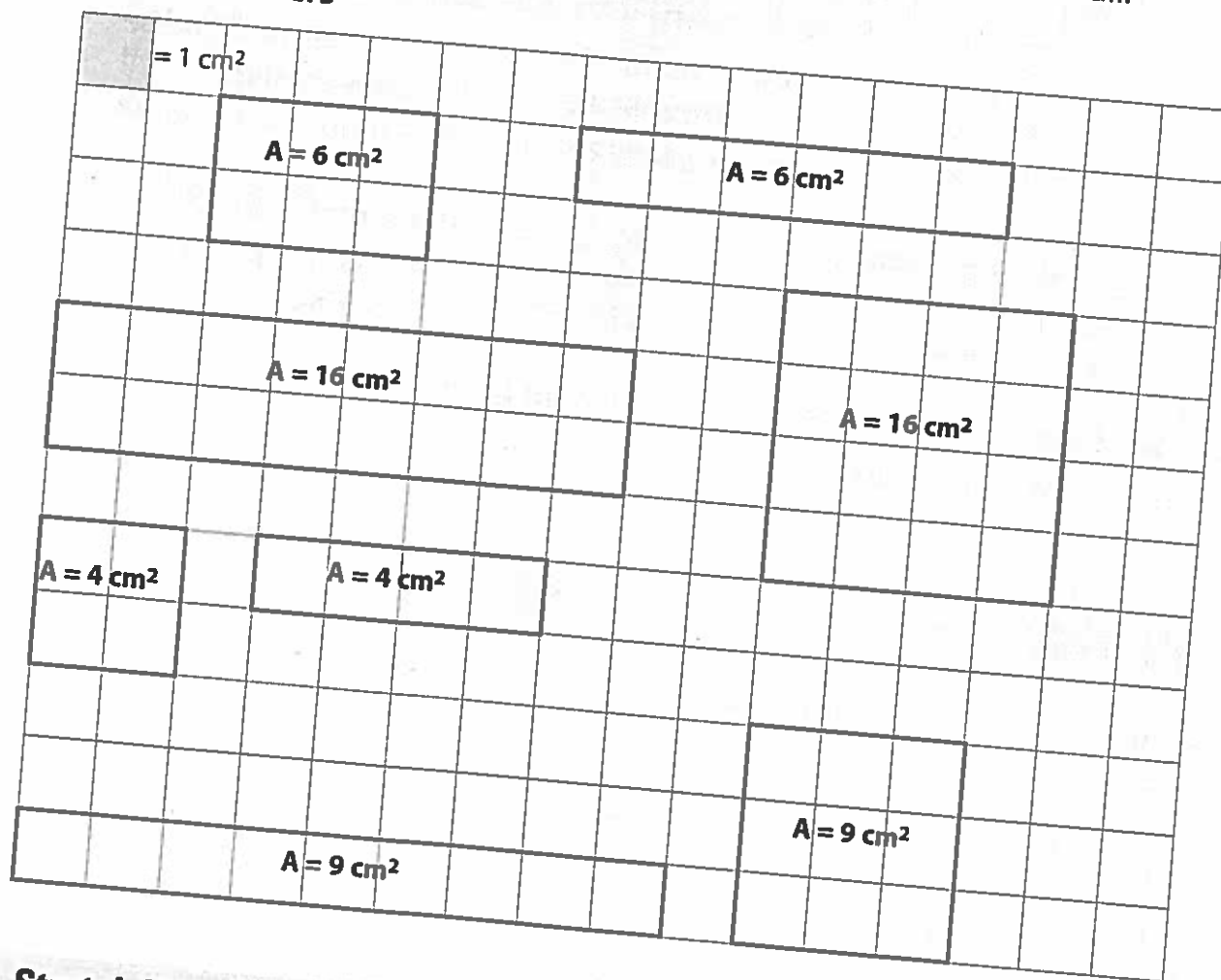
2. Draw all rectangles with an area of 12 cm².

1. Work with a partner.

➤ Draw a rectangle on the grid.
➤ Record the area on the rectangle.
Your partner draws a different rectangle with the same area, and records the area.
➤ Switch roles and repeat. Continue the game until the grid is full.

Sample Answers

Stretch Your Thinking

Draw two rectangles on the grid, each with an area of 1 cm².

Sample Answers