Gr. 5 Math Package #13-1
Name: _____
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CHAPTER 3
5

Pictographs

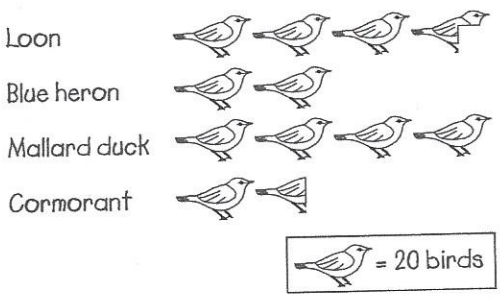
Goal **Use whole and partial symbols to display data on a pictograph.**

Jose counted the number of birds on Memesagamesing Lake in Northern Ontario in July.

Type of bird	Number
Loon	75
Blue heron	40
Mallard duck	81
Cormorant	28

1. Draw a pictograph to show the data using whole and partial symbols. Make sure you show the scale.

Birds of Memesagamesing Lake



2. Explain how you decided on the number of whole and partial symbols to show the number of birds.

A whole symbol equals 20 birds, half a symbol equals 10 birds, and a quarter symbol equals 5 birds.

3. Why are 81 and 28 difficult numbers to represent on the pictograph?

It is difficult to accurately represent 81 and 28 using whole or partial symbols.
For example, 81 is very close to 80 so 4 symbols can be used to represent this number.
Similarly, 28 is very close to 30 so $1\frac{1}{2}$ symbols can be used to represent this number.

4. What other scale could you use for the pictograph?

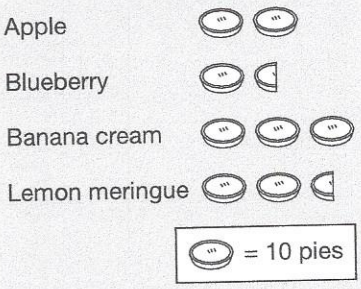
Suggested answer: = 10 birds

At-Home Help

A **pictograph** is a graph that displays data using symbols. Each symbol represents a fixed number. Some data points can only be represented by using partial symbols.

For example, since 1 symbol represents 10 pies, 15 pies is represented with $1\frac{1}{2}$ symbols.

Types of Pies



A **scale** on a pictograph shows the number represented by each symbol.

The scale for the pictograph above says that 1 symbol represents 10 pies.

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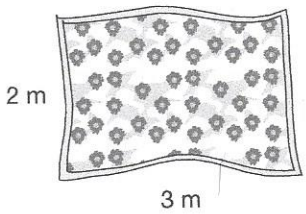
CHAPTER 5

5 Measuring the Perimeter of a Rectangle

Goal **Develop and use a rule for calculating the perimeter of a rectangle.**

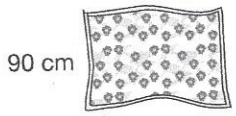
1. Calculate the length of trim you would need to go around these blankets.

a)



2 m + 3 m + 2 m + 3 m = ___ m or 2(2 m + 3 m) = ___ m

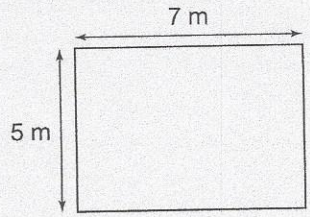
b)



90 cm + 140 cm + 90 cm + 140 cm = ___ cm
or 2(90 cm + 140 cm) = ___ cm

At-Home Help

In a rectangle, opposite sides are the same length. The perimeter of a rectangle can be calculated by adding the length and width, and then doubling the sum.



For example:

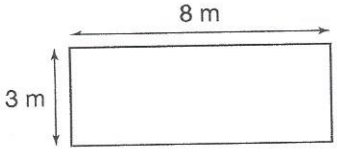
perimeter of this rectangle
= two times (5 m + 7 m)
= two times (12 m)
= 24 m

2. Which rectangle has the greater perimeter? How much greater is it?

a) 7.5 cm by 6 cm **b)** 7 cm by 7 cm

Rectangle _____ has the greater perimeter. It is ___cm___ greater than _____.

3. a) How will the perimeter of this rectangle change if you add 4 m to the width?



The perimeter ___will increase by ___ m___.

b) How will the perimeter change if you divide the length in half?

The perimeter ___will decrease by ___ m___.

4. To calculate the perimeter of a square, Sue multiplies the width by 4. Is her rule correct? Explain.

___. All the side lengths of a square are equal. Since perimeter is the distance around an object, multiplying the side length of a square by 4 gives the ___ perimeter.

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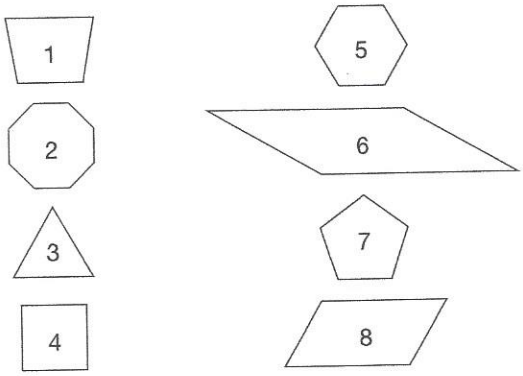
CHAPTER 7

5

Measuring Angles in Polygons

Goal **Identify and classify regular polygons by their angle measures.**

1. Match these shapes with the angle clues below. Name each shape.



a) 100°, 100°, 80°, 80° _____ (shape)

b) 120°, 120°, 60°, 60° _____ (shape)

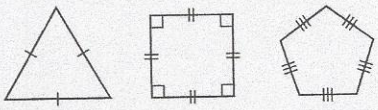
c) 60°, 60°, 60° _____ (shape)

d) 90°, 90°, 90°, 90° _____ (shape)

e) 30°, 30°, 150°, 150° _____ (shape)

At-Home Help

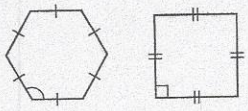
A **regular polygon** is a polygon with equal angle measures and equal side lengths.



Regular polygons are identified by the number of sides.

The angle measure in a regular polygon increases as the number of sides increases.

For example: Each angle in a regular hexagon is greater than each angle in a square, because a hexagon has 6 sides while a square has only 4 sides.



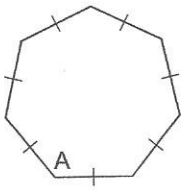
2. Write angle clues for the remaining polygons. Match the shapes with your angle clues. Name each shape.

Angle clue: 108°, 108°, 108°, 108°, 108° Shape: _____ (shape)

Angle clue: 120°, 120°, 120°, 120°, 120°, 120° Shape: _____ (shape)

Angle clue: 135°, 135°, 135°, 135°, 135°, 135°, 135°, 135° Shape: _____ (shape)

3. Without measuring, predict the size of angle A. Use what you know about the relationship between the number of sides and angle measures in a regular polygon.



Angle A will be less than ° but greater than °.

_____

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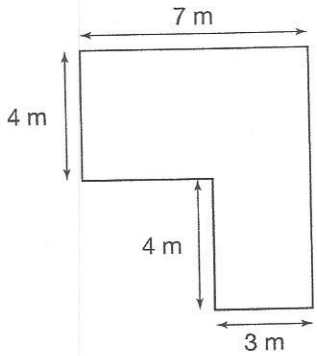
CHAPTER 8

5 Solve Problems by Solving Simpler Problems

Goal **Solve problems by breaking them into smaller parts.**

1. Alain's parents are purchasing new flooring for their living room. The flooring costs \$20/m^2.

How much will the flooring cost before taxes?



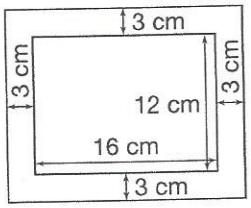
Scale 1 cm = 4 m

a) Calculate the area by dividing the shape into two parts. Use 2 different sets of rectangles. Did you get the same answer? Explain why or why not.

m^2. The area was the same for both sets of rectangles because the overall shape of the room did not change, only the way it was divided.

b) Calculate the cost of the flooring. \$

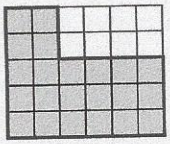
2. A photograph is 12 cm by 16 cm. It has a mount that is 3 cm wide all around it. What is the area of the mount? Show your work.



(area of photo and mount) cm x cm = cm^2
(area of photo) cm x cm = cm^2
(area of mount) cm^2 - cm^2 = cm^2

At-Home Help

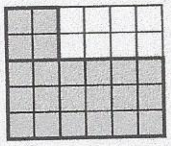
The area of a complex shape can sometimes be found by dividing it into several smaller parts. The total area is then equal to the sum of the areas of the smaller parts.



For example, the area of this shape can be calculated two ways.

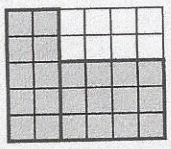
area = area of 2 cm by 2 cm square + area of 6 cm by 3 cm rectangle

$= 2 \times 2 + 6 \times 3$
$= 4 + 18$
$= 22$ cm^2



or area = area of 5 cm by 2 cm rectangle + area of 4 cm by 3 cm rectangle

$= 5 \times 2 + 4 \times 3$
$= 10 + 12$
$= 22$ cm^2



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CHAPTER 9

5 Communicate About Estimation Strategies

Goal **Explain estimation strategies to determine if a solution is reasonable.**

1. Each Canadian dollar is worth $0.76 US. Estimate the cost in US dollars of a software package priced at $30.00 Canadian. Explain your thinking.

   Suggested answer: $22.50 $0.76 is close to the fraction $\frac{3}{4}$. Half of $30.00 = $15.00 and $\frac{1}{2}$ of $15.00 = $7.50. So $\frac{3}{4}$ of $30.00 is $15.00 + $7.50 = $22.50.

2. Use the exchange rate in Question 1. Estimate the cost in US dollars of adult and child admission to the Toronto Zoo. Admission costs in Canadian dollars are $18.00 for adults and $12.00 for children. Explain how you estimated. Suggested answer:

   Adult admission is about $_____ US.

   Child admission is about $_____ US.

   $0.76 is close to the fraction $\frac{3}{4}$. For adult admission, half of $18.00 = $ and $\frac{1}{2}$ of $9.00 = $. So $\frac{3}{4}$ of $18.00 is $ + $ = $. Repeat same thinking for child admission. Half of $12.00 = $ and $\frac{1}{2}$ of $6.00 = $. So $\frac{3}{4}$ of $12.00 is $ + $ = $.

At-Home Help

Use the Communication Checklist when explaining and justifying your estimation strategies. You may round or group numbers to make your explanations more clear. You may also want to use models to justify your answer.

For example, to estimate 1.79×8, you may say: "I round 1.79 to 2, then I multiply $2 \times 8 = 16$. I know my estimate is a bit high because I rounded up."

You may also say: "I know that 0.79 is about $\frac{3}{4}$. I multiply $1 \times 8 = 8$. I know that $\frac{3}{4}$ of $8 = 6$. So my estimate is $8 + 6 = 14$."

Both explanations are reasonable.

Communication Checklist
- ☑ Did you show all your steps?
- ☑ Did you use a model?
- ☑ Did you explain your thinking?

3. One euro is worth about $1.67 Canadian. Tim estimates that a book that costs 25 euros would cost about $30.00 Canadian. Explain how you would decide if this estimate makes sense.

   Suggested answer: The estimate does not make sense because it is very low. If the book was 10 euros, then it would cost $16.70 Canadian. But the book costs 25 euros, so the cost is $16.70 + $16.70 + $8.35 = $41.75 Canadian. $41.75 is greater than $30.00.

4. A can of apple juice contains 1.36 L of juice. Serina bought 9 cans of juice. What is the best estimate of the amount of juice she bought? Circle the correct answer.

   12 L 12.24 L 9 L 18 L