6.3 Estimating Large Numbers
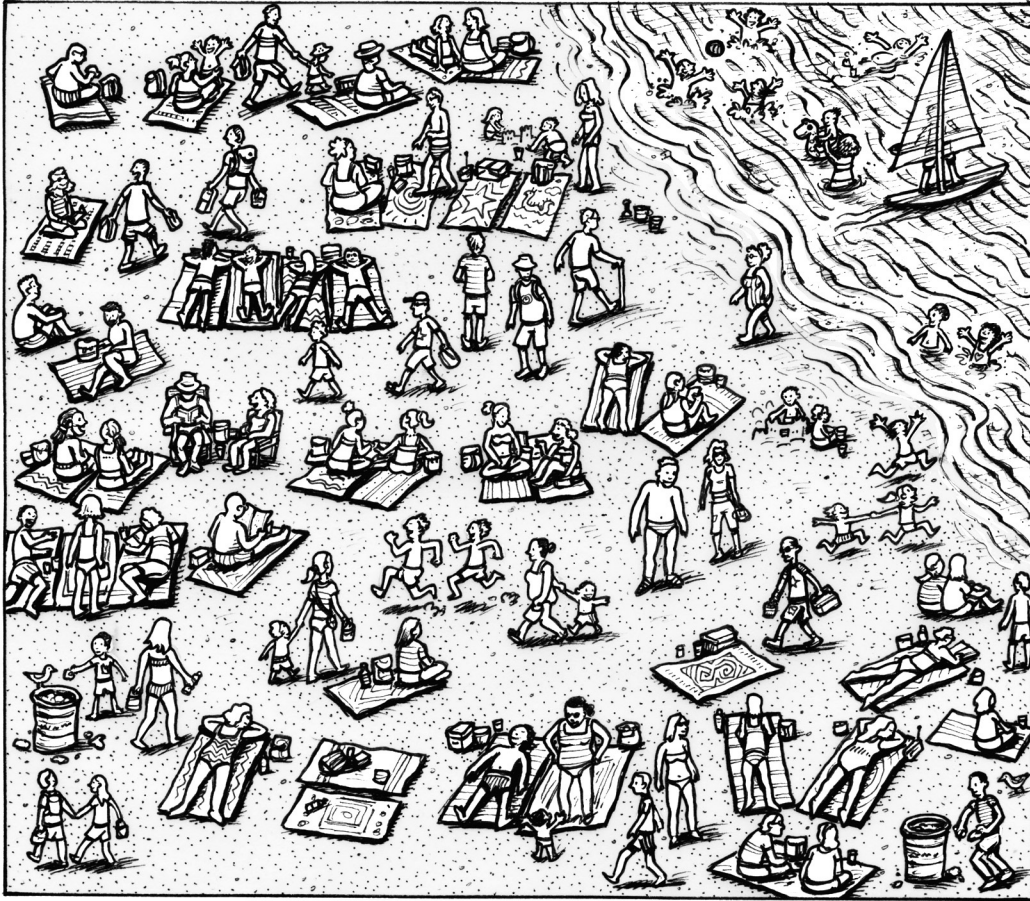
Focus: estimating large numbers, developing strategies

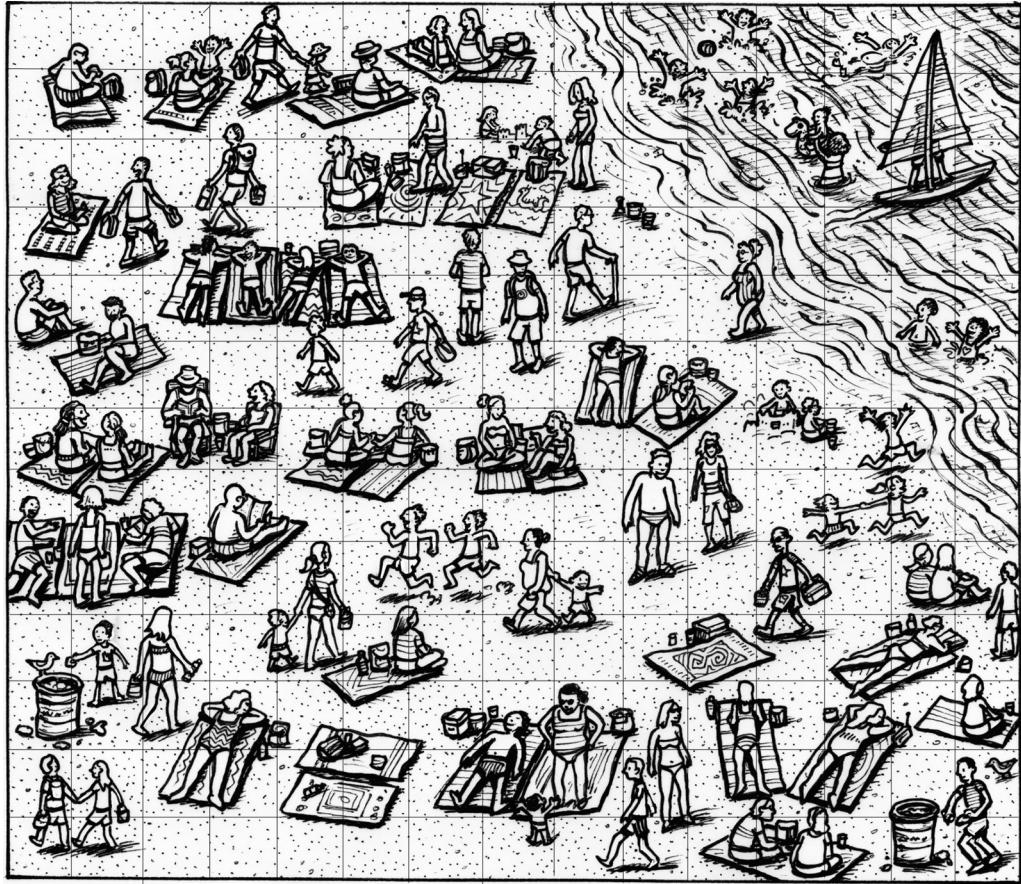| **Warm Up**	
1. Round the following numbers to the nearest 10. **a)** 49 _____ **b)** 52 _____ **c)** 17 _____ **d)** 35 _____	**2.** Add the rounded answers from #1.
3. Add the numbers from #1.	**4.** Calculate the difference between your answers for #2 and #3. _____
5. Estimate how much a person will earn in 8 hours, if they make $11.90 per hour.	**6.** Round the amounts to the nearest dollar. **a)** $1.10 _____ **b)** 99¢ _____ **c)** $8.88 _____ **d)** $97.25 _____
7. Add the rounded answers from #6.	**8. a)** How else could you round the numbers in #6? _____ **b)** Recalculate the total using new values.

Make an Educated Guess

- How can you determine the number of fans at a basketball game, or the number of students at a dance?
- In many cases, the ability to estimate is more useful than the ability to calculate an exact answer. It's close enough to know that there were *about* 2000 fans at the game.
- Estimation also works well with time. For example, a flight scheduled to depart at 10:37 and arrive at 12:46 means that you'll be in the air for a bit more than 2 hours. Rarely is it important to calculate the length of the flight as 2 hours and 9 minutes.

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1. a) Estimate the number of people in this picture. _____

  b) Describe the strategy you used to answer part a).

  _____

  _____

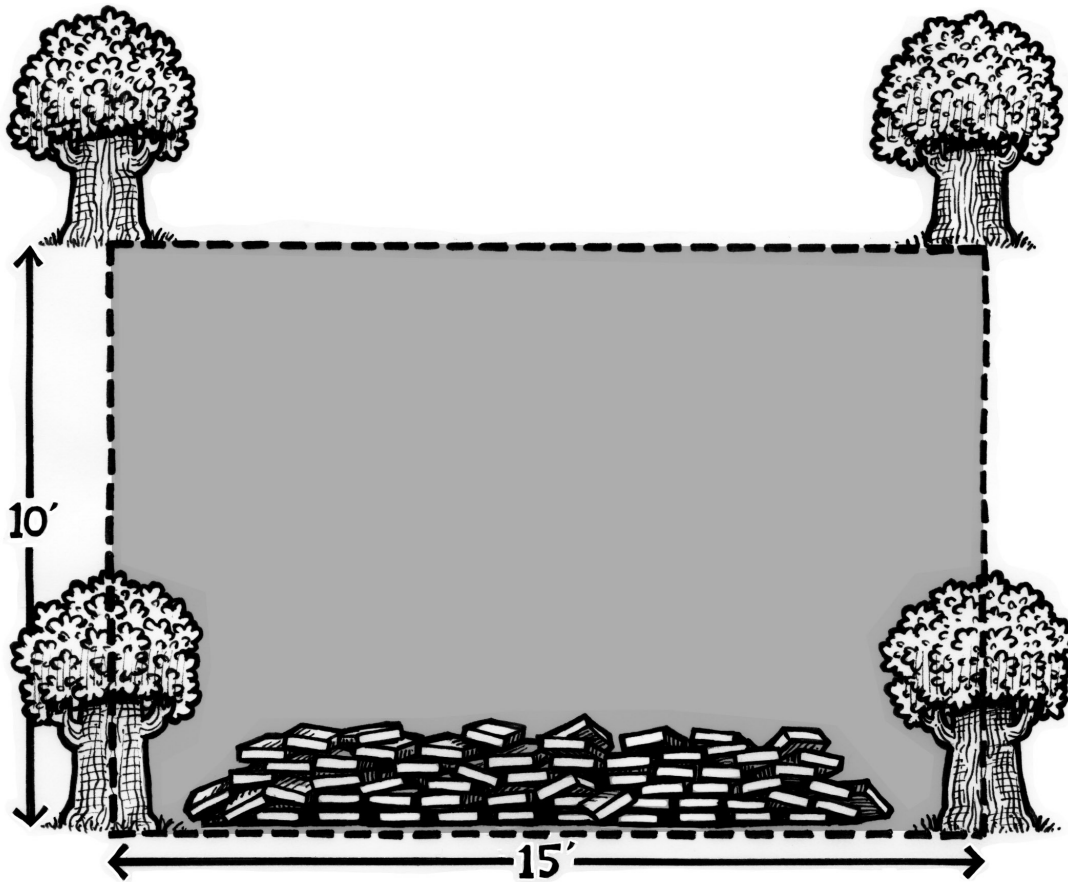 **c)** Compare strategies with 2 of your classmates. What strategy did they use?

  _____

  _____

  _____

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2. a) Pick a square in the picture. How many people are in the square? _____

Animal populations are often estimated using this strategy.

b) How many squares are in the picture? _____

c) Assume that each square has about the same number of people in it. About how many people are in the picture? _____

d) State 1 advantage of using this method of estimating the number of people in the picture.

_____

_____

e) State 1 disadvantage of using this method of estimating the number of people in the picture.

_____

_____

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3. Mei wants to build a rectangular patio in her backyard. The patio will be built in the centre of 4 trees, which form a rectangle. Mei is using square patio stones that measure 12" by 12".

a) Draw a sketch of the patio Mei wants to build.

b) Calculate how many patio stones Mei would need to cover the patio.

c) Estimate how many patio stones there are

in the picture. _____

d) Describe a strategy you could use to estimate the number of patio stones in the pile.
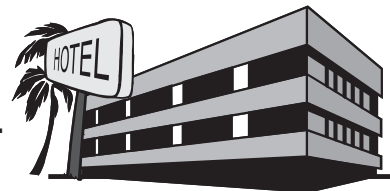
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- When going grocery shopping, it is important to have a budget.
- When you shop, it is difficult to add the actual prices unless you have a calculator with you.
- Rounding the prices of items can help you estimate the total cost of your groceries as you shop.

4. a) Create a grocery list for a couple in their twenties with an infant. The couple has a weekly budget of $150. Use store flyers to help you select items. Complete the chart.

Item	Actual Cost	Rounded Cost
Estimated Total Cost		

b) What different strategies did you and your friends use for estimating the amount of this bill? Which ones worked best?

_____

_____

_____

_____

5. A website says that the driving distance between Gloucester (a suburb of Ottawa) and Orlando, Florida is 1439 miles. Driving time is approximately 24 hours. Estimate the following items.
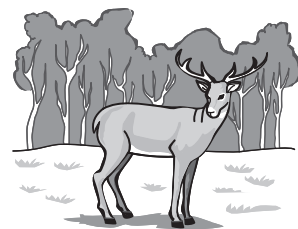
a) How many times would you need to stop for fuel? _____

How long would each stop last? _____

b) What other stops would you need to make?

_____

Estimate the total time needed for these stops. _____

c) So, the total time for the trip would not be 24 hours. It would be closer to _____ hours.

How many nights would you sleep over? _____

d) If you leave Gloucester at 6:00 A.M. on a Saturday morning, what day and approximately what time would you arrive in Orlando?

_____

☑ Check Your Understanding

1. One square kilometre of a provincial park contains 12 deer. The park has an area of about 85 square kilometres. Describe how you could estimate the deer population of the park.

_____

_____

_____

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