NS4-2 Using Skip Counting to Estimate Large Quantities

Pages 2–3

CURRICULUM REQUIREMENT
AB: required
BC: required
MB: required
ON: required

VOCABULARY
estimate

Goals

Students will skip count by 10s, 100s, and 1000s.
Students will estimate the number of items in a group by skip counting.

PRIOR KNOWLEDGE REQUIRED

Can count by 10s to 100
Can count by 100s to 1000

MATERIALS

transparency of **BLM Tens, Hundreds, Thousands Chart** (p. B-39)
overhead projector
about 80 counters
transparency of **BLM Estimating Squares** (p. B-40)
transparency of **BLM Estimating Dots** (p. B-41)
tennis ball and an empty box (see Extension 3)

Mental math minute. Have students skip count by different numbers starting at multiples of the number, up to 10 times the number.

Skip counting by 10s. Have students skip count aloud by 10s from 10 to 100. Write the sequence horizontally on the board.

Project **BLM Tens, Hundreds, Thousands Chart**. ASK: Where could we show skip counting by 10s? (sample answer: point to the last number in every row) Show skip counting from 10 to 100 by pointing to the numbers in the last column. Have the class skip count aloud by 10s starting from other numbers anywhere in the chart, including the top row. Then have students skip count aloud from numbers in the bottom row up to at most 200.

Exercises: Skip count by 10s.

a) 0, 10, 20, 30, ___, ___, ___, ___ b) 47, 57, 67, ___, ___, ___, ___

c) 76, 86, 96, ___, ___, ___, ___ d) 274, 284, 294, ___, ___, ___, ___

Answers: a) 40, 50, 60, 70; b) 77, 87, 97, 107; c) 106, 116, 126, 136; d) 304, 314, 324, 334

Skip counting by 100s. Have the class skip count aloud by 100s from 100 to 1000. Write the sequence horizontally on the board. On the projected hundreds chart, add a zero to all numbers in the rightmost column, and point out that the numbers are now the same as those the class just said while skip counting. Repeat for other columns. Have the class skip count by 100s from other numbers, including by starting from numbers in the top and bottom rows.

Exercises: Skip count by 100s.

a) 0, 100, 200, 300, ___, ___, ___, ___

b) 320, 420, 520, ___, ___, ___, ___

c) 289, 389, 489, ___, ___, ___, ___

d) 745, 845, 945, ___, ___, ___, ___

Answers: a) 400, 500, 600, 700; b) 620, 720, 820, 920; c) 589, 689, 789, 889; d) 1045, 1145, 1245, 1345

Skip counting by 1000s. On the projected hundreds chart, add another zero to all numbers in the rightmost column. ASK: What number do you think we're going to skip count by now? (1000) Have the class skip count down the rightmost column.

Exercises: Skip count by 1000s.

1000, 2000, 3000, _____, _____, _____, _____, _____, _____, _____

Answers: 4000, 5000, 6000, 7000, 8000, 9000, 10 000

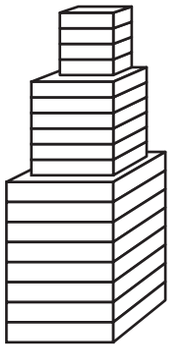
Estimating the number of objects. Place about 80 counters, bunched together, on the overhead projector. SAY: Let's estimate how many counters there are using skip counting. Count out and move 10 counters, bunched together, to the side. Have volunteers separate groups of counters about the same size as the first 10. As a class, use the groups of 10 to skip count. Explain that with an estimate you don't need exact numbers; as long as there are about 10 counters in each group, the estimate will be reasonable.

Estimating the number of objects in a picture. Project **BLM Estimating Squares**. SAY: Since we can't move the squares, we're going to count out and shade 10. Shade and then circle a group of 10 squares that are close together with few overlapping. Have a volunteer circle other groups of about 10. Remind students that estimates are not meant to be exact. As a class, use the circled groups to skip count by 10s.

Estimating larger numbers of objects in a picture. SAY: When there are several hundreds of objects in a group, it is better to skip count by 100s. Project **BLM Estimating Dots**. SAY: I'm going to circle about 100 dots by counting groups of about 10 until I have about 100. Have volunteers circle other groups of about 100, and then, as a class, skip count by 100s.

Extensions

1. In the building below, every floor in the bottom section has about 200 windows, every floor in the middle section has about 100 windows, and every floor in the top section has about 50 windows. Estimate the number of windows in the building.



Answers: 200, 400, 600, 800, 1000, 1200, 1400, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2250, 2300, 2350, 2400

2. A plane is flying 3200 m above the ground. Then, it flies up 1000 m higher 5 times. Later, it flies down 500 m lower 10 times. Use skip counting to find how high above the ground the plane ends up.

   Answers: 3200, 4200, 5200, 6200, 7200, 8200, 7700, 7200, 6700, 6200, 5700, 5200, 4700, 4200, 3700, 3200

3. Show students a tennis ball (or ball of similar size) and an empty box roughly twice the size of a toaster oven. Have students estimate the number of tennis balls that can fit in the box. ASK: How will the size of the ball affect your answer? (if the ball is smaller, more will fit in the box)