Leapfrogs on the Number Line
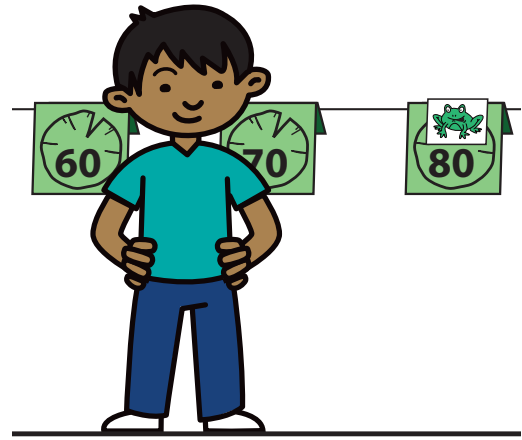
In this unit, your student will:

- Locate, identify, and order numbers to 120

- Count forward and backward by 1s and 10s

- Add, subtract, and solve word problems using number lines

- Measure, order, and compare heights

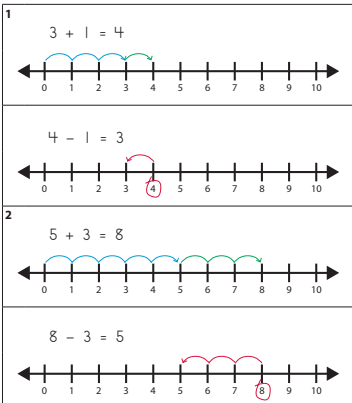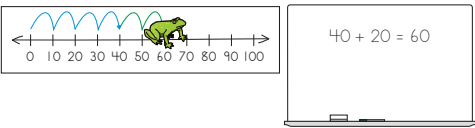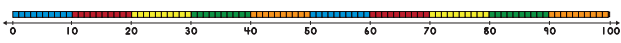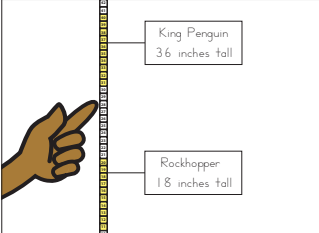Your student will practice these skills by solving problems such as these:

| PROBLEM	COMMENTS
What number goes on the blank card? *Teacher What number could belong on the blank card? How do you know?* 	Students locate, identify, and place numbers on a number line. They determine the number that goes on the blank card by thinking about the order and the space (interval) between numbers on the line. In the first example, students might count or think about what comes before 10. In the second example, students might think about what number is halfway between 0 and 100, count by 10s, or reason that if $5 + 5$ is 10, then $50 + 50$ is 100.
Show Little Frog's moves on the number line. Write an equation to match. 	Students help frogs hop forward and backward on a number line. They tell stories about the frogs' actions and record addition and subtraction equations to match. At first, students count one by one on the number line, but they soon begin to count by 1s, 10s, and multiples of 10 more efficiently. Trains of 10 Unifix cubes lined up along the number line help students think about the distance and numbers between each multiple of 10.
A king penguin is 36 inches tall. A rockhopper penguin is 18 inches tall. How much taller is the king penguin? *We used the measuring strip. We counted up from 18 to 36. The king penguin is 18 inches taller.* 	The class learns about rockhopper and king penguins. They make a measuring strip marked in inches and use it to order, compare, and find differences between their height and the heights of the penguins. Students use the strip to solve problems by determining the number of spaces between two numbers.

1

Frequently Asked Questions About Unit 4

## Q: Why is the number line used to teach adding and subtracting?

A: Number lines help students see similarities, differences, and important relationships between numbers. Each number on the line indicates its distance — how many intervals it is — from 0. Students count the intervals (spaces) between numbers to calculate. To add 5 + 3, a student might start at 5 and move 3 intervals to the right to determine the sum, 8. To subtract 8 – 3, a student might start at 8 and move 3 intervals to the left to arrive at 5. In this way, students can think of adding and subtracting as a process of moving from one number to another.

$$5 + 3 = 8$$

$$8 - 3 = 5$$
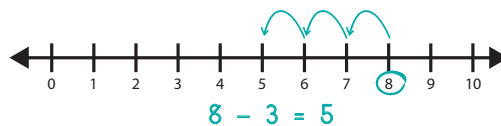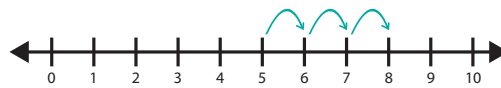
The number line provides a good visual image of skip-counting patterns and encourages students to count by 10s. They can think of adding 10 (and multiples of 10) as jumps of 10 forward and subtracting 10 (and multiples of 10) as jumps of 10 backward.
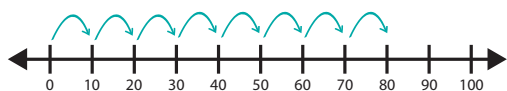
$$50 + 30 = 80$$
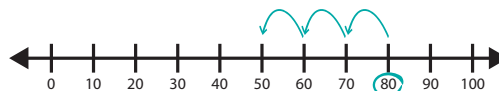
$$80 - 30 = 50$$

Q: How can I support my student's learning?

A: In Unit 4, frog jumps and penguin heights provide context for thinking about numbers greater than 20. Encourage your student to look for and discuss 2-digit numbers throughout the day. What can they tell you about the number? What does the number tell them? (e.g., quantity, size, age, temperature, location). Numbers are everywhere!

To further support your student in learning mathematics, you can:

- Visit mathathome.mathlearningcenter.org and work through some or all of the activities in Grade 1: Set 4 together. These activities complement the learning that takes place in the classroom during Unit 4 and provide fun ways to engage in mathematical thinking. This set also includes digital versions of games that your student has learned at school, such as The Frog Jump Game, Super Frogs, and Frog Path.
- Visit apps.mathlearningcenter.org and invite your student to explore the Number Line app. Students can explore different counting sequences, count forward and backward along the line, and choose equations to represent and solve on the number line.
- Read books with your student that capture their interest in both numbers and animals. Listen as they make connections between the ideas in these books, the work they are doing in math, and the world around them.
  - » *Animals by the Numbers* by Steve Jenkins
  - » *Everything You Need to Know About Frogs and Other Slippery Creatures* by DK Publishing
  - » *I am a Penguin: Fun Penguin Facts & Photos* by Active Brains
  - » *Lifetime: The Amazing Numbers in Animal Lives* by Lola M. Schaefer, illustrated by Christopher Silas Neal
  - » *Pebbles and the Biggest Number* by Joey Benun, illustrated by Laura Watson
  - » *Sheep Won't Sleep: Counting by 2's, 5's, and 10's* by Judy Cox, illustrated by Nina Cuneo