

Lesson 4: The Power of 10 (2 Days)

Getting Started

✿ Questions to Explore

- How do patterns help us in math?
- What is the pattern when counting up or back by 10s?

⦿ Skills

- Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900
- Make sense of problems and persevere in solving them
- Model with mathematics

✂ Materials

- abacus (kit)
- calendar
- index cards (kit)
- Interactive Notebook
- laminated number grids (kit)
- number cards (kit)
- number cards (kit)* (Activity 2 - Option 2)

Introduction

In this lesson, your child extends her skill with counting by 10s to being able to count up and back by 10s from any number. Begin by asking your child to count to 100 by 10s.

Refer back to Lesson 2 Activity 3. Ask: What numbers did you color when you were counting by 10s? Listen for "I colored all the numbers under 10 on the grid" and "I colored all the numbers that end in 0." Your child may need to refer back to her number pattern book in her Interactive Notebook.

Activities

Activity 1: How Do We Count By 10s?

Show the following number sentence on an index card: $1 + 10 = 11$. Ask: What does this number sentence mean? Be sure that your child understands that it means we're adding 10 to 1 or counting up by 10 from 1. Ask her to prove the answer 11 is correct by counting up on the interactive number grid at the following web link. Be sure that she counts the steps between numbers so that she ends up on 11.



Interactive Number Chart

www.beyondthepage.com/link/5221/

Your child can use this number grid to mark numbers and count up and back, showing patterns in different colors.

Pose and discuss: "Can we count by 10 from any number? How do you know?"

Now, show the following number sentences on separate index cards:

$$11 + 10 = 21$$

$$21 + 10 = 32$$

$$31 + 10 = 43$$

Are these answers right? (Only the first one is right.) Ask your child to check the answers using the interactive number grid. Observe as your child counts up by ten from each number. She may use different colors for the numbers she comes to while counting by 10s. Are all of the answers correct? If not, what are the correct answers? (21, 31, 41)

She can also check the answers using the abacus. Remind her to move the beads on the abacus from left to right as she counts them. For the first problem, $11 + 10 = 21$, she should move 10 beads to the right on the first row and one bead to the right on second row. This shows 11. Then she should move 10 more beads to the right by moving the remaining nine beads on the second row and an additional one bead to make 10 on the third row. She should now see 21 beads on the right side of the abacus, making 21 the correct answer. She can repeat this process for the other given number sentences.

Pose and discuss: "What do you notice happening to the numbers when we count up by 10? Is this true with any number? Let's prove it."

Ask your child to pick any number below 50 on the interactive number grid and color that number. Starting at the selected number, count up 10. Color that number. What happened? Count up another 10, and another, coloring each number. What pattern do you notice?

What do you think happens when we count back by 10? Allow time for your child to discover the answer using the interactive number grid and colors as needed.

Activity 2: I Can Count Up and Back by 10!

Your child will practice counting up and back by 10 in this activity. Choose an option for her to complete. Option 1 is the easier option.

Option 1

Give your child the I Can Count Up and Back by 10!" (Option 1) sheet and help her fill out the first line. Tell her that when the number in the first star is less than 50, she will count up by 10 from the first number. If the number is greater than 50, she will count backward by 10. Some blanks are filled in to provide support.

Option 2

Using a deck of number cards 1-100, your child will draw a card and count up by 10 from that number if the number is less than 50. She will count back by 10 if the number is greater than 50. Tell her to write the number on the card in the first space provided in each row on the "I Can Count Up and Back by 10!" (Option 2) sheet. Then, she'll write the numbers she comes to when she counts either up or back by 10. If she draws 23, she will record 33, 43, 53 If she draws 75 she would list 65, 55, 45.... Ask her to repeat this process 10 times until all the rows on the sheet are filled.

Day 2

Activity 3: Problem Solving with 10

Warm up by asking your child to choose a card from a deck of 1-100 number cards. What number do you get when you count up by 10? What number do you get when you count down by 10? Repeat several times

making sure that the answers fall within 1 and 100. At this point, your child should be able to mentally add and subtract 10 from any two-digit number without counting.

You have two options for the "How Many?" problems. The first option is slightly more concrete than the second one because your child is required to count by 10 from 0 rather than another number.

Read the problem aloud to your child. As she works with each problem, discuss what she knows about it: "What do you know? What else do you need to know?" Discuss the months of the year and look at a calendar as needed. Allow her to use a number grid and/or the abacus to solve the problem. She can also draw or write numbers on the "How Many?" sheet to show her work. You can pose additional questions as well, such as "How many books will Kevin read if he reads another 10 books next month? And the next?"

Option 1

Kevin has read 10 books each month since January, and now it's the last day of April. How many books has Kevin read so far this year? (answer: 40 books)

Steffi wants to walk more minutes each week. She begins by walking 10 minutes the first week and then sets a goal of adding 10 minutes more each additional week. How many minutes should she be walking in 3 weeks? (answer: 30 minutes) What about in 5 weeks? (answer: 50 minutes)

Option 2

Kevin decided that he wanted to read 10 books each month this year, but in January he only read 6. After that he read 10 books each month. How many books did Kevin read from January until the end of June? (answer: 56 books)

Steffi makes a plan to improve her walking time each week. The first week, she will walk 8 minutes. After that, she plans to walk 10 minutes each week. If she sticks to her plan, how many minutes will she walk in 4 weeks? (answer: 38 minutes) What about in 6 weeks? (answer: 58 minutes)

Activity 4: Hundreds Chart Game

Your child will play the game at the following web link. This game shows a blank number grid and asks you to find a number. As she plays the game, ask her how she's using what she knows about patterns in numbers to place the numbers where they should go.



Hundreds Chart Game

www.beyondthepage.com/link/5225/

Click on the red arrow to start.

Wrapping Up

Let your child pick a number less than 10, and take turns naming the next number that you come to when counting up by 10s to 100 (but not beyond 100). For example, if she picks the number 6, you will take turns counting up by 10, saying the following numbers: 16, 26, 36, 46, 56, 66, 76, 86, and 96. Repeat with different numbers. Next, reverse the process by counting back by 10s beginning with a number between 90 and 100.

Finally, call out each of the following numbers to your child, and ask her to write the words on a sheet of paper: six, seven, eight, nine, ten. Keep track of any numbers she misspells. For any misspelled words,

have her copy the correct spelling and practice writing it.

Learning Gates

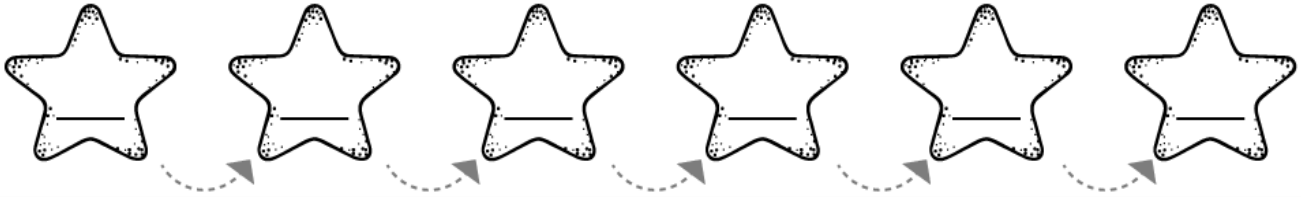
Have your child take the [Learning Gates quiz](#) for this lesson.

I Can Count Up and Back by 10!



66	<u> </u>	46	<u> </u>	26	<u> </u>
37	<u> </u>	57	<u> </u>	<u> </u>	<u> </u>
81	<u> </u>	61	<u> </u>	41	<u> </u>
2	12	<u> </u>	<u> </u>	<u> </u>	52
94	84	<u> </u>	<u> </u>	<u> </u>	44
55	<u> </u>	<u> </u>	<u> </u>	<u> </u>	5
73	<u> </u>	<u> </u>	43	<u> </u>	23
18	<u> </u>	38	<u> </u>	<u> </u>	68
26	<u> </u>	<u> </u>	<u> </u>	<u> </u>	76

I Can Count Up and Back by 10!



How Many?

Kevin has read 10 books each month since January, and now it's the last day of April. How many books has Kevin read so far this year?



Steffi wants to walk more minutes each week. She begins by walking 10 minutes the first week and then sets a goal of adding 10 minutes more each additional week. How many minutes should she be walking in 3 weeks? What about in 5 weeks?



How Many?

Kevin decided that he wanted to read 10 books each month this year, but in January he read only 6. After that he read 10 books each month. How many books did Kevin read from January until the end of June?



Steffi makes a plan to improve her walking time each week. The first week, she will walk 8 minutes. After that, she plans to walk 10 minutes each week. If she sticks to her plan, how many minutes will she walk in 4 weeks? What about in 6 weeks?

