

Building to 100

Building and Decomposing Numbers

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Published by *Oklahoma Young Scholars/Javits*

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Grade Level	1st Grade	**Time Frame**	2-3 sessions
Subject	Mathematics	**Duration**	90 min.
Course	Elementary Mathematics		

Essential Question

Is there more than one way to represent a number?

Summary

Students will build, read, and write numbers to 100 using a myriad of math manipulatives. In this lesson, students will learn there are different ways to create the same number.

Snapshot

Engage

Students listen to the song "I Can Show Numbers in So Many Ways" by Jack Hartmann and then create a list or chart of the different ways to show numbers.

Explore

Students enjoy building and writing two-digit numbers using dice as they participate in a Scoot activity.

Explain

As a class, students create an Anchor Chart listing the six specific ways of building and writing a number.

Extend

Students scoop beans or beads and estimate the number. Then, they write and build numbers with a variety of math manipulatives.

Evaluate

Students are assessed in small groups, with the teacher choosing a number appropriate for each student to read, build, and complete a Frayer Model format.

Standards

Oklahoma Academic Standards for Mathematics (Grade 1)

1.N.1.3: Read, write, discuss, and represent whole numbers up to 100. Representations may include numerals, addition and subtraction, pictures, tally marks, number lines and manipulatives, such as bundles of sticks and base 10 blocks.

Attachments

- Building Number Frayer Handout.docx
- Building Number Frayer Handout.pdf
- Building Number Frayer Handout—Building to 100 - Spanish.docx
- Building Number Frayer Handout—Building to 100 - Spanish.pdf

Materials

- "I Can Show Numbers in So Many Ways" song
- Digit Number Generator (link included)
- Building Numbers Frayer handout (attached; one per student)
- Chart paper
- Dice
- Base 10 blocks (rods and units)
- Small whiteboards and d
  ry erase markers
- Penny and dime manipulatives
- Ten Frames
- Two-sided counters, b
  eads or beans
- Small measuring cups
- Buckets or gallon-sized bags for beads

20 minutes

Engage

On the carpet, ask students, "*Is there more than one way to represent a number?*" Explain that "represent" can mean to write, build, draw, etc. Allow different students to answer *"yes"* or *"no"* and give examples. Invite students to share other ways during this time. Once several students have responded, have them listen and watch the song "I Can Show Numbers in so Many Ways" by Jack Hartmann.

Next, have the students turn and talk to a partner about the different ways they saw numbers represented. After a minute or two of discussion, have a class-wide brainstorming session on the different ways they saw numbers represented, and have them write their examples on a piece of chart paper. The video shows *Numeral, 5-frame, 10-frame, tallies, number-line, words, pictures, dice, domino, and finger*.

One way to organize the students' responses is to build a class Anchor Chart. Here is one example:



After they have listed the different ways that numbers were represented in the song, ask the students if they have ever seen numbers represented in a way that was not in the song. Include these examples on the Anchor Chart. Possible responses might include *beads, sticks, adding two numbers together, money, bears, counters, linking cubes, number sentences, and drawings.*

At the end of the lesson, replay the song and encourage students to dance and sing to the music.

30 minutes

Explore

Teacher's Note

Have tables set up with math manipulatives, number writing activities, and dice before the lesson begins. Using dice helps the students stay engaged in the task because they can continue to roll and create new numbers throughout the 5-minute rotation.

At the beginning of the Explore phase, have students work through a Scoot activity. Model each table's activity before starting the Scoot. After modeling each task, number students 1-5 and have them go to the table that matches their assigned number. Give students 5 minutes to complete their number task at the table, then ring the bell (or transition you have in your room) to "scoot" to the following table.

Here are the Scoot activities:

Table 1: Students roll two dice to create a two-digit number, then build that number with pennies and dimes.

Table 2: Students roll two dice to create a two-digit number, then write tally marks on a dry erase board to represent that number.

Table 3: Students roll two dice to create a two-digit number, then use base ten blocks to build that number.

Table 4: Students roll two dice to create a two-digit number, then build the number with 2-sided counters on laminated double ten frames.

Table 5: Students roll two dice to create a two-digit number, then use beads (or beans) to build the number (sorting into 10's and 1's).

20 minutes

Explain

Back on the carpet, talk about what happened during the Scoot activity. Have them consider the activity: What did they do? In what different ways were the numbers represented?

As a class, create another Anchor Chart that shows just six different ways to represent a number. First, write the number in numeral and word form in the middle of the paper. Then in each corner, invite students to represent that number differently using base-ten form, expanded form, tally marks, and ten frames.

Use the two-digit number generator to generate the numbers.

As you continue to generate numbers, have students record on individual dry erase boards the different ways they have learned. Ask them to check their work with an Elbow Partner.

20 minutes

Extend

Teacher's Note

At each table, have small measuring cups and a bucket of beads or beans to scoop. It is helpful for students to have a paper plate or tray to place their beads.

Have students take one turn scooping their beads and carefully pouring them out in front of them to be sorted into 10s and 1s.

Before counting, have students estimate how many beads they have scooped and write their estimate on their recording sheet. After estimating, have students sort into groups of 10s and the leftover 1s, then record that number on their sheet in numeral form, base 10 form, expanded form, and tally marks.

*Please note that Anchor Charts displaying each of these different number representations can be hung in the room during this stage of learning. Another way of having it modeled is to create a small Frayer Model and place it at each table for students to reference.

10 minutes

Evaluate

Assess students in small groups at the teacher table by choosing a number for students to read, then build and write in a Frayer Model format. Have manipulatives ready for students who still need to make a concrete model before drawing it on their paper.

Replay the song and encourage students to dance and sing to the music.

Opportunities for Advanced Learners

Once students have mastered building the numbers with manipulatives, have them make the same number with the same manipulative differently. For example, "I see you have built the number 53 with 5 rods and three units. While that is correct, how might you build that same number differently using base ten blocks?" For example, show students that 53 could be built with 4 rods and 13 units.

"Can you build the same number in different ways with other manipulatives? For example, what is another way to build 53 with dimes and pennies?"

When students understand the concept of using a variety of manipulatives to achieve the same answer, they can solve the problem in different ways and connect back to addition. For example, "Yes, 4 rods and 13 units equals 53. If I wrote that in a number sentence, it would be 40+13=53."

Resources

- Eduprints Plus. (2018, 23 October). "Numeracy for children— Educational toys— Wooden number blocks." https://www.flickr.com/photos/144975701@N08/45573260342
- Jack Hartmann Kids Music Channel. (2017, 29 October). I can show numbers in so many ways. Video. [YouTube]. https://www.youtube.com/watch?v=lAQ2HTqTl2w
- K20 Center. (n.d.). Anchor charts. Strategies. https://learn.k20center.ou.edu/strategy/58
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- Number Generator.org. (n.d.). Number generator. https://numbergenerator.org/randomnumbergenerator/1-100
- Planchon, Heather. (2020, Aug 24). The Primary Party. Ways to show number anchor chart. https://www.pinterest.com/pin/179369997647259148/