



Visualizing and Constructing Numbers to 1,000

Week at a Glance

This week students begin *Number Worlds*, Level 4, Number Sense. Students should explore different ways to visualize and represent quantities that are equivalent representations for the same number. Students will explore the fundamentals of regrouping.

Math Background

Number sense is difficult to define but easy to recognize. Students with good number sense can move seamlessly between the real world of quantities and the mathematical world of numbers and numerical expressions.

—Robbie Case

How Students Learn

Students' knowledge of counting and quantity becomes more integrated as their experiences in mathematics continue. Students begin to link numbers to quantities and realize that questions about numbers can be answered with or without the use of concrete objects. Teach the number sense units with a focus on *quantity*, not *numbers*.

Teaching for Understanding

Observe closely while evaluating the assigned tasks this week. Students should gradually become less dependent on manipulating concrete objects.

Benchmark after Lesson 2: Students should be able to identify how many hundreds, tens, and ones are in a number or a combination of two numbers.

Benchmark after Lesson 3: Students should be able to make “trades” when constructing numbers to 1,000.

Benchmark after Lesson 4: Students should be able to make a connection between the base-ten number system and money.

Skills Focus










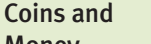

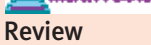
- Recognize equivalent representations for the same number and generate them by composing and decomposing quantities.
- Separate and regroup double-digit and triple-digit numbers into hundreds, tens, and ones.
- Gain experience with regrouping.

Math at Home

Give one copy of the Letter to Home, page 302, to each student. Encourage students to share it and complete the activity with their caregivers.

Week 1 Planner

Visualizing and Constructing Numbers to 1,000

PACING	LESSON	LEARNING GOALS	NCTM	MATERIALS	TECHNOLOGY
DAY 1	DAY 1 1	pages 2–3 Students identify the numbers of tens and ones that compose a two-digit number.	Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.	<ul style="list-style-type: none"> • Base-Ten Blocks • Number Construction Mat, p. 326 • Place Value Mat, p. 327 • Centimeter ruler 	 Number Snapshots  Base Ten Blocks
	DAY 2 2	pages 4–5 Students identify the numbers of hundreds and tens that compose a three-digit number.	Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.	<ul style="list-style-type: none"> • Base-Ten Blocks • Number Construction Mat, p. 326 • Place Value Mat, p. 327 • Numeral Cards 0–9 • 1–6 Number Cube 	 Number Snapshots  Base Ten Blocks
DAY 2	DAY 3 3	pages 6–7 Students use Base-Ten Blocks to construct numbers to 1,000.	Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.	<ul style="list-style-type: none"> • Base-Ten Blocks • Number Construction Mat, p. 326 • Place Value Mat, p. 327 • Numeral Cards 1–25 	 Number Snapshots  Base Ten Blocks
	DAY 4 4	pages 8–9 Students connect the basics of the base-ten number system to money.	Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.	Models of pennies, dimes, dollar bills, and ten-dollar bills	 Coin Combos  Coins and Money
DAY 3	DAY 5 5	Review and Assess pages 10–11 Students review skills learned this week and complete the weekly assessment.	Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.	Materials will be selected from Lessons 1–4.	  Review previous activities

Math Vocabulary

unit block The base-ten block that represents 1 in the base-ten number system.

rod A single block that is equal in size and value to 10 unit blocks.

flat A single block equal in size and value to 10 rods, or 100 unit blocks.

English Learners

SPANISH COGNATES

English
 constructing numbers
 units
 visualizing

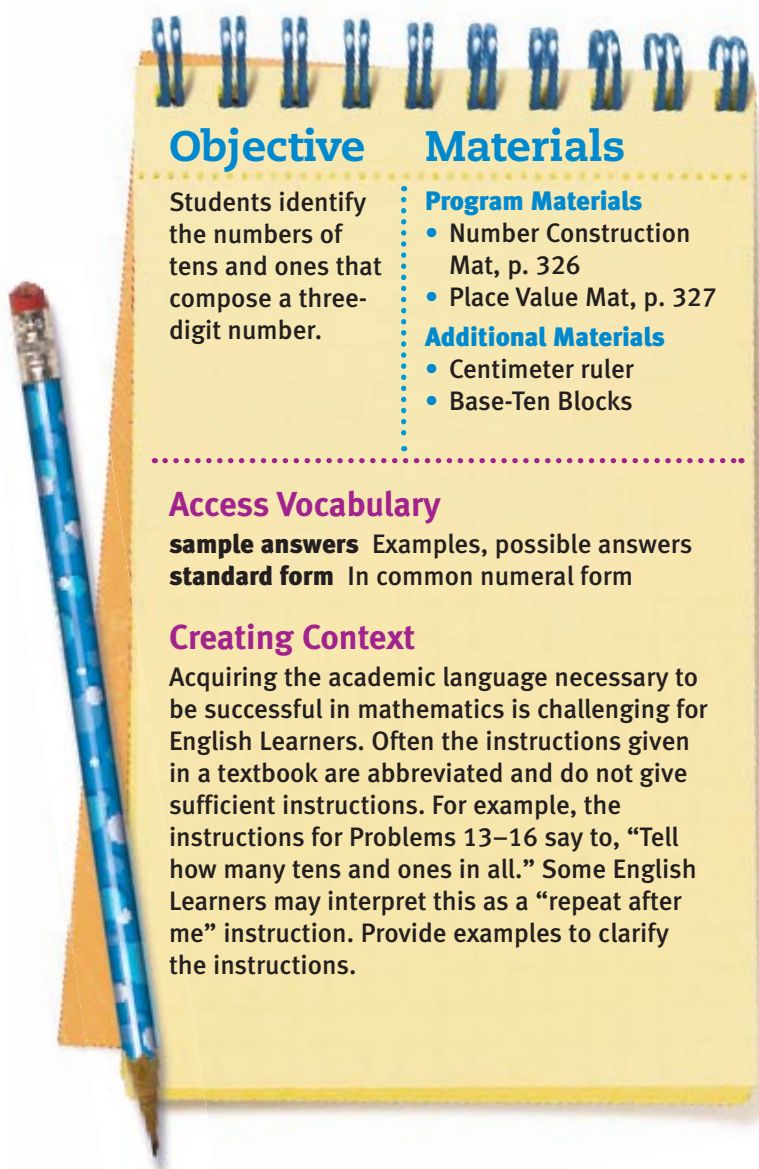
Spanish
 construyendo números
 unidades
 visualizando

ALTERNATE VOCABULARY

trade To exchange 10 blocks of a smaller size for 1 block of the next size block



Lesson 1



Objective

Students identify the numbers of tens and ones that compose a three-digit number.

Materials

- Program Materials**
- Number Construction Mat, p. 326
 - Place Value Mat, p. 327
- Additional Materials**
- Centimeter ruler
 - Base-Ten Blocks

Access Vocabulary

sample answers Examples, possible answers
standard form In common numeral form

Creating Context

Acquiring the academic language necessary to be successful in mathematics is challenging for English Learners. Often the instructions given in a textbook are abbreviated and do not give sufficient instructions. For example, the instructions for Problems 13–16 say to, “Tell how many tens and ones in all.” Some English Learners may interpret this as a “repeat after me” instruction. Provide examples to clarify the instructions.

1

Warm Up

5

Concept Building

Instruct students to take a handful of unit blocks and to group the blocks into sets of 10. Students should skip count by 10s and then count on to name the number their blocks represent. Have students join their blocks with those of another student and regroup the blocks into sets of 10. They should skip count by 10s and count on to name the number represented by both students’ blocks.

2

Engage

15

Give each student a Number Construction Mat and a Place Value Mat. Students also need Base-Ten Blocks.

Skill Building

Modeling

Instruct students to model the quantity 27 on their mats. Check students’ mats.

Instruct students to clear their mats and then model the quantity 27 on their mats in a different way. Some students will use only unit blocks, while others will use unit blocks and rods.

- **What is the same about these models? They each represent 27.**

Point out that both models are correct.

- **Ten ones are the same as 1 ten.**

Strategy Building

Trading

On the Place Value Mat count with the students the number of circles in the ones column.

- **When you put blocks on all 10 circles, what is the lightbulb telling you to do? Trade the 10 ones for 1 ten.**
- Have students model 16 on their mats. Without clearing their mats, place 8 more units. Guide students as they trade to get 2 rods in the tens column and 4 unit blocks in the ones column.
- Have students transfer the blocks onto the Number Construction Mat and name the number as 24.
- Have students model and trade the following: 12, and then 9 more; 24, and then 6 more; and 19, and then 5 more.

Monitoring Student Progress

If . . . a student is trading too soon, **Then . . .** encourage the student to label the circles from 1 (beginning at the bottom) to 10 on the Place Value Mat.

