

## Lesson Objectives

## Content Objectives

- Count on from any number on the 120 chart.
- Identify missing numbers in a sequence within 120.
- Count by 10s within 120.

## Language Objectives

- Read and circle numbers in a 120 chart and describe patterns.
- Tell how to start from a given number and find 1 more than that number.
- Count groups of ten objects to find the total number of objects.

## Prerequisite Skills

- Count by ones.
- Count by tens.
- Add one to any number.
- Decompose a teen number into a ten and some ones.

## Standards for Mathematical Practice (SMP)

SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the *Try-Discuss-Connect* routine.\*

In addition, this lesson particularly emphasizes the following SMPs:

- 5** Use appropriate tools strategically.
- 7** Look for and make use of structure.
- 8** Look for and express regularity in repeated reasoning.

\*See page 431i to see how every lesson includes these SMPs.

## Lesson Vocabulary

There is no new vocabulary. Review the following key terms.

- **column** groups of objects or numbers that go from top to bottom.
- **row** a group of objects or numbers that go from left to right.
- **tens** groups of 10 ones.

## Learning Progression

**In Kindergarten** children learn the relationship between a quantity of objects and the number representing the quantity. They understand that the last number name said tells the number of objects counted. They count to 100 by 1s and 10s, count up from a given number, and write numbers from 0 to 20.

**In Grade 1** children understand counting as a thinking strategy. They relate counting on to addition and subtraction and counting back to subtraction. They relate

the counting sequence to the cardinality of numbers: each number is one more or one less than the number after or before. Children read and write numbers from 1 to 120 and use strategies that involve 10 as a benchmark number.

**In this lesson** children use a 120 chart to count up by 1s from any given number within 120. They look for patterns in the 120 chart that show relationships between numbers. They identify numbers that are 1 more than a given number, and they pick



up the count and continue the counting sequence from any number. They count objects that are in groups of ten with extra ones and relate these quantities to the multiples of 10 on the 120 chart.

**In Grade 2** children count within 1,000 and skip-count by fives, tens, and hundreds. Children read and write numbers to 1,000. They identify groups as having an odd or even number of objects.

# Lesson Pacing Guide

Teacher Toolbox 

## Whole Class Instruction

<b>SESSION 1</b> <b>Explore</b> 45–60 min	<b>Counting to 120</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Try It 20 min</li> <li>Connect It 15 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Additional Practice</b> Lesson pages 453–454
<b>SESSION 2</b> <b>Develop</b> 45–60 min	<b>Counting to 120</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Try It 15 min</li> <li>Discuss It 10 min</li> <li>Model It 5 min</li> <li>Connect It 10 min</li> <li>Apply It 5 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Additional Practice</b> Lesson pages 459–460  <b>Fluency Practice</b> Count by Ones and Tens
<b>SESSION 3</b> <b>Develop</b> 45–60 min	<b>Counting to 120</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Try It 15 min</li> <li>Discuss It 10 min</li> <li>Model It 5 min</li> <li>Connect It 10 min</li> <li>Apply It 5 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Additional Practice</b> Lesson pages 465–466  <b>Fluency</b>  Counting to 120
<b>SESSION 4</b> <b>Refine</b> 45–60 min	<b>Counting to 120</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Apply It 35 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Additional Practice</b> Lesson pages 469–470
<b>SESSION 5</b> <b>Refine</b> 45–60 min	<b>Counting to 120</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Apply It 15 min</li> <li>Small Group Differentiation 20 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Lesson Quiz</b>  or <b>Digital Comprehension Check</b>

## Small Group Differentiation

### PREPARE

#### Ready Prerequisite Lessons

##### Grade K

- Lesson 27 Count Teen Numbers
- Lesson 29 Count to 100 by Tens
- Lesson 30 Count to 100 by Ones

### RETEACH

#### Tools for Instruction

##### Grade K

- Lesson 27 Count Teen Numbers
- Lesson 28 Make a Set Up to 20 Objects
- Lesson 30 Count Forward by Ones

##### Grade 1

- Lesson 20 Patterns on the Hundreds Chart

### REINFORCE

#### Math Center Activities

##### Grade 1

- Lesson 20 Counting Vocabulary
- Lesson 20 Count to 120

### EXTEND

#### Enrichment Activity

##### Grade 1

- Lesson 20 Helping Hank



## Independent Learning

### PERSONALIZE

#### i-Ready Lessons\*




##### Grade 1

- Practice: Order Numbers 1 to 20
- Order Numbers to 120
- Practice: Order Numbers to 120

#### Learning Game

- Prerequisite: *Hungry Guppy*

## Lesson Materials

<b>Lesson</b>	<i>Per child:</i> base-ten blocks (4 tens rods, 2 ones units), crayons (red, blue, green), copy of Start slide (Sessions 1, 3, and 5), copy of Close slide (Sessions 1–2 and 5) <i>Per pair:</i> 1 counter <i>Activity Sheet:</i>  120 Chart**
<b>Activities</b>	<i>Per pair:</i> base-ten blocks (10 tens rods, 9 ones units), crayons <i>Activity Sheet:</i>  120 Chart**
<b>Math Toolkit</b>	base-ten blocks, 120 charts
<b>Digital Math Tools</b> 	Base-Ten Blocks, Counters and Connecting Cubes

\*\*Used for more than one activity.

\*We continually update the Interactive Tutorials. Check the Teacher Toolbox for the most up-to-date offerings for this lesson.

# Connect to Family, Community, and Language Development

The following activities and instructional supports provide opportunities to foster school, family, and community involvement and partnerships.

## Connect to Family

Use the **Family Letter**—which provides background information, math vocabulary, and an activity—to keep families apprised of what their child is learning and to encourage family involvement.

Available in Spanish  
Teacher Toolbox

### Counting to 120



#### Dear Family,

This week your child is learning about counting to 120.

Your child will learn to count to 120, starting at any number less than 120. He or she will recognize that these numbers are made up of tens and ones. He or she will also count groups of up to 120 objects.

Your child will explore counting using a 120 chart. A 120 chart shows the numbers 1–120 in rows of ten. Your child will learn that a 120 chart has rows and columns with numbers in certain patterns. He or she will become familiar with the numbers to 120, count on from a given number, and learn to use the chart to find numbers that are 1 more than any given number.

Using the 120 chart will help your child understand the relationships between numbers, as well as prepare to add and subtract two-digit numbers.

61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Invite your child to share what he or she knows about using a 120 chart by doing the following activity together.

449

### Activity Counting to 120

Do this activity with your child to explore counting to 120.

**Materials** 120 chart

Have your child use the 120 chart to help as you give prompts such as:

- Say a number and have your child locate it on the chart.
- Point to a number and ask your child to say the number.
- Ask your child to point out patterns they see in rows and columns.
- Ask questions such as: *What is one more than 109?*
- Choose a starting number for your child to count on from, either for a short range or all the way up to 120.

Draw a number of objects. Have your child count the objects and then find the number on the 120 chart.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

450

#### Goal

The goal of the Family Letter is to familiarize children with a 120 chart and to have them notice relationships among numbers as they begin to recognize that two-digit numbers are made up of tens and ones.

#### Activity

Look at the *Counting to 120* activity and adjust it if necessary to connect with children.

#### Math Talk at Home

Encourage children and their family members to look for familiar items in their homes and communities that can be counted in groups of ten up to 120, such as coins, library books, cars in a parking lot, or pieces of a puzzle.

**Conversation Starters** Below are additional conversation starters children can write in their Family Letter or math journal, with your guidance, to engage family members:

- *Where is the number \_\_\_\_\_?*
- *What is the number?*
- *Do you see a pattern?*

## Connect to Community and Cultural Responsiveness

Use these activities to connect with and leverage the diverse backgrounds and experiences of all children.

### Session 1 Use with *Connect It*.

- Activate background knowledge by asking children to think of a time when they have asked for “one more” of something at home or school. Have them turn and tell their neighbor what they wanted one more of. Examples might include: a *cookie*, a *cracker*, a *television show*, a *toy*.

### Session 2 Use with *Apply It*.

- Divide the class into 12 groups and have children use total physical recall by doing 120 light exercises in groups of ten while counting aloud. For example, have children do jumping jacks. The first group starts at one and stops at ten. The second group continues with 11–20. The third group continues with 21–30 and so on up to 120. Have children examine a 120 chart and show which row of exercises their group completed.

### Sessions 3 and 4 Use anytime during the sessions.

- Lead children in a call-and-response activity in which you call out three consecutive numbers from the 120 chart and they respond with the next three numbers in the sequence. Engage children by using different voices for each round (such as a whisper, a deep voice, a robot voice, an opera singer voice).

### Session 5 Use with *Apply It*.

- Use paper or sidewalk chalk to draw a number path on the ground with numbers 100–120. Place large construction paper shapes such as a heart, triangle, square, and circle randomly over numbers on the path. Group children in foursomes and have them take turns hopping on the path as their group says each number that is showing. When they reach a shape, have the other group members pause and wait for the jumper to call out the hidden number.

## Connect to Language Development

For ELLs, use the Differentiated Instruction chart to plan and prepare for specific activities in every session.



English Language Learners:  
Differentiated Instruction

Prepare for Session 1  
Use with *Try It*.

### Levels 1–3

**Speaking/Listening** Model counting from 100 to 104 aloud as children follow along on the 120 chart in *Try It* with their fingers. Say: *One hundred one, one hundred two, one hundred three, one hundred four*. Have children count on chorally from 105 to 109, focusing on pronunciation. Listen to ensure that children are not saying “and” between one hundred and the ones. Model counting from 110 to 115 in the same way. Encourage children to count on chorally to 120. For additional pronunciation practice, put children in small groups and have them take turns counting the numbers in sequence from 100 to 120.

### Levels 2–4

**Reading/Speaking** Pair children up to complete the *Try It* problem. Write this sentence starter on the board: *What pattern do you notice in the \_\_\_\_\_?* Give each group four notecards with the following terms: *rows, columns, tens, ones*. Place the cards facedown and have partners take turns choosing a card and using the term to complete the question. The other partner should look for a pattern on the 120 chart and respond in a complete sentence. For example, Partner A asks: *What pattern do you notice in the rows?* Partner B responds. [Possible answer: In the rows, the tens place is the same until the last number in the row.]

### Levels 3–5

**Reading/Speaking** After children fill in the missing numbers in the *Try It* problem individually, gather them in groups of three. Give each group a set of notecards with the following terms: *row, column, pattern, sequence, one more*. Place the cards facedown and have children take turns selecting a card and providing a definition of the word in a complete sentence. In addition to the definition, ask children to give an example of the term using the 120 chart for graphic support.

**Purpose** In this session, children act out the counting sequence from 1 to 10 and use it to understand repeating patterns in counting numbers up to 120. They count on a 120 chart from given numbers and fill in missing numbers in sections of the 120 chart.

**Start**

**Develop Fluency**

**Materials** For each child: copy of printed slide

**Why** Build counting fluency with numbers through 20 and review picking up the count sequence from any number to prepare children for using counting patterns with greater numbers.

**How** Complete counting sequences with missing numbers by filling in blanks before and after designated numbers.

Fill in the missing numbers.

1, 2, 3, 4, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
 5, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
 \_\_\_\_\_, 16, 17, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Solutions**

5, 6, 7, 8  
 6, 7, 8, 9, 10  
 15, 18, 19, 20

**Try It**

**Materials** For display: Activity Sheet 120 Chart

**Act Out Counting 1 to 10**

Arrange 10 chairs in a row at the front of the classroom. Have 10 children stand in front of the chairs.

Together with the class, count aloud from 1 to 10 as the children sit down in the chairs one by one.

When the number 10 is reached, the class repeats "10" again. Beginning with the first child, continue counting 11–20 with each child standing up for the next number. When 20 is reached, the class repeats "20" again. Continue alternating sitting and standing and complete several rows like this. Listen for children to notice that the ones digit is the same for each child every time she stands or sits for a number.

Have volunteers return to their seats and then point to the first row of the 120 chart.

**Learning Target**

• Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

**SMP** 1, 2, 3, 4, 5, 6, 7, 8

**How can you count on a 120 chart?**

**Fill in the missing numbers.**

**Try It**

**Math Toolkit**

• base-ten blocks

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	<b>30</b>
31	32	33	34	35	36	37	38	39	40
41	42	43	<b>44</b>	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	<b>78</b>	79	80
81	82	83	84	85	86	87	88	89	90
<b>91</b>	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

**Analyze the 120 Chart**

**Ask** How does this row of the 120 chart relate to the activity we just completed?

**Listen for** The row of 10 chairs is like the row of 10 numbers on the chart.

**Ask** What numbers does this whole chart start and end with? [1 and 120] How do you think you can count numbers greater than 100?

**Listen for** Start over with 1, 2, 3, etc., but say "one hundred" before each number.

Have children fill in the missing numbers in the 120 chart on the Student Worktext page.

**Common Misconception** If children are unsure about the missing numbers, then begin several numbers before the empty square. Count aloud as you point to each number to set up the pattern of the count sequence approaching the missing number.

**Support Whole Class Discussion**

Have children explain how they filled in each missing number.

**Ask** What patterns on the 120 chart helped you fill in the missing numbers?

**Listen for** All the numbers in the first column end in 1; in the last column they end in 0; counting on from 70 is like counting 1 to 10 except each number starts with seventy.

## Connect It

### Examine Sections of the 120 Chart

Have children write the numbers to complete these sections of the 120 chart. Encourage children to share how they decided.

After children have filled in all missing numbers have them compare their answers with a partner.

### Support Whole Class Discussion

Point to the last two rows of the 120 chart.

**Ask** How are these two rows different from the other rows in the 120 chart?

**Listen for** They all have 3 digits. They are all numbers greater than 100.

**Ask** How do you think you can count numbers greater than 100?

**Listen for** Start over with 1, 2, 3, and so on, but say “one hundred” before each number: 101, 102, 103, and so on.

Model precise language by omitting the word “and” between the word one hundred and the rest. Correct example: one hundred one, one hundred two, one hundred three, etc.

## Connect It

Write the missing numbers.

31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60

81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110

452

## Close: Exit Ticket

**Materials** For each child: copy of printed slide

Have children fill in the missing numbers on the section of the 120 chart.

Fill in the missing numbers.

	22	23	24	25	26	27	28	29	30
31		33	34	35	36	37	38	39	40
41	42		44	45	46	47	48	49	50
51	52	53		55	56	57	58	59	60
61	62	63	64		66	67	68	69	70

### Solutions

21; 32; 43; 54; 65

**Listen for** Children may notice that these numbers form a diagonal line on the chart. They may also comment on how the ones digits of these numbers increase by 1 each row, and the tens digits also increase by 1 each row.

**Common Misconception** If children have difficulty tracking from one row to the next, **then** have them color-code each multiple of 10 with the next 9 numbers.



### Real-World Connection

Encourage children to think about everyday places or situations where people might need to count numbers more than 100. Have volunteers share their ideas. Examples: children in a school; books on a library shelf; passengers on a train.


**Prepare for Counting to 120**

1 Think about what you know about counting starting from any number. Fill in each box.

Use words, numbers, and pictures.

Show as many ideas as you can.

Possible answers:

<p>In My Own Words</p> <p>a number that is 1 greater than the one before it</p>	<p>My Pictures</p>  <p>1 more than 4</p>
<p>Examples</p> <p>1 more than 3 is 4. 1 more than 5 is 6.</p>	<p>Non-Examples</p> <p>2 more than 3 is 5. 1 less than 3 is 2.</p>

**one more**

2 There are 5 counters. Draw one more counter. Now how many counters are there?



6 counters

**Solutions**

**Support Vocabulary Development**

1 Read the problem aloud as children follow along with their fingers. Have children point to the term *one more* in the center of the Frayer Model. Pair them up to complete the graphic organizer. When children have responded to each section, combine two pairs to form a group of four. Have the partners take turns explaining their definitions, pictures, examples and non-examples. If children get new ideas from the other set of partners, encourage them to add the ideas to their graphic organizers.

2 Have children use the following sentence frame to express their answer in a complete sentence:

6 is one more than 5.

**Supplemental Math Vocabulary**

- column
- row

- 3 Assign problem 3 to provide another look at counting on the 120 chart.

This problem is very similar to the problem about writing the missing numbers on a 120 chart. In both problems, children are given portions of the 120 chart with some numbers missing. The question asks children to write the missing numbers on the 120 chart.

Children may want to use a 120 chart, base-ten blocks, or toothpicks.

Suggest that children read the problem three times, asking themselves one of the following questions each time:

- *What is this problem about?*
- *What is the question I am trying to answer?*
- *What information is important?*

**Solution:**

20; 23; 37

95; 103; 110; 116; 117

**Medium**

- 3 Write the missing numbers.

11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

454

**ELL** English Language Learners:  
Differentiated Instruction

**Prepare for Session 2**  
Use with *Model It*.

**Levels 1–3**

**Listening/Reading** Read the *Model It* problem aloud as children follow along with their fingers. Reread each sentence, pausing for children to point or respond in simple phrases. Say: *Start at 106 on the 120 chart. Point to where you will start. (Pause) Count out loud. (Pause) Circle the next three numbers in the row. Point to the numbers you will circle. (Pause) Have children work with a partner, taking turns reading the problem aloud as their partner points and counts.*

**Levels 2–4**

**Listening/Writing** Pair children up to complete the *Model It* problem. After children read the problem, ask: *Where do you start?* [Start at 106.] *What do you do next?* [Count on 3.] *What do you do after that?* [Circle the next three numbers in the row.] Have children cover the words of the *Model It* problem with a sticky note. Ask them to cowrite the steps used in the problem. If children need additional support, write the three questions on the board to guide them: *Where do you start? What do you do next? What do you do after that?*

**Levels 3–5**

**Reading/Writing** Pair children up to complete the *Model It* problem. Direct their attention to the three sentences that explain the steps used in the *Model It* problem. Have them write the sequencing words *first*, *next*, and *then* in front of each sentence and reread the problem with the new words. *First, start at 106 on the 120 chart. Next, count out loud the next three numbers. Then, circle the three numbers you just said.* Tell partners to use the sentences as a guide to cowrite steps for counting on three from a number of their choice.



**Purpose** In this session, children use what they know about counting and patterns in the number sequence to identify the next three numbers after 106. The purpose of this problem is to strengthen children’s abilities to pick up the count at any number and continue it through 120.

## Start

### Connect to Prior Knowledge

**Why** Review identifying the number that is 1 more than a given number, including crossing a decade number to help with counting by ones.

**How** Find the numbers described on the slide.

1 more than 10 is ____.	11
1 more than 11 is ____.	12
1 more than 19 is ____.	20
1 more than 20 is ____.	21

### Solutions

### Develop Language

**Why** Support understanding of the sentence starter in *Discuss It* by clarifying the meaning of the word *notice*.

**How** Read the sentence frame aloud. Explain that *noticed* is the past tense of *notice*. Define *notice* as “to see or observe.” Have children look around the classroom. Ask: *What did you notice?* Have children practice using the sentence stem to describe what they noticed when they looked around the classroom.

## Try It

### Make Sense of the Problem

Read the problem aloud. To support children in making sense of the problem, prompt them to relate the problem to the previous session.

**Ask** *How is this problem like the ones you did in the previous session?*

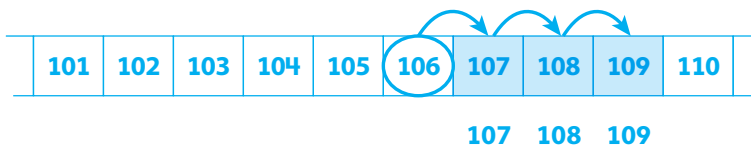
# Develop Counting to 120

**Celia counts by ones up to 106. Then she continues counting. Which three numbers does she say next?**

## Try It

Possible student work:

Sample A



Sample B

7, 8, 9  
107 108 109

**Math Toolkit**

- 120 charts
- counters

**DISCUSS IT**  
I noticed ...

## Discuss It

### Support Partner Discussion

Encourage children to say the numbers out loud as they count.

Support as needed with questions such as:

- *What did you notice about your partner’s approach?*
- *Do you agree with your partner?*
- *Can you explain why those are the next three numbers?*

**Common Misconception** If children are unsure about counting numbers greater than 100, **then** allow them to refer to the 120 chart to find the number 106, point to the next three numbers, and then try to name the next three numbers.

## Select and Sequence Solutions

One possible order for whole class discussion:

- recreate the row beginning with 101 and identify 106 and the next three numbers
- notice similarities in the pattern of counting by 1s: 6, 7, 8, 9; 106, 107, 108, 109

## Support Whole Class Discussion

**Compare and connect** different ways of identifying the numbers and how they are related.

**Ask** *Where else in the 120 chart do you notice this same counting pattern?*

**Listen for** All rows have a 6, 7, 8, 9 with different starting numbers: 46, 47, 48, 49; 96, 97, 98, 99.

## Model It

**If no child presented the model** shown on the Student Worktext page, connect the number chart model to the children's models by having children identify how to represent the problem.

**Ask** *Where do we find the number 106 in the 120 chart?*

**Listen for** It is in the row below the 90s; it comes after 105; it is in the row that starts with 101.

**Ask** *How do you know what the next three numbers are?*

**Listen for** I don't count 106 again, but I look in the same row next to 106 to circle the 3 numbers that come after it.

**Ask** *What three numbers would come next if Celia started at 116?*

**Listen for** The next three numbers are 117, 118, 119.

**Celia counts by ones up to 106.**

**Then she continues counting.**

**Which three numbers does she say next?**

## Model It

Which three numbers come after 106?

Celia counts on 107, 108, 109.

Start at 106 on the 120 chart.

Count out loud.

Circle the next three numbers in the row.

91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

456

## Deepen Understanding

### Patterns in the 120 Chart

**SMP 7** Look for structure.

Studying the relationship between the numbers on the 120 chart helps children connect the numbers to the place value concepts of tens and ones.

**Materials** For display: Activity Sheet *120 Chart*

**Ask** *How do the numbers change in each row? In each column?*

**Listen for** In each row the ones count up from 1 to 9, until the last number, which ends in zero. In each column, the number of tens (or the first digit of each number) increases by 1 every time you go down a row.

**Ask** *Look at the third row in the 120 chart. How are the numbers alike? How are they different?*

**Listen for** All of the numbers begin with a 2 (2 tens) except for the last number, which begins with a 3 (3 tens). The second digit in each number counts up by 1 as you go across the row.

**Generalize** *How can the patterns in the 120 chart help with counting? Listen for children to connect counting to the patterns of how the numbers change.*

**Connect It****Support Whole Class Discussion**

Ask children to look at how they solved the problem and compare it to the number chart in *Model It*.

- 1 Help children make sense of the number chart solution by comparing it to their own.

**Ask** *How did you find the numbers after 106?*

**Listen for** Children may describe how they counted on from 106 to 109 by relating it to the series of numbers 6, 7, 8, 9. They may comment on how counting “starts over” in a slightly different way after reaching the number 100.

- 2 **Ask** *How can the 120 chart help you count numbers greater than 100?*

**Listen for** It can help me keep track of my counts. I know that the numbers in a row go up by ones. The patterns in all the rows of the number chart are the same, whether you count in the 20s row, the 30s row, or the 100s row. I can use those patterns when I get to numbers greater than 100.

**Apply It**

Explain that the next problems are an opportunity for children to practice counting with greater numbers.

Make Activity Sheet *120 Chart* available.

- 3 104, 105, 106, 107, 108
- 4 1 more than 94 is 95.
- 5 1 more than 110 is 111.

**Connect It**

- 1 How is your way like **Model It**? How is it different?

**Children may say that they used a number path to count on from 106, while Model It uses a 120 chart.**

- 2 How is counting numbers greater than 100 like counting up to 10?

**Possible answer: The ones digit has the same pattern: 1, 2, 3, 4, 5, 6, 7, 8, 9.**

**Apply It**

Fill in the blanks.

- 3 Count by ones: 104, 105, 106, 107, 108
- 4 1 more than 94 is 95.
- 5 1 more than 110 is 111.

457

**Hands-On Activity**

**Find patterns on the 120 chart.**

**If . . .** children are not comfortable reading all numbers on the 120 chart and counting on from a given number,

**Then . . .** have them use this activity to explore the 120 chart and find and describe patterns.

**Materials** For each pair: crayons, Activity Sheet *120 Chart*

- Provide pairs of children with a 120 chart. Have them work together to find patterns on the 120 chart and color them, using a different color to identify each pattern.
- Have children share their ideas with the class, describing and explaining the patterns they have discovered.
- Different children will describe the same pattern differently. Guide the discussion to be sure all the ideas being suggested are understood.

- 6 97, 98, 99, 100, 101
- 7 69, 70, 71, 72, 73
- 8 80, 81, 82, 83, 84
- 9 1 more than 110 is 111.
- 10 1 more than 119 is 120.

### Support Whole Class Discussion

When children have completed problems 3–10, discuss the answers as a class.

**Ask** How do you use the 120 chart to count on every time you reach the end of a row?

**Listen for** Go down one row to the beginning of the next row and continue on.

### Close: Exit Ticket

**Materials** For each child: copy of printed slide  
Have children fill in the missing blanks in the series of numbers.

Fill in the missing numbers.  
78, \_\_, \_\_, \_\_, \_\_, \_\_, 84

#### Solutions

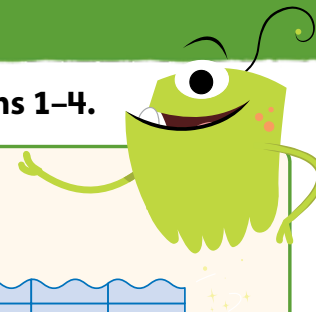
79, 80, 81, 82, 83

61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Fill in the blanks.

- 6 Count by ones: 97, 98, 99, 100, 101
- 7 Count by ones: 69, 70, 71, 72, 73
- 8 Count by ones: 80, 81, 82, 83, 84
- 9 1 more than 110 is 111.
- 10 1 more than 119 is 120.

**Error Alert** If children repeat numbers or skip numbers when crossing over a decade number, **then** help them to see that the pattern in their sequence is not accurate. Cover the rows above and below the row being counted on a 120 chart. When they reach the end of a row, help them to reveal the next row and continue counting.

**Practice Counting to 120****Look at the Example. Then solve problems 1–4.****Example**

Count by ones. Use the chart.

61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90

1 more than 80 is 81. 1 more than 87 is 88.

Count by ones: 78, 79, 80, 81, 82

**1** Fill in the blanks. Use the chart.1 more than 65 is 66.1 more than 72 is 73.**2** Fill in the blanks. Use the chart.Count by ones: 66, 67, 68, 69, 70Count by ones: 85, 86, 87, 88, 89**Solutions****1** 1 more than 65 is 66.

1 more than 72 is 73.

**Basic****2** 66, 67, 68, 69, 70

85, 86, 87, 88, 89

**Medium****Fluency Practice****Count by ones and tens.****Materials** For each pair: Activity Sheet *120 Chart*

- Have pairs use the 120 chart to help them count.
- Pairs take turns counting out loud and pointing to the numbers on the 120 chart.
  - Count by ones from 31 to 38
  - Count by ones from 102 to 110
  - Count by ones from 98 to 105
  - Count by ones from 58 to 65
  - Count by tens from 20 to 100
  - Count by tens from 40 to 120
- Have children make up their own number ranges and alternate counting by ones and tens.

- 3 1 more than 95 is 96. 1 more than 105 is 106.  
 1 more than 99 is 100. 1 more than 109 is 110.  
 1 more than 111 is 112. 1 more than 115 is 116.

**Medium**

- 4 97, 98, 99, 100, 101, 102  
 102, 103, 104, 105, 106  
 115, 116, 117, 118, 119

**Medium**

81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

- 3 Fill in the blanks. Use the chart.

1 more than 95 is 96. 1 more than 105 is 106.

1 more than 99 is 100. 1 more than 109 is 110.

1 more than 111 is 112. 1 more than 115 is 116.

- 4 Fill in the blanks. Use the chart.

Count by ones: 97, 98, 99, 100, 101, 102

Count by ones: 102, 103, 104, 105, 106

Count by ones: 115, 116, 117, 118, 119

460

ELL

**English Language Learners:**  
**Differentiated Instruction**

**Prepare for Session 3**  
 Use with *Apply It*.

#### Levels 1–3

**Speaking/Writing** Read *Apply It* problem 3 aloud to children. Have them work with a partner to find the answer. Write the following sentence frame for them to copy in their math journals:

7 groups of 10 and 5 ones is the same as 75.

Encourage children to practice completing the sentence verbally with their partner before completing it in their journals. Then, read *Apply It* problem 4 aloud. Have partners work together to find the answer. Then have them use the sentence frame to speak and write about the problem.

#### Levels 2–4

**Speaking/Reading** Have children work in pairs to complete *Apply It* problems 3 and 4. Give each pair tens rods and ones units to model the problems. Have one child read problem 3 aloud and build a model like the one pictured. Have the other child complete the number sentence and tell which number to circle on the chart. Then have the children switch roles to complete problem 4. When children have answered both problems, have them each use at least two of the following terms in a sentence about the problems: *tens, ones, groups, count, is the same as*.

#### Levels 3–5

**Speaking/Listening** After children complete *Apply It* problems 3 and 4 individually, have them pair up to discuss what they noticed about the base-ten models and the number chart. If children need support, provide the following terms for them to use in their discussion: *tens, ones, row, column, group, count, is the same as*.

**Purpose** In this session children solve a problem involving counting 113 objects that are grouped into tens and some extra ones. The purpose of this problem is to connect quantities with the count sequence using numbers up to 120.

**Start**

**Connect to Prior Knowledge**

**Materials** For each child: copy of printed slide

**Why** Review teen numbers as ten and some more ones to prepare children for extending place value understandings to greater two-digit numbers.

**How** Complete the number bonds to decompose teen numbers into ten and some ones.

Fill in the number bonds.

15	18	12
10		
11	13	19

**Possible Solutions**

- 15 = 10 + 5
- 18 = 10 + 8
- 12 = 10 + 2
- 11 = 10 + 1
- 13 = 10 + 3
- 19 = 10 + 9

**Develop Language**

**Why** Support children as they verbalize their thinking about counting objects grouped into tens and some extra ones.

**How** Provide children with the following sentence frames to help them express the process they used for counting stars:

I counted by \_\_\_\_\_. Then I \_\_\_\_\_.

I started with \_\_\_\_\_ and counted \_\_\_\_\_.

Then I \_\_\_\_\_.

**Try It**

**Make Sense of the Problem**

Read the problem aloud. To support children in making sense of the problem, prompt them to identify the grouping of the stars.

**Ask** How are the stars arranged? What are you being asked to find?

**Develop** Counting to 120

Pietro has these star stickers in his collection.

How many star stickers does he have?



**Try It**



• 120 charts

Possible student work:

**Sample A**

10	10	10	10
10	10	10	10
10	10	10	1 1 1

100    113 star stickers

**Sample B**

10, 20, 30, 40, 50, 60, 70, 80, 90,  
100, 110, 111, 112, 113  
113 star stickers

**DISCUSS IT**

How did you count the stars?

**Discuss It**

**Support Partner Discussion**

Encourage children to describe how they found the total number of stars as they discuss their solution.

Support as needed with questions such as:

- Did you use a model or tool to help you solve the problem?
- Do you agree with your partner?

**Common Misconception** If children count each star individually, then encourage them to look at the groups and find a way to use the groupings to make the counting easier. Prompt children to make marks (circles, labels, etc.) on the Student Worktext page to keep track of their counting. Ask them how using the 120 chart might be helpful.

### Select and Sequence Solutions

One possible order for whole class discussion:

- count each star (count by ones)
- skip-count by tens to 100, count on by ones to 113
- skip-count by tens to 110, count on 111, 112, 113

### Support Whole Class Discussion

**Compare and connect** different representations and have children identify how they are related.

**Ask** *What did you notice about the different ways to count the stars?*

**Listen for** Children may suggest different patterns. Establish that all counting patterns are valid if they reach a total of 113. Children may note that some are quicker than others.

### Model It

**If no child presented the model** shown on the Student Worktext page, connect the counting by tens model to the children’s models by having children identify how to represent the problem.

**Ask** *Why are the numbers 10, 20, 30, and so on written under each group? How does this help you find the total?*

**Listen for** Each group has 10 stars. 1 group is 10, 2 groups is 20 and so on. The number under each group is keeping track of all the stars that have been counted including that group. Counting by tens is easier than counting all of the stars one by one.

**Ask** *When counting by tens up to 100, how do you know what comes after 100?*

**Listen for** 100 and 1 more is 101, 100 and 2 more is 102, so that pattern works for 10 also. 100 and 10 more is 110.

**Ask** *How does the counting change after 110?*

**Listen for** There is no more counting by tens because there are no more groups of 10. It switches to counting on by ones starting at 110. The next star is 1 more, so it is 111, and then 112, 113.

**Pietro has these star stickers in his collection.**

**How many star stickers does he have?**



### Model It

Count the stars.



Count the groups of 10 and then count on.

11 groups of 10 is **110**.

Add **3** more ones.

Pietro has **113** star stickers.

462

### Deepen Understanding

#### Counting to 120

**SMP 8** Use repeated reasoning.

Children develop understanding of how the sequence of numbers relates to the quantity represented by each number.

**Materials** For display: Activity Sheet 120 Chart

**Ask** *How many numbers are in the first row of the 120 chart? How many are in the second row? How do you know?*

**Listen for** There are 10 numbers in the first row and 10 numbers in the second row. I know because every row is equal since they all have 10 squares.

**Ask** *How many stars are in the first group? How many are in the second group? How are the groups of stars related to the 120 chart?*

**Listen for** There are 10 stars in each group, and 10 squares in each row. Each group is a row on the chart. There are 11 groups of ten and 11 full rows to get to 110. Three more stars and 3 more numbers on the chart makes 113 in all.



**Connect It**

**Support Whole Class Discussion**

Ask children to look at what they drew or wrote to solve the problem and compare it to the count by ten model.

- 1 Help children make sense of the counting by ten model by comparing it to their own.

**Ask** *Did you count each star one at a time or did you use another strategy to find the total?*

**Listen for** I counted groups of 10; I wrote 10 above each group and counted by tens. I counted on one star at a time for the last 3 stars.

- 2 **Ask** *How would you explain to Buzz the mistake he made?*

**Listen for** Buzz is not right because he missed the number 113. I would show Buzz the part of the 120 chart that has the numbers 110 through 115 and help him see the pattern of the ones.

**Apply It**

Explain that the next problems are an opportunity for children to practice counting numbers of objects.

Make Activity Sheet *120 Chart* available.

- 3 7 groups of 10 and 5 ones.  
75 is circled on the chart.

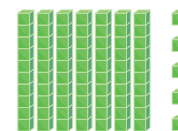
**Connect It**

- 1 How is your way like **Model It**? How is it different?  
**Children may say that they counted groups of 10 stars up to 110 like Model It but then counted on three 1s, while Model It added a group of 3.**
- 2 Buzz counts by ones from 110 like this: 111, 112, 114, 115. Is he right? How do you know?  
**Possible answer: No. Buzz skipped a number. 113 is after 112.**

**Apply It**

- 3 Find the number pictured here.

7 groups of 10 and 5 ones



Circle the total on the chart.

71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



**Hands-On Activity**

**Counting with groups of 10.**

**If . . .** children need more practice counting by tens,

**Then . . .** use the activity below to connect base-ten blocks to counting by tens.

**Materials** For each pair: base-ten blocks (10 tens rods, 9 ones units), Activity Sheet *120 Chart*

- Show children the tens rods and point out that each rod is made up of 10 ones units.
- Give each pair of children 10 tens rods and 9 ones units.
- One partner places some rods and some units on the desk. For example, 4 rods and 6 units.
- The other partner counts the total that these rods and units represent and locates it on the 120 chart. [46] The first partner counts the blocks out loud to determine whether he or she agrees with the number [10, 20, 30, 40, 41, 42, 43, 44, 45, 46]. If there is disagreement, partners discuss until they agree.
- Partners switch roles and continue as time allows.

- 4 Count each group of 10 and then count on 6; 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 101, 102, 103, 104, 105, 106; 106 baseballs
- 5 80, 81, 82, 83, 84, 85; 85 shells
- 6 110, 111, 112, 113; 113 pencils

**Support Whole Class Discussion**

When children have completed problems 3–7, discuss the answers as a class.

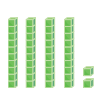
**Ask** How was problem 4 different from problems 5 and 6?

**Listen for** In problem 4, I have to count by tens and then count on. In problems 5 and 6, the tens were already counted and I just had to count on by ones from the number on the box.

**Close: Exit Ticket**

**Materials** For each child: base-ten blocks (4 tens rods, 2 ones units) (optional)  
Have children count the number of groups of tens and ones and then record the total.

Find the total.



\_\_\_ groups of ten and \_\_\_ ones  
Total: \_\_\_\_\_

**Solution**  
4 groups of 10 and 2 ones  
Total: 42

**Error Alert** If children get 6 or 60 for the answer, then they may be counting all blocks as the same value, seeing a total of 6 blocks and assigning them all a value of either 10 or 1. Stack 10 ones units next to a tens rod to show that the tens rod represents a 10. Guide children to count by tens only for the rods, and then switch to counting by ones for the ones units.

- 4 Gina counts these baseballs.  
How many baseballs does she count?



106 baseballs

- 5 There are 80 shells in a box.  
There are more outside the box.  
How many altogether?



85 shells

- 6 There are 110 pencils in a box.  
There are more outside the box.  
How many altogether?



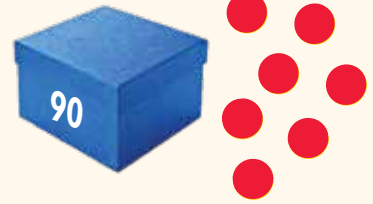
113 pencils

**Practice Counting to 120**

Look at the Example. Then solve problems 1–4.

**Example**

There are 90 counters in this box.  
There are more outside the box.  
How many in all?



81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Start at 90 and count on.



91, 92, 93, 94, 95, 96, 97  
97 counters in all.

1 60 flowers are in the box.  
There are more outside the box.  
How many altogether?



64 flowers

**Fluency & Skills Practice** **Teacher Toolbox**

**Assign Counting to 120**

In this activity children practice representing numbers to 120 as groups of tens and ones. Children may need to count, model, or write numbers to 120 in real-world situations. For example, children may use these numbers to describe the total number of first graders in their school, the cost of a bicycle, or how many cookies were made for a bake sale.

Fluency and Skills Practice

Counting to 120 Name \_\_\_\_\_

Draw lines from the group of tens and ones to the matching number.

	73
	65
	107
	75
	115

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- 2 8 groups of 10 and 2 ones  
82 should have a circle.

**Medium**

- 3 12 groups of 10 and 0 ones  
120 on the chart above should have an X.

**Medium**

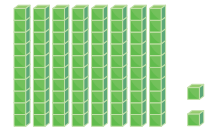
- 4 Possible approach: 5 groups of 10 cupcakes  
and 7 more

10, 20, 30, 40, 50, 51, 52, 53, 54, 55, 56, 57

57 cupcakes

**Challenge**

- 2 Find the total pictured here.

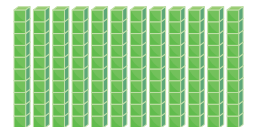


8 groups of 10 and 2 ones

Circle the total on the chart below.

71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

- 3 Find the total pictured here.



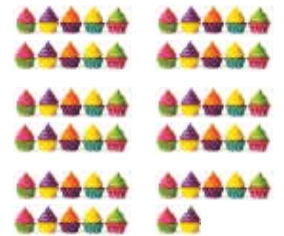
12 groups of 10 and 0 ones

Put an X on the total on the chart above.

- 4 Bo made these cupcakes.

How many cupcakes did he make?

57 cupcakes



466

**ELL** English Language Learners: Differentiated Instruction **Prepare for Session 4**  
Use with *Apply It*.

**Levels 1–3**

**Speaking** Review the names of shapes with children after they have used visual cues to complete *Apply It* problem 2. Point to the pentagon and say: *The pentagon is 108.* Write this sentence frame on the board:

• The \_\_\_\_\_ is \_\_\_\_\_.

Repeat the sentence pointing to the blanks for *pentagon* and *108*. Partner children up and have them take turns checking their answers with one another using the sentence frame.

**Levels 2–4**

**Listening** Use with *Apply It* problem 2. Tell children you have placed some other shapes on a few numbers on your 120 chart. Encourage them to listen carefully as you give them a clue to see if they can figure out which number has which shape. Have them draw the shape on the correct number. Say: *I will give you clues. Try to use patterns to tell what numbers are under my shapes. The heart is one more than 26. [27] The triangle has 4 tens and 3 ones. [43] The oval is in the fourth row. It has five ones. [35]* Have children check their answers with a partner.

**Levels 3–5**

**Speaking/Listening** Use with *Apply It* problem 2. Tell children you have placed an oval on your 120 chart. Encourage them to listen carefully as you give a clue about the number. Say: *The oval is one more than 34. [35]* Check for understanding. Give examples of other clues that could have been given for the number, such as: *It has 3 tens and 5 ones. It is in the fifth column and has 3 tens.* Have children choose a secret number and draw a triangle around it. Have children work in pairs and take turns giving each other clues to try to discover their partner's secret number.

**Purpose** In this session children practice finding missing numbers on a 120 chart using patterns in the counting sequence.

**Start**

 **Develop Fluency**

**Materials** For each pair: 1 counter, Activity Sheet 120 Chart

**Why** Build fluency with numbers on the 120 chart.

**How** Partners take turns naming a number on the 120 chart while the other partner places a counter on that number.

Use a 120 chart.  
Place a counter on the number your partner names.

*Look for and Listen for* Correct identification of numbers on the 120 chart and discussion when partners disagree.

**Example**

Read the Example problem aloud and have children describe how to identify the missing numbers.

**Ask** How does the 120 chart help you count and find the missing numbers?

**Listen for** The numbers in each row increase by one. The pattern in each row is 1, 2, 3, 4, 5, and so on.

**Apply It**

1 66; 67; 68




**DOK 1**

**Refine** Counting to 120

**Complete the Example. Then solve problems 1–3.**

**Example**

Fill in the 2 blank spaces in the chart.

81	82	83	84	85	86	87		89	90
91	92		94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	
111	112	113	<b>114</b>	<b>115</b>	<b>116</b>	117	118	119	120

Write the missing number for each shape in the chart.

 is 93.  is 88.  is 110.

**Apply It**

1 Fill in the 3 blank spaces in the chart.

61	62	63	64	65	<b>66</b>	<b>67</b>	<b>68</b>	69	70
71	72	73	74	75	76	77	78	79	80

2 Pentagon is 108.

Square is 32.

Star is 66.

Circle is 50.

**DOK 1**

3 The following numbers should be filled in on the 120 chart: 78; 79; 80

101; 102; 103


**DOK 1**

### Close: Exit Ticket

#### Check for Understanding

**Materials** For each child: crayons (red, blue, green), Activity Sheet 120 Chart

Ask children to use their crayons to color the numbers described.



Color the number that is 1 more than 89 **red**.

Color the number that is 1 more than 110 **blue**.

Color the number that is 1 more than 106 **green**.

#### Solutions

Color 90 red.

Color 111 blue.

Color 107 green.





**Error Alert** For children who are still struggling, use the table on the right to guide remediation.

After providing remediation, check children's understanding of the following problem:

Circle the number that is 1 more than 100. [101]


Circle the number that is 1 more than 73. [74]

Circle the number that is 1 more than 115. [116]

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31		33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49 	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65 	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107 	108	109	110
111	112	113	114	115	116	117	118	119	120

2 Write the missing number for each shape in the chart.

 is 108.

 is 32.

 is 66.

 is 50.

3 Fill in the blank spaces in the chart.

468

### Error Alert

If the error is ...	Children may ...	To support understanding ...
colored 89, 110, and/or 106	not understand the directions.	Read the problem on the slide out loud together. Have children locate the number named and then point to the number that is one more.
99, 120, and/or 116	think that "one more" can mean the number below the starting number.	Have children move their fingers on the 120 chart as you count one row. Then have them touch each number you said and say what number is one more.
1 more than 110 is 120 (only mistake)	may not understand how to read numbers on the chart as they cross the decade.	Read 7, 8, 9, 10, 11 out loud together as you point to these numbers. Then read 107, 108, 109, 110, 111 together and have children point to these numbers.

Name: \_\_\_\_\_

LESSON 20 SESSION 4

**Solutions**

- 1 Circle is 88. Triangle is 105.  
*Basic*

**Practice Counting to 120**

Look at the Example. Then solve problems 1–4.

**Example**

71	72	73	74	75	76	77	78	79	80
81	82	83	84	★	86	87	●	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	▲	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Write the missing number for the ★ in the chart.

★ is 85.




Write the missing number for each shape in the chart.

1 ● is 88.▲ is 105.




2 Square is 91.  
 Pentagon is 60.  
 Heart is 34.  
**Medium**

3 The following numbers are filled in correctly on the 120 chart: 72; 73; 74  
 110; 111; 112  
 120  
**Medium**

4 There is an X on the number 100.  
**Medium**

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33		35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
	92	93	94	95	96	97	98	99	<del>100</del>
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

2 Write the missing number for each shape in the chart.

 is 91.     is 60.     is 34.

3 Write the missing numbers in the chart.

4 Draw an X on the number that is 1 more than 99.



**Purpose** In this session children practice identifying a number that is one more than a given number using the 120 chart. Then they count objects that are arranged in groups of ten and some more.

**Start**

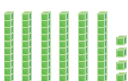
**Develop Fluency**

**Materials** For each child: copy of printed slide

**Why** Practice describing a number that is modeled with base-ten blocks to reinforce understanding place value in two-digit numbers.

**How** Complete the statements that describe the base-ten block model and write the number it represents.

Fill in the blanks.



\_\_\_ groups of ten and \_\_\_ ones  
Total: \_\_\_\_

**Solutions**  
6 groups of ten and 4 ones  
Total: 64

**Apply It**

- 1 101  
DOK 1
- 2 116  
DOK 1
- 3 118  
DOK 1
- 4 120  
DOK 1
- 5 100  
DOK 1
- 6 112  
DOK 1
- 7 104, **105**, 106, **107**, 108, **109**  
DOK 1
- 8 98, **99**, **100**, **101**, 102  
DOK 1

**Refine Counting to 120**

**Apply It**

Solve problems 1–11.

91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Fill in the blanks. Use the chart.

- 1 1 more than 100 is **101**.
- 2 1 more than 115 is **116**.
- 3 1 more than 117 is **118**.
- 4 1 more than 119 is **120**.
- 5 1 more than 99 is **100**.
- 6 1 more than 111 is **112**.

Fill in the blanks. Use the chart.

- 7 104, **105**, 106, **107**, 108, **109**
- 8 98, **99**, **100**, **101**, 102
- 9 114, 115, **116**, **117**, **118**

**Differentiated Instruction**

**RETEACH**



**Hands-On Activity**

Use a 120 chart to count by 10s.

**Children** who struggle with counting by 10s

**Will benefit from** practice using the 120 chart to see the pattern.

**Materials** For each child: Activity Sheet *120 Chart*, modified to show blank squares for the multiples of 10.

- Distribute the 120 chart with multiples of 10 blank. Have children count by ones across the first row and write in the multiple of 10 that goes in the blank square. Complete the second row in a similar way.
- After each row, have children start at the top and read down the last column of numbers they have written so far: skip-count by tens as far as there are numbers.
- Resume counting by ones on the next row until another multiple of 10 is filled in. Repeat vertical count. Discuss the patterns children see.

9 114, 115, 116, 117, 118  
DOK 1

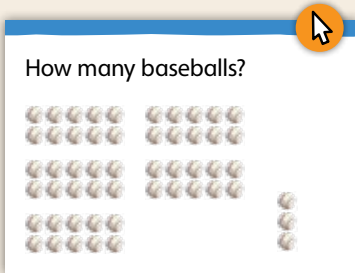
10 67 cookies  
DOK 2

11 Children should circle 84 faces.  
DOK 1

**Close: Exit Ticket**

**Math Journal**

**Materials** Per child: copy of printed slide  
Have children show how they can find the total number of baseballs without counting each one individually.



**Solution**  
5 groups of 10 and  
3 more  
53 baseballs

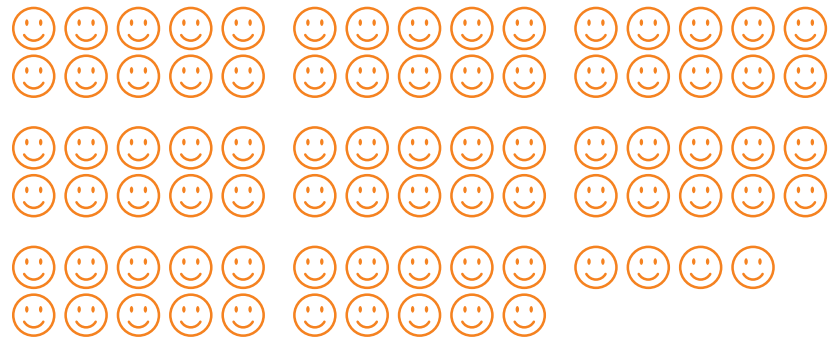
**Error Alert** If children give an incorrect total, then have them refer to the 120 chart. Prompt them to circle each group of 10 baseballs and then color a row for each group of 10. 5 groups of ten is 50. Then count on 3 to 53.

10 Gene has 60 cookies in a box.  
There are some more on the tray.  
How many cookies in all?



67 cookies

11 Kadeem draws some faces.



How many faces?  
Circle.

74 faces

84 faces

94 faces



472

**EXTEND**

**Challenge Activity**

Find the difference between two numbers on a 120 chart.

**Children** who have achieved proficiency  
**Will benefit from** deepening understanding of numbers to 120.

**Materials** For each child: Activity Sheet  
120 Chart

- Have children find 16 and 27 on the 120 chart. Ask: *How many more is 27 than 16?* [11] Have children explain the strategy they used to find the answer. Ask them whether they found the answer without counting.

- Have children find the differences for other pairs of numbers:
  - 25 and 34 [9]
  - 48 and 60 [12]
  - 57 and 87 [30]
  - 78 and 92 [14]
  - 101 and 114 [13]
  - 52 and 96 [44]
  - 39 and 44 [5]
  - 6 and 106 [100]
- Listen as children discuss any patterns or methods they have discovered by using the chart.

**PERSONALIZE**



Provide children with opportunities to work on their personalized instruction path with *i-Ready* Online Instruction to:

- fill prerequisite gaps
- build up grade-level skills

## Lesson Objectives

## Content Objectives

- Understand the meaning of the symbols  $<$  and  $>$ .
- Compare the values of 2 two-digit numbers using tens and ones.
- Write the symbols  $<$ ,  $>$ , and  $=$  to compare 2 two-digit numbers.

## Language Objectives

- Orally describe and write the symbols used to represent *is greater than*, *is less than*, and *is the same as*.
- Use quick drawings and base-ten blocks to model two-digit numbers in comparison problems.
- Rewrite given pairs of two-digit numbers as tens and ones and determine which number is greater than, less than, or equal to the other.

## Prerequisite Skills

- Understand concepts of *less than*, *more than*, and *the same as*.
- Understand the equal sign.
- Understand two-digit numbers as tens and ones.
- Know the count sequence to 100.

## Standards for Mathematical Practice (SMP)

SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the *Try-Discuss-Connect* routine.\*

In addition, this lesson particularly emphasizes the following SMPs:

- 5** Use appropriate tools strategically.
- 6** Attend to precision.
- 7** Look for and make use of structure.

\*See page 431i to see how every lesson includes these SMPs.

## Lesson Vocabulary

- **greater than** a group or number that has more.
- **greater than symbol ( $>$ )** a symbol that means *is greater than*.
- **less than** the group or number with fewer, not as much, not as many.
- **less than symbol ( $<$ )** a symbol that means *is less than*.

Review the following key terms.

- **compare** to decide if numbers, amounts, or sizes are greater than, less than, or equal to each other.
- **equal sign ( $=$ )** a symbol that means *is the same as*.
- **fewer** a lesser amount.
- **more, more than** the greater number, quantity, or amount.

## Learning Progression

**In Kindergarten** children use matching or counting strategies to identify the number of objects in a group as less than, equal to, or greater than the number of objects in another group. Children compare two numbers within 10 written as numerals.

**In Grade 1** children compare two quantities using one-to-one correspondence and subtract to find the difference. Children also understand that the two digits in a two-digit number represent tens and ones. They understand 10, 20, 30, 40, 50, 60, 70, 80, 90, and 100 as bundles of tens and zero ones.

**In this lesson** children use models of base-ten blocks to compare the number of tens and ones in 2 two-digit numbers. They use quick drawings and draw their own representations to compare 2 two-digit numbers. Two-digit numbers are compared using their relative positions on the 100 chart. Children write  $<$ ,  $>$ , or  $=$  to record their comparisons.

**In Grade 2** children compare three-digit numbers based on the place values hundreds, tens, and ones. They use the symbols  $<$ ,  $>$ , and  $=$  to record comparisons.

# Lesson Pacing Guide

Teacher Toolbox 

## Whole Class Instruction

### SESSION 1

**Explore**

45–60 min

#### Interactive Tutorial\* (Optional)

Prerequisite Review: Order Numbers to 10

#### Comparing Numbers

- Start 5 min
- Try It 20 min
- Connect It 15 min
- Close: Exit Ticket 5 min

#### Additional Practice

Lesson pages 493–494

### SESSION 2

**Develop**

45–60 min

#### Comparing Numbers

- Start 5 min
- Try It 15 min
- Discuss It 10 min
- Model It 5 min
- Connect It 10 min
- Apply It 5 min
- Close: Exit Ticket 5 min

#### Additional Practice

Lesson pages 499–500

#### Fluency Practice

Find 10 More and 10 Less with Base-Ten Blocks

### SESSION 3

**Develop**

45–60 min

#### Comparing Numbers

- Start 5 min
- Try It 15 min
- Discuss It 10 min
- Model It 5 min
- Connect It 10 min
- Apply It 5 min
- Close: Exit Ticket 5 min

#### Additional Practice

Lesson pages 505–506

#### Fluency

Comparing Numbers

### SESSION 4

**Refine**

45–60 min

#### Comparing Numbers

- Start 5 min
- Apply It 35 min
- Close: Exit Ticket 5 min

#### Additional Practice

Lesson pages 509–510

### SESSION 5

**Refine**

45–60 min

#### Comparing Numbers

- Start 5 min
- Apply It 15 min
- Small Group Differentiation 20 min
- Close: Exit Ticket 5 min

#### Lesson Quiz

or **Digital Comprehension Check**

## Small Group Differentiation

### PREPARE

#### Ready Prerequisite Lesson

##### Grade K

- Lesson 8 Compare Within 10

### RETEACH

#### Tools for Instruction

##### Grade K

- Lesson 8 Compare Within 10

##### Grade 1

- Lesson 22 Compare Two-Digit Numbers

### REINFORCE

#### Math Center Activities

##### Grade 1

- Lesson 22 Comparison Vocabulary
- Lesson 22 Compare Numbers

### EXTEND

#### Enrichment Activity

##### Grade 1

- Lesson 22 Comparing Cards



## Independent Learning

### PERSONALIZE

#### Learning Games

- Zoom
- Bounce

## Lesson Materials


**Lesson (Required)** Per child: base-ten blocks (11 tens rods, 12 ones units), copy of Start slide (Sessions 3–4)

Per pair: base-ten blocks (5 tens rods, 11 ones units)


Activity Sheet:  Tens Place-Value Mat

**Activities** Per child: base-ten blocks (10 tens rods, 8 ones units), 2 counters

Per pair: base-ten blocks (18 tens rods, 18 ones units)

Activity Sheets:  Tens Place-Value Mat; 10 More, 10 Less; 120 Chart; Number Cards 0 to 11\*\*

**Math Toolkit** base-ten blocks, counters, 10-frames, place-value mats, 120 charts

**Digital Math Tools ** Base-Ten Blocks, Counters and Connecting Cubes

\*\*Used for more than one activity.

\*We continually update the Interactive Tutorials. Check the Teacher Toolbox for the most up-to-date offerings for this lesson.

# Connect to Family, Community, and Language Development

The following activities and instructional supports provide opportunities to foster school, family, and community involvement and partnerships.

## Connect to Family

Use the **Family Letter**—which provides background information, math vocabulary, and an activity—to keep families apprised of what their child is learning and to encourage family involvement.

Available in Spanish  
Teacher Toolbox

### Compare Numbers

**Dear Family,**  
This week your child is learning to compare two-digit numbers.

To find which of two numbers is **greater than** the other (has more), or is **less than** the other (has fewer), you can compare the tens and compare the ones. Because tens have a greater value than ones, compare the tens first. If the tens are the same, then compare the ones.

Learning to compare two-digit numbers will help your child better understand the relationships between numbers and will be useful in real-life situations that involve comparing amounts or values.

You can use the **greater than symbol** ( $>$ ) and **less than symbol** ( $<$ ) to compare numbers.

- You can use place-value charts to compare numbers.

48  $\text{?}$  35

Tens	Ones	Tens	Ones
4	8	3	5

Compare tens. 4 tens is greater than 3 tens.  
So,  $48 > 35$ .

- You can also use quick drawings to compare numbers.

23  $\text{?}$  27

Each line represents ten. Each circle represents one.

2 tens 3 ones    2 tens 7 ones

The tens are the same, so compare the ones.

3 ones is less than 7 ones.  
So,  $23 < 27$ .

Invite your child to share what he or she knows about comparing two-digit numbers by doing the following activity together.

489

### Activity Comparing Numbers

Do this activity with your child to explore comparing numbers.

Play a game with your child that involves comparing two-digit numbers.

- Cut out the cards shown below or use index cards to make your own set. Mix the number cards and place them facedown in a pile.
- Each player takes one of the symbol cards.
- Take turns picking two cards. Use the symbol card to make a statement that compares the two numbers, for example  $33 < 42$ . You can position the symbol to show *less than* or *greater than*.
- Say what the statement shows, for example: *33 is less than 42*.
- When all cards are used, you can mix them up and play again.

21	24	29	33	34
35	38	42	45	46
47	51	53	59	60
62	67	68	$>$	$>$

490

### Goal

The goal of the Family Letter is to help children learn to compare 2 two-digit numbers to determine which is greater than or less than the other. In this lesson, children are introduced to the symbols for greater than ( $>$ ) and less than ( $<$ ).

### Activity

Understanding how to compare 2 two-digit numbers to determine which of the two is greater than or less than the other is an important life skill useful in situations that involve comparing amounts or numbers. Look at the *Comparing Numbers* activity and adjust it if necessary to connect with your children.

### Math Talk at Home

Encourage children and their family members to look for and record examples of two-digit numbers in their home or community. Have them choose two of the numbers and compare them, using the symbol  $<$  or  $>$ .

**Conversation Starters** Below are additional conversation starters children can write in their Family Letter or math journal, with your guidance, to engage family members.

- Which number is greater?
- Which digits do we compare first?
- Which symbol do we use?

## Connect to Community and Cultural Responsiveness

Use these activities to connect with and leverage the diverse backgrounds and experiences of all children.

### Session 1 Use with *Try It*.

- Make learning authentic with a real-world comparison problem involving class size. Choose another class from your grade level. Compare the number of children in your class to the number of children in the other class. Ask: *Which class has more children? Which class has fewer children? Is there a class that has an equal number of children to our class?* Summarize findings using complete sentences.

### Session 2 Use with *Model It*.

- Use a rhyme to help children remember which direction the symbol points when comparing two numbers. Say: *The comparing alligator swims in the river all day, searching for the greatest number to chomp along his way. He checks each number from left to right, then opens wide to take a bite!* Think aloud to compare 52 and 25. Use a puppet or your hand to mimic eating the bigger number. Draw the greater than symbol and add sharp teeth to create a visual for children. Then provide additional pairs of two-digit numbers and invite children to use the puppet or their hand to position the symbol to open facing the greater number. Include some number pairs that have the same digit in the tens place.

### Session 3 Use with *Model It*.

- Introduce the following poem to help children remember the steps for comparing two-digit numbers that have the same digit in the tens place: *To compare two numbers, check the tens. If they are the same, look again. This time look at the number of ones. Comparing numbers is lots of fun!* Model comparing 35 and 39 using the steps in the poem. Say the first line of the poem and circle the tens digit in each number. Point out that the digits in the tens place are the same so both numbers have the same number of tens. Read the next two lines of the poem. Circle the digits in the ones place and say: *5 is less than 9, so 35 is less than 39.* Use the less than symbol (<) to show the comparison.

### Sessions 4 and 5 Use anytime during these sessions.

- Rehearse the poem from Session 3 with children. Encourage them to think of the poem to remember the steps as they compare numbers throughout the sessions.

## Connect to Language Development

For ELLs, use the Differentiated Instruction chart to plan and prepare for specific activities in every session.

ELL

English Language Learners:  
Differentiated Instruction

Prepare for Session 1  
Use with *Try It*.

#### Levels 1–3

**Speaking/Listening** Pair children up to model the *Try It* problem. Ask one partner to show Rosa's books and the other partner to show Ryan's books with base-ten blocks. Encourage them to discover their own way to compare the blocks. Look for methods such as lining up all of the blocks end to end and checking to see which is longer or making groups of tens and counting to see which group has more. Ask the following questions and allow children to respond with single-word answers: *How many are there? Who carries more books? Who carries fewer books?* Rephrase answers into full sentences. For example: *Ryan carries more books. Rosa carries fewer books.*

#### Levels 2–4

**Reading/Speaking** After children complete the *Try It* problem, have them place a sticky note over the written answers. Gather children into small groups. Before the activity, copy the sentences from the *Try It* problem onto sentence strips. Cut the sentence strips apart so that each word stands alone. Place the words that make up each sentence in a separate envelope. Make enough copies for each group to have one envelope. Encourage group members to work together to arrange the words in order to form a true sentence. Ask: *How did you know which name went first? How did you know which name went last?* (Possible answers: The word *fewer* is a clue. I know who has more.)

#### Levels 3–5

**Speaking/Listening** After children complete the *Try It* problem, have them turn and tell a partner how they solved the problem. Encourage them to include sequencing words such as *first*, *next*, and *then* in their explanations. When all children have shared, compile a list of the ways children solved the problem on a chart. Write each child's initials next to his or her solution strategy. For example, if three children lined up Rosa's blocks next to Ryan's blocks to see which was longer, write those children's initials next to that idea on the chart.

**Purpose** In this session, children model two quantities using base-ten blocks and use the words *more* and *fewer* to compare the numbers.

**Start**

**Connect to Prior Knowledge**

**Materials** For each child: base-ten blocks (7 tens rods, 10 ones units)

**Why** Review modeling two-digit numbers with base-ten blocks to prepare for comparing two-digit numbers.

**How** Children use base-ten blocks to model 2 two-digit numbers using the greatest number of tens possible.

Model each number using base-ten blocks.

38      42

**Solutions**

38: 3 tens rods and 8 ones units

42: 4 tens rods and 2 ones units

**Try It**

**Materials** For each pair: base-ten blocks (5 tens rods, 11 ones units)

**Model the Problem with Base-Ten Blocks**

Ask the children to imagine that a class needs to move some books to the school library. Say: *Rosa carries 24 books. Ryan carries 37 books. Who carries more books? Who carries fewer?*

**Ask** *How could you compare the number of books Rosa and Ryan each carry?*

**Listen for** Make two stacks of books and compare the size. Model the two groups with base-ten blocks.

**Ask** *How can you model each group of books using base-ten blocks?*

**Listen for** Model each number with base-ten blocks and compare.

Have children work in pairs to model the quantities on the Student Worktext page. Then have them describe how they compared the numbers.

**Explore Comparing Numbers**

**Learning Target**

• Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols  $>$ ,  $=$ , and  $<$ .

SMP 1, 2, 3, 4, 5, 6, 7

**Rosa carries 24 books. Ryan carries 37 books. Who carries more books?**

**Who carries fewer?**

**Try It**

**Math Toolkit**

• base-ten blocks

Rosa

Ryan

Write the names.

    Ryan     carries more books than     Rosa    .

    Rosa     carries fewer books than     Ryan    .

**Common Misconception** If children think 24 is less than 37 because 4 is less than 7, **then** remove the ones units from the mat and just compare 2 tens with 3 tens. Ask which is greater [3 tens] and have them discuss why the number of ones does not make a difference in the comparison if the tens are different.

**Support Whole Class Discussion**

Have pairs explain how they compared the two quantities and how they decided which name to write on each line. Encourage pairs to talk about how they compared the two models.

**Ask** *Which group of books has more? Which has fewer? How do you know?*

**Listen for** The group of 37 books has more because 37 has more tens than 24. The group of 24 books has fewer because 24 has fewer tens than 37.

**Ask** *What can you say about the number of books Ryan carries? What can you say about the number of books Rosa carries?*

**Listen for** Ryan carries more books than Rosa. Rosa carries fewer than Ryan.

Discuss how the words *fewer* and *less* describe smaller quantities and the words *greater* and *more* describe larger quantities. Have children name some words they use when quantities are the same such as *equal*, *the same amount*, and *as many as*.

## Connect It



**Materials** For each child: base-ten blocks (5 tens rods, 9 ones units)

### Pose a Different Problem

Tell children to imagine the balls stored in a school gym. Then read the problem from the Student Worktext page aloud.

**Ask** How can using base-ten blocks help you compare the number of items in each group?

### Model the Problem with Base-Ten Blocks

Allow children time to model the numbers. Some children may need to use base-ten blocks before making a drawing. You may want to show children a quick drawing of base-ten blocks using lines for tens and dots or circles for ones. Compare the models.

**Ask** Which number has more tens? [31] How does that help you know which number is greater?

**Listen for** The number with more tens is the greater number. 31 footballs is greater than 28 soccer balls.

**Ask** Which number has more ones units?

**Listen for** There are more ones units in the number of soccer balls [the 8 in 28] than in the number of footballs [the 1 in 31].

**Ask** How can the number of footballs be greater when this is true?

**Listen for** The number of footballs has one more tens rod in it than the number of soccer balls, so that means 31 is greater. 30 is greater than 28, so 31 is also greater than 28.

**Ask** What can you say about the number of footballs?

**Listen for** There are more footballs than soccer balls.

**Ask** What can you say about the number of soccer balls?

**Listen for** There are fewer soccer balls than footballs.

Have children complete the comparison statements on the bottom of the Student Worktext page.

Children will spend more time learning about the concept of fewer in the Additional Practice.

## Connect It

There are 28 soccer balls.

There are 31 footballs.

Draw to compare the number of balls.



soccer balls	footballs
<b>Possible work:</b>	
<u>28</u>	<u>31</u>

Fill in the blanks.

There are more footballs than soccer balls.

There are fewer soccer balls than footballs.

492

## Close: Exit Ticket

Children choose the word *more* or *fewer* to complete the sentence.

### Close: Exit Ticket

There are 14 red flowers.

There are 24 purple flowers.

There are \_\_\_\_\_ red flowers than purple flowers.

### Possible Solutions

14 is one ten and 4 ones.

24 is two tens and 4 ones.

14 is less than 24.

There are fewer red flowers than purple flowers.

**Listen for** Children may need support knowing when to use the word "less" and when to use "fewer," and understanding that they are both the opposite of "more."

**Common Misconception** If children are struggling with comparing the numbers, then help them use base-ten blocks to align the quantities vertically and use one-to-one correspondence to compare.



### Real-World Connection

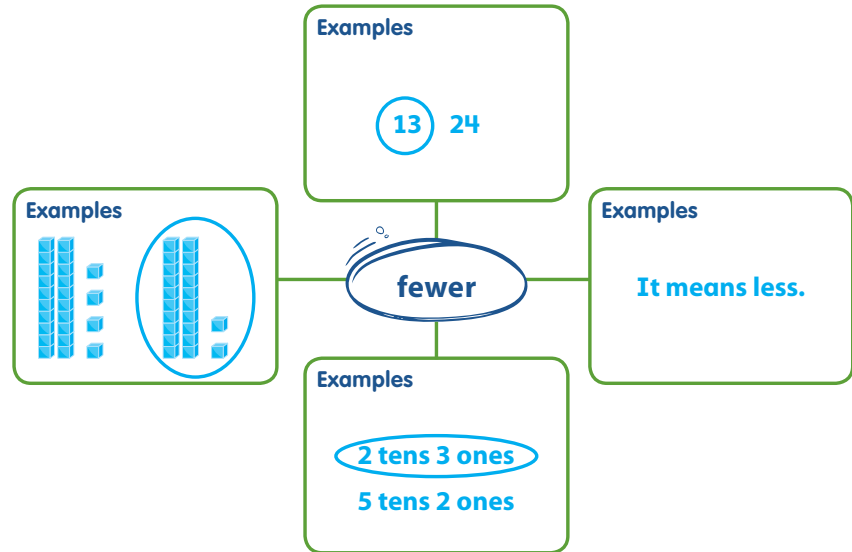
Encourage children to think about everyday situations where people might need to compare two quantities. Have volunteers share their ideas. Examples: points scored by basketball teams, number of items in two collections, number of votes.



**Prepare for Comparing Numbers**

- 1 Think about what you know about comparing numbers. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.

Possible answers:



- 2 Circle the group with fewer books.



**Solutions**

**Support Vocabulary Development**

1 Before the session, draw four examples that show ways to represent the term *fewer* on posters, such as the annotated answers shown on the graphic organizer. Place one of the examples in each corner of the room. Read the directions aloud as children whisper read along with you. Have children point to the term *fewer* in the middle of the graphic organizer and read the word aloud. Organize the class into four groups and have them rotate around the four corners of the room to examine the examples. Then ask children to return to their seats to complete the graphic organizers with their own ideas.

2 If children need additional support to compare the groups of books, have them work with a partner to use connecting cubes to model the problem. Ask: *How are the models the same?* (Possible answer: They both have 2 stacks of ten.) *How are the models different?* (Possible answer: One model has 4 extra books and the other has 2 extra books.)

**Supplemental Math Vocabulary**

- *greater than*
- *less than*



- 3 Assign problem 3 to provide another look at comparing numbers.

This problem is very similar to the problem about comparing the number of soccer balls and footballs. In both problems, children draw to compare two-digit numbers. The question asks children to compare the number of apples and bananas.

Children may want to use base-ten blocks, connecting cubes, cereal pieces, or pasta shapes.

Suggest that children read the problem three times, asking themselves one of the following questions each time:

- *What is this problem about?*
- *What is the question I am trying to answer?*
- *What information is important?*

**Solution:**

Possible work: Children may make a quick drawing of 3 lines and 4 circles for 34, and another one of 2 lines and 7 circles for 27.



There are fewer bananas than apples.

There are more apples than bananas.

**Medium**

- 3 Solve the problem.

**There are 34 apples. There are 27 bananas.**  
**Draw to compare the number of fruits.**

apples	bananas
<p><b>Possible work:</b></p> <div style="text-align: center;">  </div> <div style="text-align: center; margin-top: 20px;"> <u>34</u> </div>	<div style="text-align: center;">  </div> <div style="text-align: center; margin-top: 20px;"> <u>27</u> </div>

Fill in the blanks.

There are fewer bananas than apples.

There are more apples than bananas.

494

**ELL English Language Learners: Differentiated Instruction** **Prepare for Session 2**  
 Use with *Model It*.

**Levels 1–3**

**Reading/Speaking** Have children examine the place-value charts pictured in the *Model It* problem. Ask children to point to each column and read the headings chorally. Say: *52 is 5 tens and 2 ones*. Have children repeat the sentence while pointing to the corresponding information on the place-value chart. Tell children to describe 25 using the sentence frame:

- is        tens and        ones.

Read the callout box aloud: *Compare tens*. Have children point to the tens on each place-value chart. Ask: *Which is greater?* Encourage children to point to the answer, then say: *5 tens is greater than 2 tens*. Have children repeat.

**Levels 2–4**

**Speaking/Writing** Once children have solved the *Model It* problem, have them rewrite the expression  $52 > 25$  in their math journals using the phrase *is greater than*. Encourage children to share their sentence with a partner. Say: *How would you change the sentence if the numbers switched places?* Have children show thumbs up when they have an idea. Have children turn and talk with a partner. Write the expression  $25 < 52$  on the board and have children rewrite it in sentence form using the phrase *is less than*.

**Levels 3–5**

**Speaking/Writing** Have children work with a partner to discuss the steps for comparing the numbers in the *Model It* problem. Encourage children to use sequencing words *first*, *next*, and *then* as applicable. After children discuss ideas, have them write the steps in their math journals. They can cowrite sentences, but tell each child to write the ideas in his or her own math journal for future reference.

**Purpose** In this session, children compare the numbers 52 and 25 to find which is more. They use base-ten blocks and place-value charts to determine how the position of the digits in a number determines the number's value.

**Start**

**Connect to Prior Knowledge**

**Materials** For each child: base-ten blocks (11 tens rods, 11 ones units)

**Why** Use the values of the digits to compare 2 two-digit numbers.

**How** Model two-digit numbers with base-ten blocks to compare their values and tell which is greater.

Use base-ten blocks to model each number.  
Tell which number is greater.  
29                      92  
\_\_\_\_\_ is greater than \_\_\_\_\_.

**Solutions**  
92 is greater than 29.  
**Look for** Children accurately model 9 tens 2 ones and 2 tens 9 ones using base-ten blocks.

**Develop Language**

**Why** Clarify the meaning of the terms *greater than* and *less than* and relate these terms to their symbols.

**How** Explain that we use the term *greater than* to say that one number has a greater value than another. Display the greater than symbol:  $>$ . Explain that we use it to indicate that one number is worth more than another or that it comes farther along in counting order. Then explain that we use the term *less than* to say that one number has less value than another number, or that it comes earlier in counting order. Display the less than symbol:  $<$ .

**Try It**

**Make Sense of the Problem**

Read the problem aloud. To support children in making sense of the problem, prompt them to relate the problem to the previous session.

**Ask** *How is this problem like the ones you did yesterday?*

**Develop Comparing Numbers**

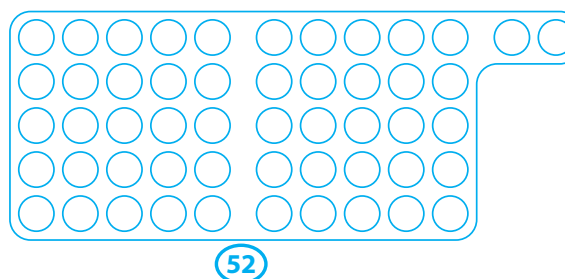
Nora picks 52 apples. Nick picks 25 apples.  
Who picks more apples?



**Try It**

Possible student work:

**Sample A**



Nora picks more apples.

**Sample B**

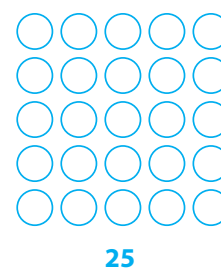


Nora picks more apples.



**Math Toolkit**

- base-ten blocks
- counters
- 10-frames
- tens place-value mats



**DISCUSS IT**

How can thinking about tens and ones help?

**Discuss It**

**Support Partner Discussion**

Encourage children to talk about tens and ones and use the words *greater*, *more*, *fewer*, and *less*.

Support as needed with questions such as:

- *How did you model the problem?*
- *Can you describe your solution to your partner?*
- *Did your partner model the problem in a different way?*

**Common Misconception** If children can decompose two-digit numbers into tens and ones but do not recognize that the position of the digit tells the value of that digit, **then** provide practice using concrete representations. Give children a two-digit number to model as tens and ones. Then reverse the positions of the digits to make a new two-digit number. Ask children to model this number and compare the two models.

### Select and Sequence Solutions

One possible order for whole class discussion:

- groups of 52 objects and 25 objects in no particular arrangement
- drawing of 52 objects and 25 objects in groups of 10 to compare
- quick drawing of 52 and 25 showing that 52 has more tens than 25
- place-value explanation describing the 5 in 52 as having a value of 50 and the 2 in 25 having a value of 20

### Support Whole Class Discussion

**Compare and connect** the different representations and have children identify how they are related.

**Ask** How do the different models show who picked more apples?

**Listen for** 5 groups of ten is more than 2 groups of ten. 50 is more than 20. 5 tens is more than 2 tens.

### Model It

If no child presented the model shown on the Student Worktext page, connect the base-ten block models to the children's models by having children identify how to represent the problem.

**Ask** Which has greater value, tens or ones?

**Listen for** Tens are greater than ones.

**Ask** How does the place-value chart help compare the numbers?

**Listen for** The words "tens" and "ones" are labels for the digits. They are a reminder to compare the tens to the tens and the ones to the ones.

Guide children to recognize that if one number has more tens than the other, there is no need to look at the ones.

**Ask** How are the numbers 52 and 25 the same? How are they different?

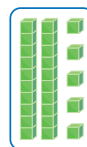
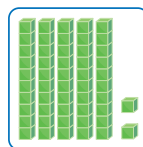
**Listen for** They have the same two digits, 2 and 5. In 52, the 5 is in the tens place; in 25, the 5 is in the ones place. In 52, the 2 is in the ones place; in 25, the 2 is in the tens place.

Nora picks 52 apples. Nick picks 25 apples.

Who picks more apples?

### Model It

Compare. 52  $\textcircled{?}$  25



Tens	Ones
5	2

Tens	Ones
2	5

Compare tens.

5 tens is **greater than** 2 tens.

You can use the **greater than symbol** ( $>$ ):

5 tens  $>$  2 tens

52  $>$  25

Nora picks more apples than Nick.



496

### Deepen Understanding

#### Comparing Numbers by Using Symbols

**SMP 6** Attend to precision.

Prompt children to see the relationship between the symbols  $<$  and  $>$  and the words they represent to describe comparisons.

**Ask** What words does the symbol  $>$  replace in the sentence?

**Listen for** It means *is greater than* or *is more than*.

**Ask** How do you read  $60 > 40$ ?

**Listen for** 60 is greater than 40. 60 is more than 40.

**Ask** How do you read  $40 < 60$ ?

**Listen for** 40 is less than 60. 40 is fewer than 60.

**Generalize** Why do we use symbols instead of words to compare numbers? How can you remember which way the symbol should point? They are quicker and easier to write than words. They take up less space than words do. The pointed end of the symbol is small and it always points to the lesser number. The wide end of the symbol is larger and it always points to the greater number.

**Connect It**

**Support Whole Class Discussion**

Ask children to look at what they drew or wrote to solve the problem and compare it to the base-ten block models and place-value charts.

- 1 Help children make sense of the base-ten block model by comparing it to their own.

**Ask** *Did you model 52 and 25 using groups of 10? How is your way similar to Model It?*

**Listen for** Children may say that they showed both numbers with base-ten blocks or connecting cubes to show groups of ten.

- 2 **Ask** *How did using base-ten blocks help you compare 52 and 25 to find the greater number?*

**Listen for** The number of tens rods is the number of tens in the chart. The number of ones units is the number of ones in the chart. I can see from the base-ten block models that  $52 > 25$  because there are five tens rods in 52 and only two tens rods in 25.

**Apply It**

Explain that the next problems are an opportunity for children to practice comparing two-digit numbers.

Make base-ten blocks available.

- 3 21 is 2 tens and 1 one; 13 is 1 ten and 3 ones.  
2 tens is greater than 1 ten.  
 $21 > 13$

**Connect It**

- 1 How is your way like **Model It**? How is it different?

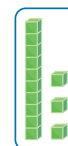
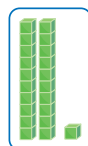
**Children may say that they showed both numbers with base-ten blocks like Model It, but Model It also showed a place-value chart.**

- 2 How did using base-ten blocks help you compare 52 and 25 to find the greater number?

**Possible answer: There are more tens in 52, so I know 52 is the greater number.**

**Apply It**

- 3 Dave has 13 crayons. Ari has 21 crayons.  
Compare. 21  13



Tens	Ones
2	1

Tens	Ones
1	3

2 tens is greater than 1 ten.

$21 > 13$



**Hands-On Activity**

**Use base-ten blocks to compare numbers.**

**If . . .** children need more practice modeling numbers to compare their values,

**Then . . .** use the activity below to reinforce the value of the digit in the tens place and the value of the digit in the ones place in a two-digit number.

**Materials** For each child: base-ten blocks (8 tens rods, 8 ones units); Activity Sheet *Tens Place-Value Mat*

- Draw a horizontal line dividing the place-value mat in half. Have children model 52 with base-ten blocks in the top half of the mat by placing the blocks for each digit in the appropriate columns. Have them do the same for 25 in the bottom half of the mat.
- Ask children to record each number on the place-value mat. Discuss the fact that 52 is greater than 25 because it has more tens.
- If children are confused by the fact that there are more ones units in 25 than there are in 52, use a separate sheet of paper to cover up the ones column and have children compare only the tens column of the two numbers.
- Repeat this activity with other pairs of two-digit numbers, such as 53 and 35.

4 48 has 4 tens and 8 ones; 24 has 2 tens and 4 ones.

4 tens is greater than 2 tens.

$$48 > 24$$

Roberto has more fish than Rena.

5 45 is 4 tens and 5 ones; 63 is 6 tens and 3 ones.

6 tens is greater than 4 tens.

$$63 > 45$$

### Support Whole Class Discussion

When children have completed problems 3–5, discuss the answers as a class.

**Ask** How does filling in the place-value chart help you compare the two numbers?

**Listen for** The place-value chart shows you which number has more tens. The number with more tens is greater.

### Close: Exit Ticket

**Materials** For each child: base-ten blocks (8 tens, 5 ones), Activity Sheet *Tens Place-Value Mat*

Use place value to compare 2 two-digit numbers.

Compare 82 and 45.  
Which number is greater?

\_\_\_ ○ \_\_\_

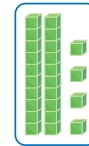
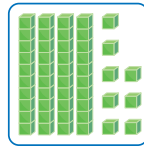
**Solution**  
 $82 > 45$   
**Look for** 82 is 8 tens and 2 ones; 45 is 4 tens and 5 ones; 8 tens is more than 4 tens.

**Error Alert** If children model the numbers correctly but write the comparison as  $45 > 82$ , then review what the symbol  $>$  means and read  $45 > 82$  out loud to show that this does not make sense. Remind children that the open part of the symbol always faces the larger number.

4 Roberto has 48 fish. Rena has 24 fish.

Who has more fish?

Compare. 48 ○ 24



Tens	Ones
4	8

Tens	Ones
2	4

4 tens is greater than 2 tens.

$$48 > 24$$

Roberto has more fish than Rena.

5 Compare 45 and 63.

Which number is greater?

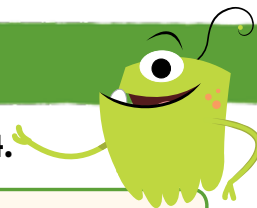
Tens	Ones
4	5

Tens	Ones
6	3

6 tens is greater than 4 tens.

$$63 > 45$$

**Practice Comparing Numbers**



Look at the Example. Then solve problems 1–4.

**Example**

Fran finds 14 shells.

Pete finds 31 shells.

Compare. 31  $\textcircled{?}$  14

31  $\textcircled{>}$  14

Tens	One
3	1

Tens	Ones
1	4

3 tens is greater than 1 ten.

1 Compare 65 and 42.

Which number is greater?

Tens	Ones
6	5

Tens	Ones
4	2

6 tens is greater than 4 tens.

65  $\textcircled{>}$  42

**Fluency Practice**

**Find 10 more and 10 less with base-ten blocks.**

**Materials** For each child: base-ten blocks (10 tens rods), Activity Sheet *10 More, 10 Less*

- Display 2 tens rods and ask: *How much?* [20] Show another tens rod. Ask: *How much now?* [30] *What is the addition equation?* [20 + 10 = 30]
- Remove 1 tens rod. Ask: *How much now?* [20] Ask: *What is the subtraction equation?* [30 - 10 = 20]
- Continue with other numbers of tens. Have children use Activity Sheet *10 More, 10 Less* and base-ten blocks to find numbers that are 10 more and 10 less than a given number of tens using equations.

- 2 8 tens is greater than 2 tens.

$$88 > 29$$

**Medium**

- 3 4 tens is greater than 3 tens.

$$47 > 37$$

**Medium**

- 4 Possible answer:

62 has 6 tens. Any number with more than 6 tens is greater than 62. Any number with 6 tens and more than 2 ones is greater than 62.

$$82 > 62$$

**Medium**

- 2 Compare 29 and 88.

Which number is greater?

Tens	Ones
2	9

Tens	Ones
8	8

8 tens is greater than 2 tens.

$$\underline{88} > \underline{29}$$

- 3 Compare 37 and 47.

Which number is greater?

Tens	Ones
3	7

Tens	Ones
4	7

4 tens is greater than 3 tens.

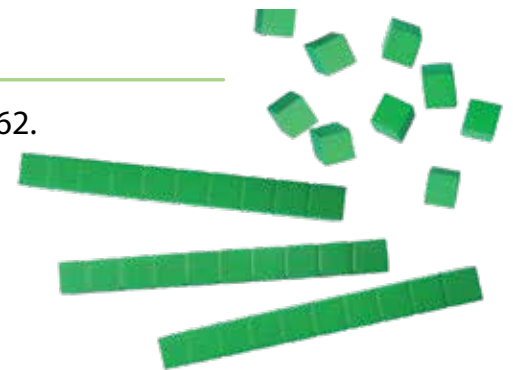
$$\underline{47} > \underline{37}$$

- 4 Find a number greater than 62.

Write it in the blank.

**Possible answer:**

$$\underline{82} > 62$$



500

**ELL**

**English Language Learners:**  
Differentiated Instruction

**Prepare for Session 3**  
Use with *Connect It*.

**Levels 1–3**

**Listening/Speaking** Give each child two place-value mats. Have them compare the number of rocks that Buzz and Boom have as described in *Connect It* problem 2 by writing each digit in the appropriate column. Ask: *Which column will you compare first?* [the tens] Have children point to the tens on each place-value mat. Ask: *Which is greater?* Encourage children to point to the answer and use the sentence frame to share the answer with a partner:

• \_\_\_\_\_ tens is greater than \_\_\_\_\_ tens.

Ask: *Which column did Buzz compare first?* [the ones] *How do you know?* [8 and 1 are the ones digits.]

**Levels 2–4**

**Reading/Speaking** Write the following poem on the board to guide children as they compare numbers in *Connect It* problem 2: *To compare two numbers, check the tens. If they are the same, look again! This time, look at the number of ones. Comparing numbers is lots of fun!* Choral read the poem. Reread the first sentence aloud to children. Allow them to use a place-value mat to compare the target numbers. Ask: *When comparing 28 and 41, did Buzz check the tens?* [no] *What would happen if he followed the steps?* [Possible answers: He would look at the 2 and 4 to see which is greater. He would see that 2 tens is less than 4 tens.]

**Levels 3–5**

**Speaking/Writing** Pair children up to discuss *Connect It* problem 2. Have them signal thumbs up if they agree with Buzz and thumbs down if they disagree, then discuss their reasoning with a partner. Refer children to the steps they wrote in their math journals during Session 2. Encourage them to use their ideas from their math journals to write a note to Buzz explaining how to compare 28 and 41.



**Purpose** In this session, children compare groups of 35 and 39 objects to determine which group has fewer. They use base-ten blocks and place-value charts to compare numbers that have the same number of tens by comparing the number of ones.

**Start**

**Develop Fluency**

**Materials** For each child: copy of printed slide

**Why** Review sequence of numbers in rows on the 120 chart to prepare for comparing two-digit numbers with the same number of tens.

**How** Fill in the missing numbers in rows of the 120 chart.

Fill in the missing numbers.

51	52	53	54	55	56	57		60	
61	62					67	68	70	
			74	75	76	77	78	80	
81	82	83	84	85	86	87			
91	92	93	94	95	96	97	98	99	100

**Solutions**  
 58, 59  
 63, 64, 65, 66  
 71, 72, 73  
 88, 89, 90

**Develop Language**

**Why** Foster the use of math-specific vocabulary when explaining how to solve a problem.

**How** Provide a word bank for children to use as they explain how they found their answer to the *Try It* problem using the sentence stem from *Discuss It*. Include terms such as: *compare, tens, ones, more, fewer, greater than, less than, same*. Encourage children to use at least one term in their explanation. Then cowrite a possible answer using 3–5 of the terms.

**Try It**

**Make Sense of the Problem**

Read the problem aloud. To support children in making sense of the problem, prompt them to identify the numbers they are being asked to compare.

**Ask** *How is this problem similar to the problems you solved in the previous session?*

**Develop** Comparing Numbers



Gabe collects 35 rocks.

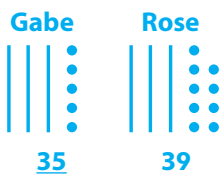
Rose collects 39 rocks.

Who collects fewer rocks?

**Try It**

Possible student work:

Sample A



Gabe collects fewer rocks.

Sample B

3 tens = 3 tens  
 9 ones > 5 ones  
 39 > 35

Gabe collects fewer rocks.



**Math Toolkit**

- base-ten blocks
- 120 charts
- tens place-value mats



**DISCUSS IT**

I found my answer by . . .

**Discuss It**

**Support Partner Discussion**

Encourage children to use place-value language as well as comparison words such as *greater than, less than, more, and fewer*.

Support as needed with questions such as:

- *How did you get started solving the problem?*
- *Did your partner have a different method for solving this problem?*
- *How did you use symbols or words to answer the question?*

**Common Misconception** If children answer the problem with  $39 > 35$ , then read the problem aloud together. Point out that *39 is greater than 35* is a true statement, but the question is asking which number is the lesser number. Have them translate this into a sentence using the word *fewer*. Model precise language by stating that the number 35 is *less than* the number 39. That means that Gabe has *fewer* rocks than Rose.



### Select and Sequence Solutions

One possible order for whole class discussion:

- base-ten block models of both numbers
- locate 35 and 39 on a 120 chart
- comparing digits in the same place value in both numbers

### Support Whole Class Discussion

**Compare and connect** different representations and have children identify how they are related.

- Ask** *What do you notice about all the models?*
- Listen for** They all show both numbers having 3 tens. They all focus on the 5 ones and the 9 ones to compare the numbers.

### Model It

If no child presented the model shown on the Student Worktext page, connect the place-value chart model to the children's models.

- Ask** *How does the place-value chart help you understand a two-digit number?*
- Listen for** The words at the top tell how many tens and how many ones a number has.
- Ask** *Does comparing the number of tens in this problem help you compare the two numbers?*
- Listen for** The number of tens is the same in both numbers. Both numbers are in the 30s, so you need to compare the number of ones.
- Ask** *Why does the model show  $5 < 9$ ?*
- Listen for** Both numbers have 3 tens, so it is important to know that 5 ones is less than 9 ones. That means  $35 < 39$ .

### Connect It

#### Support Whole Class Discussion

Ask children to look at what they drew or wrote to solve the problem and compare it to *Model It*.

- Help children make sense of the place-value chart model by comparing it to their own.
  - Ask** *How is your way of comparing the two numbers similar to the place-value chart model?*
  - Listen for** I compared the tens and ones with a drawing. I circled the 3 tens in each number and then compared the ones.

Gabe collects 35 rocks.  
Rose collects 39 rocks.  
Who collects fewer rocks?

### Model It

Compare.

$$39 \text{ ? } 35$$

Compare the tens.  
The tens are the same.

Compare the ones.

$$35 \text{ ( < ) } 39$$

Tens	Ones	Tens	Ones
3	5	3	9

5 ones is less than 9 ones.

You can use the less than

symbol ( $<$ ):

$$5 \text{ ones } < 9 \text{ ones}$$

$$5 \text{ ( < ) } 9$$

Gabe collects fewer rocks than Rose.

### Connect It

- How is your way like **Model It**? How is it different?

Children may say that 3 tens is equal in both numbers so they compare the ones. Their way may show  $9 \text{ ones} > 5 \text{ ones}$ , while **Model It** shows  $5 \text{ ones} < 9 \text{ ones}$ .

502

### Deepen Understanding

#### Using a Place-Value Chart to Compare Two-Digit Numbers

**SMP 7** Look for structure.

Support children as they begin to generalize how understanding place-value structure can help them compare numbers.

- Ask** *Which digit in a two-digit number represents the number of tens? Which digit represents the number of ones?*
- Listen for** The first digit tells the tens; the second digit tells the ones.
- Ask** *How can you find the greater number when comparing two numbers?*
- Listen for** First look at the tens digit in both numbers. If one digit is greater, it means that number is greater. If both numbers have the same tens digit, then choose the number with the greater ones digit.

**Generalize** *Which digit is most important when comparing numbers?* It depends on whether the tens digits are the same or different. Sometimes the tens digits are the most important (if they are different) and sometimes the ones digits are the most important (if the tens digits are the same).

**Connect It** (continued)

- 2 **Ask** Do you agree with Buzz that 8 ones  $>$  1 one? Do you agree that this means Buzz has more rocks than Boom?

**Listen for** Children may say that although comparing 8 ones with 1 one is done correctly, that is not the comparison that determines the greater of the two numbers. Because 4 tens is greater than 2 tens,  $41 > 28$ , so Boom collects more rocks than Buzz.

**Apply It**

Explain that the next problems are an opportunity for children to practice comparing two-digit numbers.

Make base-ten blocks and place-value mats available.

- 3 62 and 67 both have 6 tens.  
2 ones is less than 7 ones.  
 $62 < 67$
- 4 98 and 94 both have 9 tens.  
4 ones is less than 8 ones.  
 $94 < 98$

- 2 Buzz collects 28 rocks. Boom collects 41 rocks.  
Buzz says he has more rocks than Boom because  $8 > 1$ .  
Do you agree? Why or why not?

**Possible answer:** I do not agree. Boom has more rocks because 4 tens is greater than 2 tens.

**Apply It**

- 3 Compare 62 and 67.  
Which number is less?

Tens	Ones
6	2

Tens	Ones
6	7

2 ones is less than 7 ones.

$$\underline{62} < \underline{67}$$

- 4 Compare 98 and 94.  
Which number is less?

Tens	Ones
9	8

Tens	Ones
9	4

4 ones is less than 8 ones.

$$\underline{94} < \underline{98}$$

503

**Visual Model**

**Compare numbers using the 120 chart.**

**If . . .** children are unsure about comparing two-digit numbers,

**Then . . .** use this visual model to show patterns in the 120 chart.

**Materials** For each child: 2 counters, Activity Sheet 120 Chart

- Ask children to describe patterns across the rows and down the columns. Elicit that numbers increase moving left to right and top to bottom.
- Have children place counters on 48 and 24 and tell which number is less.
- Ask children how they can use the chart to verify that 24 is less than 48. [The row with 24 is closer to the top than the row with 48, so  $24 < 48$ .]
- Tell children to put counters on 94 and 98. Ask what they notice about the tens digit in all the numbers in that row. [They all have 9 tens so the numbers are all in the 90s.]
- Ask how they know 98 is greater. [Because it is closer to the end of the row.]
- Allow children to use the chart to mark numbers and compare them throughout the lesson.

- 5 52 and 57 have the same number of tens.  
2 ones is less than 7 ones.  
 $52 < 57$
- 6 89 and 83 have the same number of tens.  
3 ones is less than 9 ones.  
 $83 < 89$
- 7 Answers will vary. 50–53 are  $< 54$ ; 55–59 are  $> 54$ .

**Support Whole Class Discussion**

When children have completed problems 3–7, discuss the answers as a class.

**Ask** How does the place-value chart help you compare two numbers that have the same number of tens?

**Listen for** Compare the digits in the ones place. Whichever number has more ones is the greater number.

**Close: Exit Ticket**

Compare two numbers to find the lesser number.

Compare 68 and 64.  
Which number is less?

Tens	Ones
6	8

Tens	Ones
6	4

\_\_\_\_ < \_\_\_\_

**Possible Solution**  
68 is 6 tens and 8 ones.  
64 is 6 tens and 4 ones.  
4 ones is less than 8 ones, so  $64 < 68$ .

**Error Alert** If children answer  $68 < 64$  or  $68 > 64$ , then they may think the statement must begin with 68. Ask them to state verbally which number is less than which number. Write the statement in words and then replace words with the correct symbol. Remind them that the open side of the inequality sign always faces the greater number.

- 5 Compare 52 and 57.  
Which number is less?

Tens	Ones
5	2

Tens	Ones
5	7

2 ones is less than 7 ones.

52 < 57

- 6 Compare 89 and 83.  
Which number is less?

Tens	Ones
8	9

Tens	Ones
8	3

3 ones is less than 9 ones.

83 < 89

- 7 Find two numbers with 5 tens.  
One number is less than 54.  
The other number is greater than 54.  
Fill in the blanks.

**Possible answer:**

52 < 54      57 > 54

**Practice Comparing Numbers**

Look at the Example. Then solve problems 1–5.

**Example**

Bob has 43 cards.

Ami has 48 cards.

Compare. 43 **(?)** 48

43 **( < )** 48

Tens	Ones	Tens	Ones
4	3	4	8

Tens are the same.

Compare ones.

3 ones is less than 8 ones.



1 Compare 72 and 77.

Which number is less?

Tens	Ones	Tens	Ones
7	2	7	7

2 ones is less than 7 ones.

72 < 77

2 Compare 64 and 69.

Which number is less?

Tens	Ones	Tens	Ones
6	4	6	9

4 ones is less than 9 ones.

64 < 69

**Fluency & Skills Practice** **Teacher Toolbox**

**Assign Comparing Numbers**

In this activity children compare two-digit numbers with the same tens digit by comparing the values of their ones digits. Children can apply this strategy when comparing two-digit numbers in the real world. For example, children may compare the number of children in their first-grade classroom with the number of children in a second-grade classroom. Or, they may compare how many inches tall they are with the height requirement for a ride at an amusement park.

Fluency and Skills Practice

Comparing Numbers Name \_\_\_\_\_

1 Compare 25 and 29.  
Which number is less?  
5 ones is less than 9 ones.  
25 < 29

Tens	Ones	Tens	Ones
2	5	2	9

2 Compare 48 and 43.  
Which number is less?  
\_\_\_ ones is less than \_\_\_ ones.  
\_\_\_ < \_\_\_

Tens	Ones	Tens	Ones
4	8	4	3

3 Compare 32 and 37.  
Which number is less?  
\_\_\_ ones is less than \_\_\_ ones.  
\_\_\_ < \_\_\_

Tens	Ones	Tens	Ones
3	2	3	7

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- 3 95 and 93 each have 9 tens.  
3 ones is less than 5 ones.

$$93 < 95$$

**Medium**

- 4 52 and 56 each have 5 tens.  
2 ones is less than 6 ones.

$$52 < 56$$

**Medium**

- 5 Possible approach:

65 has 6 tens and 5 ones.

A number with 6 tens that is less than 65 will have fewer than 5 ones.

Possible answer:  $60 < 65$

A number with 6 tens that is greater than 65 will have more than 5 ones.

Possible answer:  $67 > 65$

**Challenge**

- 3 Compare 95 and 93. Which number is less?

Tens	Ones	Tens	Ones
9	5	9	3

3 ones is less than 5 ones.

$$\underline{93} < \underline{95}$$

- 4 Compare 52 and 56. Which number is less?

Tens	Ones	Tens	Ones
5	2	5	6

2 ones is less than 6 ones.

$$\underline{52} < \underline{56}$$

- 5 Find two numbers with 6 tens.

One number is less than 65.

The other number is greater than 65.

Fill in the blanks.

Possible answer:

$$\underline{60} < 65 \quad \underline{67} > 65$$

506

ELL

English Language Learners:  
Differentiated Instruction

Prepare for Session 4  
Use with *Apply It*.

### Levels 1–3

**Speaking/Reading** Organize children in groups of three to complete *Apply It* problem 5. Give each group a set of index cards with the terms: *less than*, *greater than*, and *equal to*. Include the symbol below the phrase for visual support. Display the cards face up. Have each child take a turn comparing the numbers in problem 5. After completing the circle with the correct symbol, the child should take the corresponding index card and say the term.

### Levels 2–4

**Speaking/Writing** Pair children up to solve *Apply It* problem 5. Provide sentence frames for children to refer to as they complete the circles with symbols:

- \_\_\_\_\_ is greater than \_\_\_\_\_.
- \_\_\_\_\_ is less than \_\_\_\_\_.
- \_\_\_\_\_ is equal to \_\_\_\_\_.

Have children copy the sentence frames into their math journals. For additional support, encourage children to draw the corresponding symbol next to the sentence frames. As children complete each comparison in problem 5, have them choose the correct sentence frame that matches it, and then complete the sentence frame to verbalize the answer in a complete sentence.

### Levels 3–5

**Speaking/Writing** Have children work with a partner to cowrite number stories that illustrate the comparisons from *Apply It* problem 5. Pairs can use *Apply It* Example as a model to guide their writing. Remind them to use a comparison words such as *more* or *fewer* in the question portion of the number story.

**Purpose** In this session, children practice comparing 2 two-digit numbers using place-value understanding and the symbols  $>$ ,  $<$ , and  $=$  to record the comparison.

**Start**

**Connect to Prior Knowledge**

**Materials** For each child: copy of printed slide

**Why** Review quick-draw models of base-ten blocks for use in comparing two-digit numbers.

**How** Name the number that each quick-draw model represents.

What number does each model show?

— — —

**Solutions**  
45; 72; 28

**Example**

Read the Example problem aloud and have children describe how to compare these two numbers.

**Ask** Do you have to compare both the number of tens and the number of ones to know which number is more?

**Listen for** There are 4 tens in 48 and only 1 ten in 14 so I don't have to compare the ones. I know that 4 tens  $>$  1 ten, so  $48 > 14$ .

**Apply It**

**1** 46 is 4 tens and 6 ones. 27 is 2 tens and 7 ones.  
2 tens is less than 4 tens.  
James packs fewer books than Anita.  
 $27 < 46$   
**DOK 2**

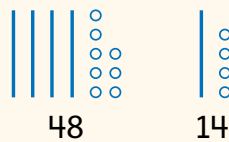
**2** 85 is 8 tens and 5 ones.  
Both numbers are the same, so  $85 = 85$ .  
**DOK 2**

**Refine** Comparing Numbers

**Complete the Example. Then solve problems 1–5.**

**Example**

Jen has 48 coins. Kim has 14 coins.  
Who has more coins?



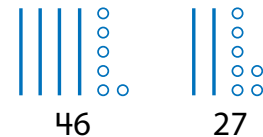
4 tens is greater than 1 ten.

$48 > 14$       Jen has more coins.



**Apply It**

**1** Anita packs 46 books.  
James packs 27 books.  
Who packs fewer books?



2 tens is less than 4 tens.

James packs fewer books than Anita.

$27 < 46$

**3** 72 has 7 tens and 2 ones.  
Each number is the same, so  $72 = 72$ .  
**DOK 2**

**4** Possible approach:  
23 is 2 tens and 3 ones.  
27 is 2 tens and 7 ones.  
3 ones is less than 7 ones.  
 $23 < 27$

Possible approach:  
69 is 6 tens and 9 ones.  
64 is 6 tens and 4 ones.  
9 ones is greater than 4 ones.  
 $69 > 64$ .  
**DOK 2**

**5** Possible approach:  
74 is 7 tens and 4 ones.  
 $74 = 74$   
96 is 9 tens and 6 ones.  
99 is 9 tens and 9 ones.  
9 ones is greater than 6 ones.  
 $96 < 99$ .  
**DOK 2**

**Close: Exit Ticket**

**Check for Understanding**

**Materials** For each child: base-ten blocks (8 tens rods, 12 ones units); For remediation: Activity Sheet 120 Chart

Ask children to tell which number is greater and explain how they know.

Which number is greater, 54 or 38?  
— > —

**Solution**  
 $54 > 38$   
**Listen for** 5 tens is greater than 3 tens so 54 is greater than 38.

**Error Alert** For children who are still struggling, use the table on the right to guide remediation. After providing remediation, check children's understanding of the following problem: Which number is greater, 46 or 61? [61]

**2** Fill in the blanks. Then write  $<$ ,  $>$ , or  $=$  in the circle.

8 tens 5 ones      8 tens 5 ones

$85 = 85$

**3** Fill in the blanks. Then write  $<$ ,  $>$ , or  $=$  in the circle.

7 tens 2 ones      7 tens 2 ones

$72 = 72$

**4** Write  $<$ ,  $>$ , or  $=$  in the circle.

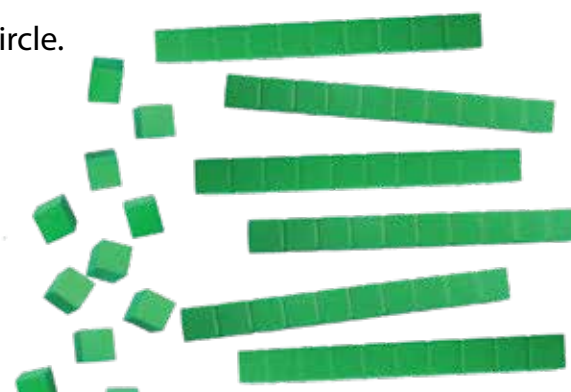
$23 < 27$

$69 > 64$

**5** Write  $<$ ,  $>$ , or  $=$  in the circle.

$74 = 74$

$96 < 99$



**Error Alert**

If the error is ...	Children may ...	To support understanding ...
$38 > 54$	have compared the digits in the ones place ( $8 > 4$ ) instead of the digits in the tens place ( $5 > 3$ ).	Provide children with base-ten blocks and ask them to model 54 and 38 as tens and ones. Have them compare 3 tens and 5 tens.
$38 > 54$	have compared the digits in the tens place and incorrectly found $3 > 5$ .	Provide children with Activity Sheet 120 Chart and have them circle 38 and 54. Ask how they can use the locations on the chart to find which number is greater.
$38 > 54$	have confused the direction of the greater than/less than symbol.	Cut out a symbol and have them rotate it on the page between the numbers, reminding them of what the open and closed sides represent.



**Practice Comparing Numbers****Look at the Example. Then solve problems 1–6.****Example**

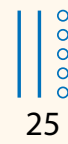
One box holds 32 crayons.

Another box holds 25 crayons.

Compare.

2 tens is less than 3 tens.

$$25 < 32$$

**1** Fill in the blanks. Then write  $<$ ,  $>$ , or  $=$  in the circle.4 tens 4 ones4 tens 7 ones

$$47 > 44$$

**2** Fill in the blanks. Then write  $<$ ,  $>$ , or  $=$  in the circle.7 tens 0 ones5 tens 8 ones

$$70 > 58$$

3  $36 < 39$   
**Medium**

4  $91 = 91$   
 $85 > 82$   
**Medium**

5  $54 > 45$   
 $36 < 63$   
**Medium**

6  $26 < 29$   
 $41 > 40$   
**Medium**

3 Fill in the blanks. Then write  $<$ ,  $>$ , or  $=$  in the circle.

3 tens 6 ones

3 tens 9 ones

$$\underline{36} \text{ } \textcircled{<} \text{ } \underline{39}$$

4 Write  $<$ ,  $>$ , or  $=$  in the circle.

$$91 \text{ } \textcircled{=} \text{ } 91$$

$$85 \text{ } \textcircled{>} \text{ } 82$$

5 Write  $<$ ,  $>$ , or  $=$  in the circle.

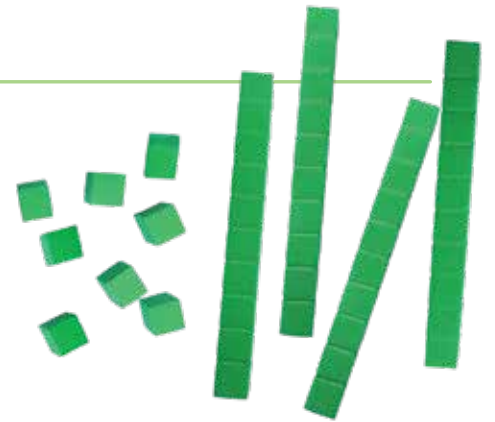
$$54 \text{ } \textcircled{>} \text{ } 45$$

$$36 \text{ } \textcircled{<} \text{ } 63$$

6 Write  $<$ ,  $>$ , or  $=$  in the circle.

$$26 \text{ } \textcircled{<} \text{ } 29$$

$$41 \text{ } \textcircled{>} \text{ } 40$$



**Purpose** In this session, children practice comparing 2 two-digit numbers using the symbols  $>$ ,  $<$ , and  $=$ .

**Start**

**Develop Fluency**

**Why** Build fluency with two-digit numbers and their place-value decomposition.

**How** Write the numbers represented by the place-value description.

Write the numbers described.

9 tens 3 ones          

3 tens 9 ones          

6 tens 0 ones          

**Solutions**

93

39

60

**Apply It**

- 1 9 tens 3 ones; 4 tens 8 ones

$93 > 48$

**DOK 2**

- 2  $16 < 60$ ; Children should circle  $<$ .

**DOK 2**

- 3  $42 < 45$

$29 = 29$

$50 > 36$

**DOK 2**

- 4  $74 = 74$

$85 < 87$

$63 > 28$

**DOK 2**

- 5  $71 > 65$

$34 < 39$

$48 = 48$

**DOK 2**

- 6  $54 < 59$

$83 = 83$

$60 > 47$

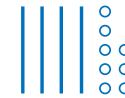
**DOK 2**

**Refine Comparing Numbers**

**Apply It**

Solve problems 1–6.

- 1 Fill in the blanks. Then write  $<$ ,  $>$ , or  $=$  in the circle.



  9   tens   3   ones

  4   tens   8   ones

$93 > 48$

- 2 Compare. Circle the correct symbol.

1 ten 6 ones

6 tens 0 ones

$16 ? 60$

$<$      $>$      $=$

- 3 Write  $<$ ,  $>$ , or  $=$  in the circle.

$42 < 45$

$29 = 29$

$50 > 36$

**Differentiated Instruction**

**RETEACH**



**Hands-On Activity**

Model a two-digit number that is  $<$ ,  $>$ , or  $=$  to a given number.

**Children** struggling with concepts of comparing two-digit numbers

**Will benefit from** additional work with choosing symbols when comparing.

**Materials** For each pair: base-ten blocks (18 tens rods, 18 ones units), 2 copies of Activity Sheet *Number Cards 0 to 11*

- Make two sets of number cards for each pair: 0–9 and 1–9. Shuffle each set.
- Partners place piles face down in two stacks: 1–9 for tens digits and 0–9 for ones digits. The symbol cards go in a separate stack face down.
- Partner A takes a digit from each stack and models the two-digit number with base-ten blocks. Partner B takes a symbol card and sets it next to the two-digit number and uses base-ten blocks to model a number that makes a true comparison.
- Partners record the comparison and repeat the activity, switching roles.

## Close: Exit Ticket

### Math Journal

Have children show how to use a quick drawing to compare the numbers 77 and 74.

Compare 77 and 74 using numbers and a symbol.



Draw to show your thinking.

#### Possible Solutions

$77 > 74$  or  $74 < 77$

**Look for** Children use quick drawings of 77 and 74 to show that they both have 7 tens but 77 has more ones.

**Error Alert** If children struggle with modeling the numbers, **then** allow them to use base-ten blocks and then guide them to translate the model they made with the blocks to a quick drawing. Have them compare the two numbers aloud, and then in writing.

- 4 Write  $<$ ,  $>$ , or  $=$  in the circle.

$$74 \text{ } \textcircled{=} \text{ } 74$$

$$85 \text{ } \textcircled{<} \text{ } 87$$

$$63 \text{ } \textcircled{>} \text{ } 28$$

- 5 Write  $<$ ,  $>$ , or  $=$  in the circle.

$$71 \text{ } \textcircled{>} \text{ } 65$$

$$34 \text{ } \textcircled{<} \text{ } 39$$

$$48 \text{ } \textcircled{=} \text{ } 48$$

- 6 Write  $<$ ,  $>$ , or  $=$  in the circle.

$$54 \text{ } \textcircled{<} \text{ } 59$$

$$83 \text{ } \textcircled{=} \text{ } 83$$

$$60 \text{ } \textcircled{>} \text{ } 47$$



512

## EXTEND

### ★ Challenge Activity

Order two-digit numbers from least to greatest and greatest to least.

**Children** who have achieved proficiency

**Will benefit from** deepening understanding of comparing multiple two-digit numbers.

**Materials** For each pair: 2 copies of Activity Sheet *Number Cards 0 to 11*

- Have children shuffle the number cards and place them face down in a single stack. Place symbol cards face up.
- One child picks 6 number cards and challenges the other child to build 3 two-digit numbers and use the symbol cards to

show the three numbers in order from least to greatest. For example, the cards 2, 4, 1, 7, 8, and 6 can be arranged as:  $16 < 24 < 78$ .

- Model for children how to read the expression as a combination of two comparisons: 16 is less than 24 and 24 is less than 78.
- When partners agree on the comparison, have them record it then switch roles and play again.

## PERSONALIZE

### i-Ready

Provide children with opportunities to work on their personalized instruction path with *i-Ready* Online Instruction to:

- fill prerequisite gaps
- build up grade-level skills