

CCSS Focus **Domain**

Number and Operations in Base Ten

Cluster

B. Tell and write time.

Standard

1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.

Additional Standards

1.NBT.B.2a, 1.NBT.B.2c (See Standards Correlations at the end of the book for full text.)

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 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.

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 Base-Ten Blocks, Counters and Connecting Cubes

Tools 

**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 $>$ 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 $<$ 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.

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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.

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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
Possible work:	
<u>28</u>	<u>31</u>

Fill in the blanks.

There are more footballs than soccer balls.

There are fewer soccer balls than footballs.

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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.



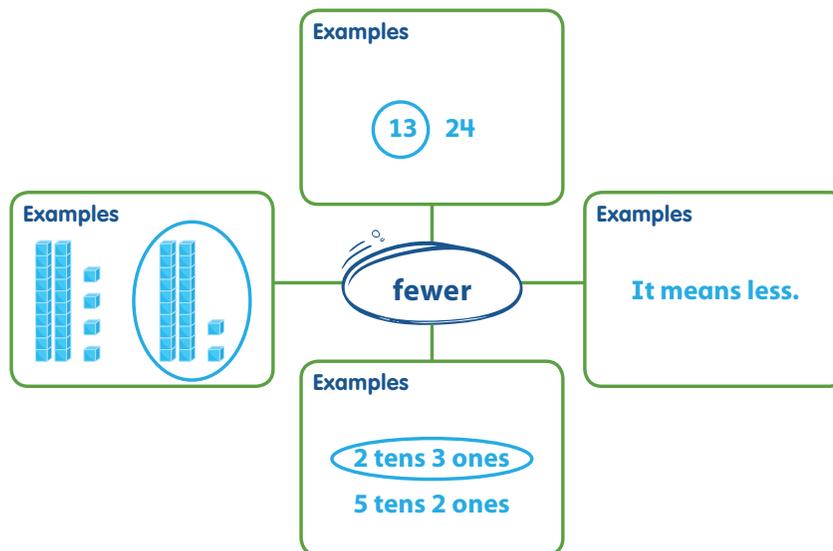
Real-World Connection

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.

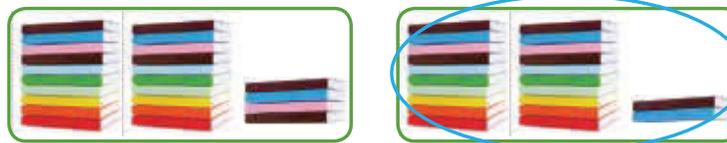
Prepare for Comparing Numbers

- 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.**

<p>apples</p> <p>Possible work:</p>  <p style="text-align: center;"><u>34</u></p>	<p>bananas</p>  <p style="text-align: center;"><u>27</u></p>
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Fill in the blanks.

There are fewer bananas than apples.

There are more apples than bananas.

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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

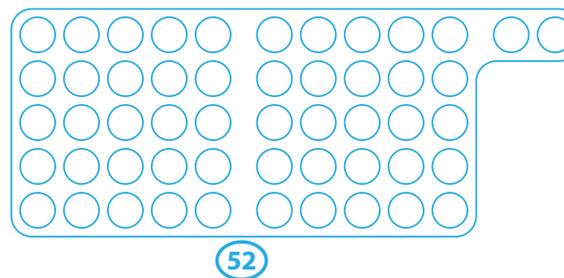
Nora picks 52 apples. Nick picks 25 apples. Who picks more apples?



Try It

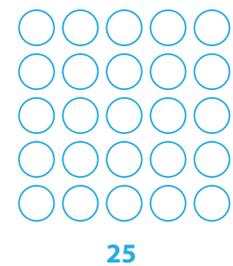
Possible student work:

Sample A



Math Toolkit

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



Nora picks more apples.

Sample B



Nora picks more apples.

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?

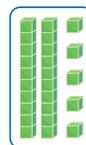
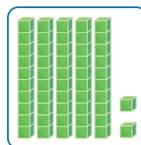
Listen for They have the same two digits, 2 and 5. In 52, the 5 is in the tens place; in 25, the 5 is in the ones place. In 52, the 2 is in the ones place; in 25, the 2 is in the tens place.

Nora picks 52 apples. Nick picks 25 apples.

Who picks more apples?

Model It

Compare. 52 $\text{\textcircled{?}}$ 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** ($>$):

$$5 \text{ tens} > 2 \text{ tens}$$

$$52 > 25$$

 Nora picks more apples than **Nick** .



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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.

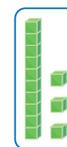
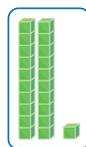
- 2 How did using base-ten blocks help you compare 52 and 25 to find the greater number?

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?

___ ○ ___

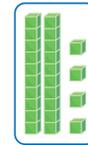
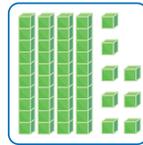
Solution
 $82 > 45$
Look for 82 is 8 tens and 2 ones; 45 is 4 tens and 5 ones; 8 tens is more than 4 tens.

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?

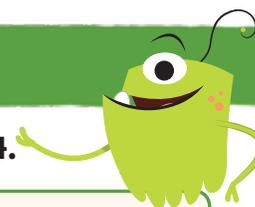
Tens	Ones
4	5

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.

$$88 > 29$$

- 3 Compare 37 and 47.

Which number is greater?

Tens	Ones
3	7

Tens	Ones
4	7

4 tens is greater than 3 tens.

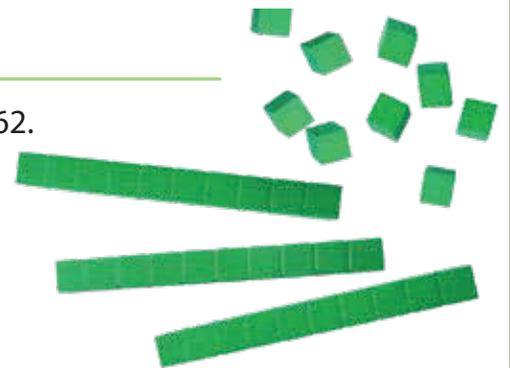
$$47 > 37$$

- 4 Find a number greater than 62.

Write it in the blank.

Possible answer:

$$82 > 62$$



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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	79	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.

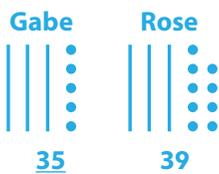
Rose collects 39 rocks.

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*.

- 1 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	
3	5	3	9

5 ones is **less than** 9 ones.

You can use the **less than** symbol ($<$):

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

$$5 < 9$$

Gabe collects fewer rocks than Rose.

Connect It

- 1 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 $5 \text{ ones} < 9 \text{ ones}$.

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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.

$62 < 67$

4 Compare 98 and 94. Which number is less?

Tens	Ones
9	8

Tens	Ones
9	4

4 ones is less than 8 ones.

$94 < 98$



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

Tens	Ones

____ < ____

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:

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

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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

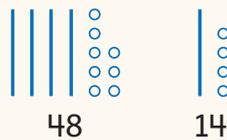
2 85 is 8 tens and 5 ones.
Both numbers are the same, so $85 = 85$.
DOK 2

Refine Comparing Numbers

Complete the Example. Then solve problems 1–5.

Example

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



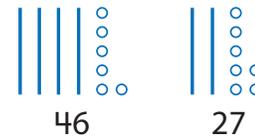
4 tens is greater than 1 ten.

$48 > 14$ 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.

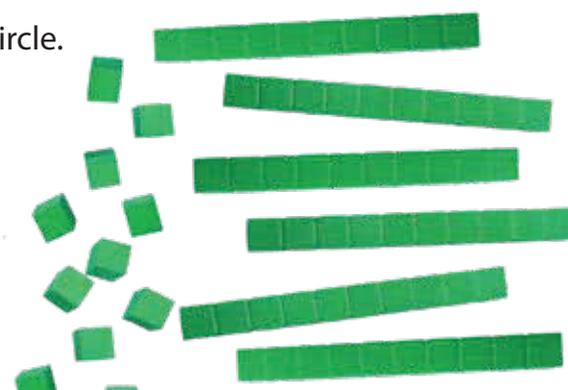
$23 < 27$

$69 > 64$

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.

Solutions

- 1 4 tens 4 ones; 4 tens 7 ones

$47 > 44$

Basic

- 2 7 tens 0 ones; 5 tens 8 ones

$70 > 58$

Basic

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 ones

4 tens 7 ones

$47 > 44$

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

7 tens 0 ones

5 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.

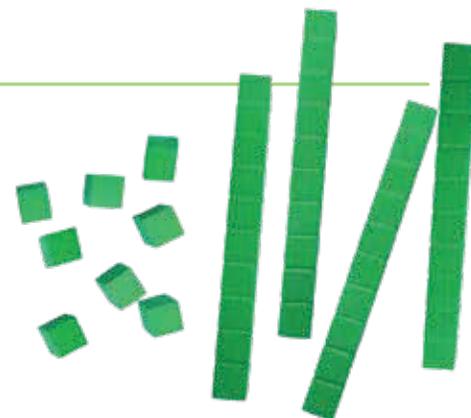
$$54 \text{ } \textcircled{>} \text{ } 45$$

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

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.

$$74 \text{ (circle with } = \text{)} 74$$

$$85 \text{ (circle with } < \text{)} 87$$

$$63 \text{ (circle with } > \text{)} 28$$

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

$$71 \text{ (circle with } > \text{)} 65$$

$$34 \text{ (circle with } < \text{)} 39$$

$$48 \text{ (circle with } = \text{)} 48$$

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

$$54 \text{ (circle with } < \text{)} 59$$

$$83 \text{ (circle with } = \text{)} 83$$

$$60 \text{ (circle with } > \text{)} 47$$



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

Tested Skills

Assesses 1.NBT.B.3

Problems on this quiz require children to be able to compare 2 two-digit numbers based on the value of the tens and ones digits and write the less than (<), greater than (>), and equal to (=) symbols to record the comparisons. Children will also need to be familiar with the terms *fewer than*, *more than*, and *the same as*. They must understand the meaning of the equal sign and understand two-digit numbers as tens and ones.

Alternately, teachers may assign the **Digital Comprehension Check** online to assess children’s understanding of this material.

Error Alert

Children may:

- confuse the symbols <, >, and = or their meaning.
- compare digits in the tens place only or the ones place only.
- compare digits in the ones place first.

Solutions

1 **56 < 65**; Children may use a 120 chart to compare 56 and 65.
 > is not correct because the symbols < and > are confused.
 = is not correct because the digits of a two-digit number are not interchangeable.

1 point

1.NBT.B.3, DOK 2

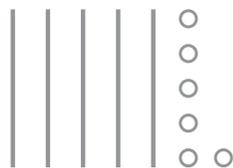
2 8 tens 0 ones; 7 tens 2 ones; **80 > 72**
 Children decompose the two-digit numbers into tens and ones and then compare. Some children may use a 120 chart to compare.

2 points

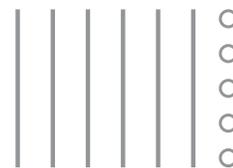
1.NBT.B.3, DOK 2

Solve.

1 Compare. Circle >, <, or =. (1 point)



5 tens 6 ones

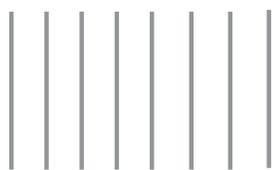


6 tens 5 ones

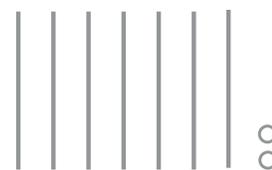
56 ? 65

< > =

2 Fill in the blanks. Then write <, >, or = in the circle. (2 points)



8 tens 0 ones



7 tens 2 ones

80 > 72

Short Response Scoring Rubric

Points	Expectations
2	Response has the correct solution(s) and demonstrates thorough understanding of mathematical concepts and/or procedures.
1	Response contains mostly correct solutions(s) and shows partial understanding of mathematical concepts and/or procedures.
0	Response shows no attempt at finding a solution and no effort to demonstrate an understanding of mathematical concepts/and or procedures.

3 4 tens 5 ones; 4 tens 9 ones; $45 < 49$
Children decompose the two-digit numbers into tens and ones and then compare. Some children may use a 120 chart to compare.

2 points

1.NBT.B.3, DOK 2

4 $48 > 46$
 $57 = 57$
 $86 < 90$

Some children will look at the tens and ones to compare each pair of numbers. Some children may use a 120 chart to compare.

2 points

1.NBT.B.3, DOK 2

5 Mel: 2 tens 7 ones; Ann: 7 tens 2 ones; $27 < 72$;
Ann has more shells.
Children decompose the two-digit numbers into tens and ones and then compare. Some children may use a 120 chart to compare.

2 points

1.NBT.B.3, DOK 2

Solve.

3 Fill in the blanks. Then write $<$, $>$, or $=$ in the circle. (2 points)

4 tens 5 ones

4 tens 9 ones

$45 < 49$

4 Write $<$, $>$, or $=$ in the circle. (2 points)

$48 > 46$

$57 = 57$

$86 < 90$

5 Mel has 27 shells.
Ann has 72 shells.
Who has more shells? (2 points)

Mel

Ann

2 tens 7 ones

7 tens 2 ones

$27 < 72$

Ann has more shells.

Differentiated Instruction

Teacher Toolbox

RETEACH: Tools for Instruction

Tools for Instruction

Compare Two-Digit Numbers

Objective: Compare two-digit numbers $>$, $<$, and $=$ symbols. **Materials:** Base ten blocks (tens and ones)

Step by Step

- Compare two-digit numbers that have a different number of tens.
 - Help the student compare 15 and 26. First, model both numbers using base ten blocks. Review and demonstrate some of the ways of counting with base ten blocks: 1 ten and 5 ones, 10 ones. Use the greatest number of tens each you can to show a number. Use less than 10 ones with the base rods to show a number. Whatever there are 10 ones or more trade 10 ones for 1 ten rod.
 - Make sure that the student understands that 15 is 1 ten and 5 ones and that 26 is 2 tens and 6 ones. Confirm that each of the representations show more than 10 ones.
 - Lead a discussion to compare the tens. Ask, Do the numbers have the same number of tens? (No) Which number has more tens? (26) Can you tell which number is greater just by looking at the tens? (Yes) Which number is greater? (26) Which number do you say that when counting? (1) Which number is less? (15)
 - Repeat that this number 26 is greater than 15 and 15 is less than 26.
 - Demonstrate the symbols for greater than ($>$), the smallest part comes first, and less than ($<$), the smallest part comes first. Help the student write and read about 26 $>$ 15 and 15 $<$ 26.
- Compare two-digit numbers that have the same number of tens.
 - Compare 17 and 14. Help the student model 17 and 14 using base ten rods and cubes.
 - Connect the models to the representation of 14 as 1 ten and 4 ones and of 17 as 1 ten and 7 ones. Ask questions to help the student compare the numbers. (20) Which number has the same number of tens? (14) Can you tell which number is greater just by looking at the tens? (No) Which number has more ones? (17) Which number is greater? (17) Is greater than 14, and 14 is less than 17.
 - Have the student write and read about 17 $>$ 14 and 14 $<$ 17.
- Provide additional practice.
 - Give the student additional number pairs to compare, such as 18 and 21, 24 and 28, and 29 and 52. Encourage the student to be the comparator on his or her own and to explain the reasoning for his or her answer. Challenge the student to make comparison statements using "less than" and "greater than" with each number pair.
 - Have the student practice writing comparison statements using the symbols $<$ and $>$.

Compare Two-Digit Numbers | Page 1 of 2

REINFORCE: Math Center Activities

Center Activity 1.34

Comparison Vocabulary

What You Need

- Recording Sheet

What You Do

- Read the problem.
- Complete the sentences to help solve the problem.
- Use words and numbers from the bank.
- Take turns to fill in the blanks.
- Read the sentences aloud. Do they make sense?
- Fix any mistakes.
- Complete the problem.

Go Further

Compare 89 and 98. Use $<$, $>$, or $=$.
Now compare 66 and 63.

EXTEND: Enrichment Activities

Enrichment Activity

Comparing Cards

Your Challenge

Ellen and Joe are playing a game. They each add the numbers on their cards. The player with the greater total wins.

- Add the numbers on the cards.
- Write each total.
- Write $<$, $>$, or $=$ in the circle to compare the totals.

Ellen: $8 + 7 + 3 = 18$

Joe: $2 + 9 + 6 = 17$

Totals: $18 > 17$

Ellen: $3 + 9 + 1 + 5 = 18$

Joe: $2 + 8 + 2 + 6 = 18$

Totals: $18 = 18$