Unit 4, Lesson 15

# Mayor que, menor que

## Standards

Addressing **1.NBT.B.3, 1.NBT.C.5, 1.OA.D.7**

## Instructional Routines

- Number Talk

## Goals

- Comprehend the meaning of the notation > and <.
- Explain (orally) how to determine if a comparison statement is true.
- Interpret (orally) comparison statements that use >, <, and =.

## Student Facing Learning Goals

Demos sentido a comparaciones y decidamos si son verdaderas.

## Lesson Purpose

The purpose of this lesson is for students to learn the meaning of the symbols < and >. Students interpret comparison statements that use these symbols and the equal sign.

## Narrative

This lesson introduces students to the symbolic notation for greater than and less than. In the first activity, students are introduced to the < and > symbols. Students observe that the larger open space of the symbol faces the greater value.

It is important for students to relate each symbol to the language "greater than" or "less than." Avoid using any non-mathematical language or representations to supplement this lesson or future lessons where students interpret and use comparison symbols. In the second activity, students read comparison statements aloud to determine which statements are true and which are false. By reading statements aloud, students practice using the language represented by each symbol. Learning the meaning of the < and > symbols and how to evaluate statements involving these symbols, is the first step toward using them fluently and accurately (MP6).

## Access for Students with Disabilities

- Engagement

## Access for English Learners

- MLR7

## Required Materials

**Materials to Gather**

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2

## Lesson Timeline

| | |
|---|---|
| Warm-up | 10 min |

## Teacher Reflection Questions

Think about who volunteered to share their thinking with the class today. Are the same students always volunteering, while some students never offer to share?

| | |
|---|---|
| Activity 1 | 20 min |
| Activity 2 | 15 min |
| Synthesis Estimate | 10 min |
| Actividad de cierre | 5 min |

What can you do to help the class understand the value of hearing the ideas of every mathematician?

# Warm-up

10 min

Conversación numérica: Sumemos o restemos 10

## Standards

Addressing **1.NBT.C.5**

## Instructional Routines

- Number Talk

The purpose of this *Number Talk* is to elicit strategies and understandings students have for adding and subtracting 10 from a two-digit number.

When students notice how the tens place changes while the ones place doesn't, they are making sense of the base-ten structure of numbers (MP7).

## Student Task Statement

Encuentra mentalmente el valor de cada expresión.

- $35 + 10$
- $52 + 10$
- $52 - 10$
- $83 - 10$

## Student Response

- 45: There are 3 tens already in 35, and 1 more ten makes 4 tens plus 5 ones.
- 62: I know that $50 + 10$ is 60. Then I added 2 more to get 62.
- 42: There are 5 tens in 52. If I take 1 ten away I have 42.
- 73: I know that $80 - 10$ is 70. Since it was 83 instead of 80, I have 73.

## Launch

- Display 1 expression.
- *"Hagan una señal cuando tengan una respuesta y puedan explicar cómo la obtuvieron" //* "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

## Activity

- Record answers and strategies.
- Keep expressions and work displayed.
- Repeat with each expression.

## Activity Synthesis

- *"¿Cuál expresión tiene un valor mayor:* $52 + 10$ *o* $52 - 10$*? ¿Pueden compararlas sin encontrar el valor de las expresiones?" //* "Which expression has a greater value $52 + 10$ or $52 - 10$? Can you compare without finding the value of the expressions?" ($52 + 10$ will be greater than $52 - 10$ because it is getting larger rather than having something taken away.)

# Activity 1

20 min

¿Cuál es mayor? ¿Cuál es menor?

## Standards

Addressing **1.NBT.B.3**

The purpose of this activity is for students to interpret comparison symbols and compare two-digit numbers based on the value of the digits using drawings, numbers, or words. During the *Launch*, students notice and wonder about two related comparison statements that use symbols rather than words. The teacher creates a chart with the comparison statements and what the symbols mean in words. Students may use connecting cubes to build each number, the value of each number's tens or ones place, or expressions that show the value of tens and ones to justify their reasoning. Students then circle the true comparison statement.

## Access for English Language Learners

*MLR7 Compare and Connect.* Synthesis: After both examples have been presented and discussed, lead a discussion comparing, contrasting, and connecting the different approaches. Ask: *"¿En qué se parecían sus estrategias al comparar 21 y 12 y al comparar 74 y 78? ¿En qué eran diferentes?" //* "How were your approaches alike when comparing 21 and 12 and when comparing 74 and 78? How were they different?"
*Advances: Representing, Conversing*

## Access for Students with Disabilities

*Engagement: Develop Effort and Persistence.* Chunk this task into more manageable parts. Check in with students to provide feedback and encouragement after each chunk.
*Supports accessibility for: Attention, Social-Emotional Functioning*

## Required Materials

**Materials to Gather**

- Connecting cubes in towers of 10 and singles: Activity 1

## Required Preparation

- Write $78 > 45$ and $45 < 78$ on a piece of chart paper.

## Student Task Statement

Marca la afirmación que es verdadera para cada pareja.
Prepárate para explicar cómo lo sabes de una forma que los demás entiendan.

$27 < 17$ $17 < 27$

$34 < 36$ $36 < 34$

## Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- Display $78 > 45$ and $45 < 78$.
- *"¿Qué observan? ¿Qué se preguntan?" //* "What do you notice? What do you wonder?" (The wider part of the symbol points toward the larger number. The

| | |
|---|---|
| $25 < 52$ | $52 < 25$ |
| $24 > 54$ | $54 > 24$ |
| $21 > 29$ | $29 > 21$ |
| $85 > 58$ | $58 > 85$ |
| $45 < 54$ | $45 > 54$ |
| $74 < 78$ | $74 > 78$ |
| $21 < 12$ | $21 > 12$ |

## Student Response

- $17 < 27$
- $34 < 36$
- $25 < 52$
- $54 > 24$
- $29 > 21$
- $85 > 58$
- $45 < 54$
- $74 < 78$
- $21 > 12$

point is toward the smaller number. Is this always true? Does the order you write the comparison matter? Does the order of the numbers matter?)

- 1 minute: quiet think time
- 2 minutes: partner discussion
- Record responses.
- *"Estos son símbolos de comparación. Los usamos para mostrar que un valor es mayor que o menor que otro sin escribir las palabras. El lado abierto, o el lado del símbolo con la mayor cantidad de espacio entre la parte superior y la inferior, siempre mira hacia el número mayor"* // "These are comparison symbols. We can use them to show that one value is greater than or less than another without writing the words. The open side, or the side of the symbol with the greater amount of space between the top and bottom, always faces the greater number."
- Record *"78 es mayor que 45"* // "78 is greater than 45" under $78 > 45$. Consider writing "greater than" in a different color.
- *"El lado puntiagudo, o el lado del símbolo con menos espacio entre las líneas, siempre mira hacia el número menor"* // "The pointy side, or side of the symbol with less space between the lines, always faces the lesser number."
- Record *"45 es menor que 78"* // "45 is less than 78" under $45 < 78$. Consider writing "less than" in a different color.

## Activity

- Read the *Task Statement*.
- 10 minutes: partner work time
- Monitor for students who:
  - Describe the relationship between 2 numbers using "greater than" and "less than."
  - Compare numbers using their place value understanding.

## Activity Synthesis

- Display $21 < 12$ and $21 > 12$.
- Invite previously identified students to share.
- *"Sabemos que 21 es mayor que 12. ¿Cómo recuerdan qué símbolo representa mayor que?"* // "We know that 21 is greater than 12. How do you

remember which symbol represents greater than?" (I think about the part of the symbol with a greater amount of space being next to the greater number.)

- Display $74 < 78$ and $74 > 78$.
- Invite students to share their thinking.
- *"74 es menor que 78. ¿Cómo saben qué símbolos muestran esto?"* // "74 is less than 78. How do you know which symbols show this?" (The side of the symbols with less space between the lines is closer to 74.)

# Activity 2

15 min

Comparaciones verdaderas o falsas

## Standards

Addressing **1.NBT.B.3, 1.OA.D.7**

The purpose of this activity is for students to determine if comparison statements are true or false and explain why. In the previous activity, students focused on using their understanding of place value to determine if the symbols were facing the appropriate numbers. In this activity, students are encouraged to read the statements from left to right before determining whether the statement is true or false. Encourage students to use the display created in the previous activity to help them interpret the symbols and read the statements. If needed, remind students that the **equal to** symbol = means "having the same value."

## Required Materials

**Materials to Gather**

- Connecting cubes in towers of 10 and singles: Activity 2

## Student Task Statement

Lee cada afirmación.
Decide si cada afirmación es verdadera o falsa.

1. $17 < 47$
2. $58 = 53$
3. $45 > 63$
4. $39 < 93$
5. $4 = 46$

Si te queda tiempo, escribe cada afirmación falsa de otra forma para que sea verdadera.

## Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- Display $45 < 54$.
- *"En la actividad anterior, decidimos que esta afirmación es verdadera. ¿Cómo leemos esta afirmación?"* // "In the last activity, we decided that this statement is true. How do we read this statement?" (45 is less than 54.)
- 30 seconds: quiet think time
- 1 minute: partner discussion


## Student Response

1. True
2. False
3. False
4. True
5. False

If you have time: Sample responses: $58 > 53$, $45 < 63$, $4 < 46$.

- Share responses.
- Display $21 > 12$.
- *"También decidimos que esta afirmación era verdadera. ¿Cómo leemos esta afirmación?"* // "We also decided this statement was true. How do we read this statement?" (21 is greater than 12.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

## Activity

- Read the *Task Statement*.
- *"Van a trabajar con su pareja en esta actividad. Asegúrense de que cada uno tenga tiempo para pensar en el problema y darle sentido antes de compartir lo que pensaron"* // "You are going to work with your partner on this activity. Make sure that each partner has time to think on their own and make sense of the problem before sharing your thinking."
- 10 minutes: partner work time
- Monitor for students who determined $58 = 53$ is false using the values of the tens or ones place to share during the *Activity Synthesis*.

## Activity Synthesis

- Display answers for students to check their work.
- Invite selected students to share their explanations for $58 = 53$.
- *"¿Cómo podemos cambiar esta afirmación para que sea verdadera?"* // "How can we change this statement so it is true?" ($58 > 53$)
- Read the new comparison statement.

## Advancing Student Thinking

If students discuss whether each statement is true or false, but do not read the statements, consider asking:

- *"¿Cómo puedes usar la presentación que hicimos como ayuda para leer la afirmación?"* // "How could you use the display we made to help you read the statement?"
- *"Lee la afirmación. ¿Qué observaste sobre el símbolo que podría ayudarte a recordar cómo se dice la próxima vez que lo leas?"* // "Read the statement. What did you notice about the symbol that could help you remember how to say it the next time you read it?"

# Lesson Synthesis

Display 43 and 48.

*"Hoy conocimos los símbolos que significan 'mayor que' y 'menor que', y comparamos más números de 2 dígitos. Usen las palabras 'mayor que' para comparar los números"* // "Today we learned symbols that mean 'greater than' and 'less than' and compared more 2-digit numbers. Use the words 'greater than' to compare the numbers." (48 is greater than 43.)
*"¿Cómo podría escribir esto usando el símbolo de mayor que?"* // "How might I write this using the greater than symbol?" ($48 > 43$)

Display 85 and 65.

*"Usen las palabras 'menor que' para comparar los números"* // "Use the words 'less than' to compare the numbers." (65 is less than 85.)
*"¿Cómo podría escribir esto usando el símbolo de menor que?"* // "How might I write this using the less than symbol?" ($65 < 85$)

*"Léanle a su pareja cada afirmación de comparación"* // "Read each comparison statement to your partner."

# Cool-down

5 min

Comparaciones verdaderas

## Standards

Addressing **1.NBT.B.3, 1.OA.D.7**

## Student Task Statement

Marca **2** afirmaciones que son verdaderas.

- $43 > 47$
- $12 < 52$
- $78 = 7$
- $68 > 64$

## Student Response

$12 < 52$ and $68 > 64$

## Responding to Student Thinking

Students circle statements that are not true.

Next Day Supports
Launch the *Warm-up* by reviewing the meaning of the > and < symbols and the display created in the lesson.