Unit 5, Lesson 2

Formemos centenas

Standards

Addressing **2.NBT.A.1.a, 2.NBT.A.1.b, 2.NBT.A.2**

Instructional Routines

- Choral Count

Goals

- Describe (orally) the relationship between the number of tens and the number of hundreds that represent the same value.
- Represent multiples of 10 and 100 using base-ten blocks and base-ten diagrams.

Student Facing Learning Goals

Representemos centenas de distintas maneras.

Lesson Purpose

The purpose of this lesson is for students to represent hundreds in different ways.

Narrative

In a previous lesson, students learned that a hundred is composed of 10 tens or 100 ones.

In this lesson, students deepen their understanding of a hundred as a unit. They learn that for every 10 tens, they can compose 1 hundred. Students notice that it may be easier to count the hundreds rather than count the tens to find a total value. Students begin to recognize and describe the patterns in the structure of the base-ten system (MP7, MP8). They recognize that 10 tens make 1 hundred, 30 tens make 3 hundreds, 60 tens make 6 hundreds, etc. as they build numbers with tens and exchange them for hundreds. Students identify the multiples of 100 written as numerals and begin to make connections between base-ten blocks and the value of each digit in a three-digit number.

Access for Students with Disabilities

- Action and Expression

Access for English Learners

- MLR8

Required Materials

Materials to Gather

- Base-ten blocks: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min

Teacher Reflection Questions

As students worked in their small groups today, whose ideas were heard, valued, and accepted? How can you adjust the group structure tomorrow to ensure each student's ideas are a part of the collective learning?

Synthesis Estimate	10 min
Actividad de cierre	5 min

Warm-up

10 min

Conteo grupal: Contemos de 10 en 10

Standards

Addressing **2.NBT.A.2**

Instructional Routines

- Choral Count

The purpose of this Choral Count is for students to practice counting by 10 beyond 120 and notice patterns in the count. These understandings help students develop fluency and will be helpful later in this lesson when students will need to be able to recognize multiples of 100 written as numerals and make connections between groups of 10 tens and hundreds.

Student Response

- Record 10 numbers in each row. Then start a new row directly below.

Sample responses:

- The numbers in the first row have 2 digits. The numbers in the other rows have 3 digits.
- All the numbers have a 0 in the ones place.
- The numbers in each column are increasing by 100.

Launch

- *"Contemos de 10 en 10, empezando en 0"* // "Count by 10, starting at 0."
- Record as students count. Record 10 numbers in each row. Then start a new row directly below.
- Stop counting and recording at 300.

Activity

- *"¿Qué patrones ven?"* // "What patterns do you see?"
- 1–2 minutes: quiet think time
- Record responses.

Activity Synthesis

- *"¿Quién puede describir el patrón con otras palabras?"* // "Who can restate the pattern in different words?"

Activity 1

20 min

Formemos centenas

Standards

Addressing **2.NBT.A.1.a, 2.NBT.A.1.b, 2.NBT.A.2**

The purpose of this activity is for students to use groups of 10 tens to compose multiples of 100. Students use base-ten

blocks to make a group of 10 tens and exchange it for 1 hundred. They find the total number of tens and represent the same quantity with hundreds. When students make connections between the number of tens and hundreds they need to represent each number and the digits in the three-digit number, they look for and express regularity in repeated reasoning (MP8).

If you do not have enough base-ten blocks for groups of 4, you can make larger groups of students to use fewer blocks.

Access for English Language Learners

MLR8 Discussion Supports. Synthesis: At the appropriate time, give students 2–3 minutes to make sure that everyone in their group can explain what they notice about the number of tens and the number of hundreds in each problem. Invite groups to rehearse what they will say when they share with the whole class.
Advances: Speaking, Conversing

Required Materials

Materials to Gather

- Base-ten blocks: Activity 1

Required Preparation

- Each group of 4 students will need at least 50 ten blocks. Do not include hundreds blocks for this activity.

Student Task Statement

1. Forma cada número usando bloques en base diez. Anota cuántos usas.

   a. Forma el 90. _____ decenas

   b. Forma el 110. _____ decenas

   c. Forma el 150. _____ decenas

2. ¿Cuántos bloques en base diez necesitas para formar el 200?

   _____ decenas

3. ¿Cuántos bloques en base diez necesitas para formar el 300?

   _____ decenas

4. ¿Cuántos bloques en base diez necesitas para formar el 300 si puedes usar 1 bloque de centena?

   1 centena _____ decenas

5. ¿Cuántas decenas necesitas para formar el 300 si puedes usar 2 bloques de centena?

Launch

- Groups of 4
- Give each group at least 50 base-ten blocks.
- *"Ayer vimos distintas maneras de representar el 100 con decenas, con unidades y también como 1 unidad en base diez llamada centena" //* "Yesterday, we looked at different ways to represent 100 with tens, ones, and as 1 unit called a hundred."

Activity

- *"Hoy vamos a usar bloques en base diez para representar números que son mayores que 100" //* "Today, we are going to use base-ten blocks to represent numbers that are greater than 100."
- *"Con su grupo, usen sus bloques en base diez para representar los números que se muestran" //* "Work with your group to represent the numbers shown with your base-ten blocks."
- 10 minutes: small-group work time
- Monitor for groups that discuss ways to represent 300 by:
  - using base-ten blocks and organizing into groups

2 centenas _____ decenas

6. ¿Cuántas decenas necesitas para formar el 300 si puedes usar solo bloques de centena?

   _____ centenas _____ decenas

Student Response

1.
   a. 9 tens
   b. 11 tens
   c. 15 tens
2. 20 tens
3. 30 tens
4. 20 tens
5. 10 tens
6. 3 hundreds, 0 tens

of 10 tens

- reasoning that if 1 hundred is 10 tens, then 2 hundreds is 20 tens, and 3 hundreds is 30 tens
- connecting patterns in the number of tens to the numerals and digits.

Activity Synthesis

- Invite previously identified students to share how they reasoned about ways to represent 300.
- *"¿Qué observaron sobre el número de decenas y el número de centenas?"* // "What did you notice about the number of tens and the number of hundreds?" (10 tens = 1 hundred, 20 tens = 2 hundreds, 30 tens = 3 hundreds)
- *"¿Cuántas centenas tengo si tengo 80 decenas?"* // "How many hundreds do I have if I have 80 tens?" (8 hundreds)

Activity 2

¿Cuántas centenas?

15 min
PLC Activity

Standards

Addressing **2.NBT.A.1.a, 2.NBT.A.1.b, 2.NBT.A.2**

The purpose of this activity is for students to make sense of representations of more than 1 hundred. Students recognize that base-ten diagrams can be used to represent hundreds even when all of the ones are not outlined. Students make connections between multiples of 10 and multiples of 100, as they consider the relationship between 70 tens and 7 hundreds. Students describe how grouping tens and counting units of 1 hundred help to count and represent large numbers.

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Synthesis: Check for understanding by inviting students to rephrase how ones, tens, and hundreds can all be used to represent the number 700 in their own words. Keep a display of their responses to reiterate this content.
Supports accessibility for: Memory, Organization

Required Materials

Materials to Gather

- Base-ten blocks: Activity 2

Student Task Statement

Han y Jada representaron 700 con bloques en base diez distintos. Después, cada uno empezó a dibujar un diagrama en base diez para mostrar lo que hizo.

Jada

Jada solo usó centenas.

Han

Han solo usó decenas.

1. Usa bloques en base diez para mostrar cómo Jada y Han representaron, cada uno, 700 con sus bloques.

2. Explica cómo sabes que ambas maneras de usar bloques en base diez muestran 700.
3. Completa el diagrama en base diez de Jada.
4. ¿Por qué crees que tomaría más tiempo terminar el diagrama de Han que el de Jada?

Student Response

1. Students use 7 hundreds blocks to show Jada's work and 70 tens blocks to show Han's work.
2. Sample responses:
   - I know Jada's way shows 700 because there are 7 hundreds blocks. Each block is 100, so you can count on by hundreds. 100, 200, 300, 400, 500, 600, 700.
   - I know Han's shows 700 because we organized the tens into groups of 10. Each group shows 1 hundred. We can just count our groups to make sure there are 7 groups.
3. Students draw 3 squares under the 4 that Jada drew to show 7 total squares.
4. Sample response: I think Han's diagram would take a longer time because I would have to show 70 tens. That means I would have to add 55 more rectangles to Han's diagram.

Launch

- Groups of 2–4
- Give students access to base-ten blocks, including hundred blocks.

Activity

- *"Han y Jada representaron 700 usando bloques en base diez"* // "Han and Jada represented 700 using base-ten blocks."
- *"Ambos iban a dibujar diagramas en base diez para mostrar sus bloques, pero se les acabó el tiempo y no los terminaron"* // "They were both going to draw a base-ten diagram to show their blocks, but they ran out of time and didn't finish."
- *"En grupo, muestren cómo Han y Jada representaron, cada uno, 700 con bloques en base diez"* // "Work with your group to show how Han and Jada each represented 700 with base-ten blocks."
- *"Después discutan cada pregunta juntos"* // "Then discuss each question together."
- 10 minutes: group work time
- Monitor for groups that organize their blocks into groups of 10 and count each group as 1 hundred.

Activity Synthesis

- *"¿Cómo saben que se muestra 700 de la manera que Jada lo quería hacer?"* // "How do you know that Jada's way shows 700?" (You could count each hundred block by 1. You could count the squares by 1. If there are 7 hundred blocks, then it shows 700.)
- Invite previously selected identified groups to share how they organized their blocks when using Han's way.

Advancing Student Thinking

If students count out 70 tens to show Han's work, but do not organize the tens into groups, consider asking:

- *"¿Cuál es el valor de todas estas decenas? ¿Cómo puedes mostrarlo?"* // "What is the value of all these tens? How can you prove that?"
- *"¿Cómo puedes organizar las decenas para que sea más fácil ver el valor total?"* // "How could you organize the tens so it's easier to see the total value?"

Lesson Synthesis

"Hoy usamos bloques y diagramas en base diez para representar números que son mayores que 100" // "Today we used base-ten blocks and diagrams to represent numbers that are greater than 100."

"¿Cuál manera de representar 700 piensan que fue más fácil: la de Jada o la de Han? Expliquen" // "Which way do you think was easier to represent 700, Jada's way or Han's way? Explain." (Jada's way because it's faster to just count out 7 blocks than 70 blocks. It was easier to make sure we were showing 700.)

"Han usó 70 bloques en total. ¿Cómo podrían representar 700 usando el mayor número posible de bloques?" // "Han's way used 70 total blocks. How could you represent 700 with the greatest number of blocks?" (You could use 700 ones.)

Suggested Centers

- Greatest of Them All (1–5), Stage 1: Two-Digit Numbers (Supporting)
- Mystery Number (1–5), Stage 1: Two-Digit Numbers (Supporting)

Cool-down

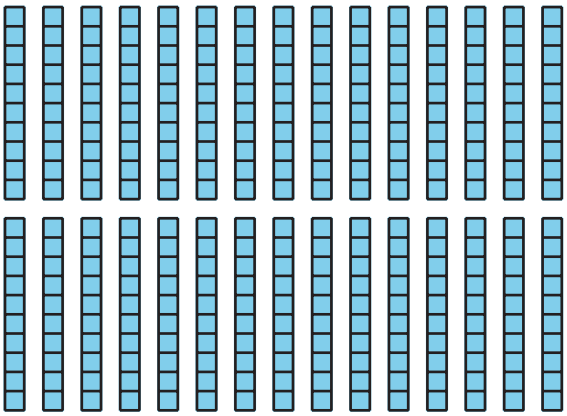
5 min

¿Cuántos?

Standards

Addressing **2.NBT.A.1.a, 2.NBT.A.1.b**

Student Task Statement



1. ¿Cuántos ves? _____
2. ¿Cómo puedes representar el mismo valor de otra manera? Muestra cómo pensaste. Usa un diagrama o palabras.

Student Response

1. Sample responses:
   - 30 tens
   - 300
   - 3 hundreds
2. Sample response: Student draws 3 squares and labels or explains them as 3 hundreds.

Responding to Student Thinking

Students write a number other than 300, 3 hundreds, or 30 tens. For example, they write 30 instead of 30 tens.

Next Day Supports
During the *Launch* of the next lesson, have students practice representing multiples of a hundred using base-ten blocks, tens, and hundreds.