

Dual Language/Bridging Lessons

Unidad 2: Potencias y Valor Posicional

Gran idea: Potencias y Valor Posicional

Conexión de contenido: Descomponer enteros, unir partes

Pregunta esencial: ¿Cómo puedes explorar las potencias de 10 y el valor posicional para descomponer enteros y unir sus partes?

Unit 2: Powers and Place Value

Big Idea: Powers and Place Value

Content Connection: Taking Wholes Apart, Putting Parts Together

Essential Question: How can you explore powers of 10 and place value to take wholes apart and put parts together?

Preguntas de enfoque por lección • Focus Questions by Lesson

Lección 1	Generalizar el valor posicional ¿Cómo se puede determinar el valor de un dígito a medida que se mueve una posición a la izquierda o a la derecha en un número entero de múltiples dígitos?
Lección 2	Extender el valor posicional a los decimales ¿Cómo se puede extender la comprensión del valor posicional de los decimales hasta la posición de las milésimas?
Lección 3	Comprender las potencias y los exponentes ¿Cómo se puede escribir una potencia de 10 como una expresión de multiplicación con factores de 10?
Lección 4	Leer y escribir decimales ¿Cómo leer y escribir decimales hasta las milésimas usando la forma estándar, la forma expandida y la forma con palabras, y entender los decimales hasta la posición de las milésimas?

Lesson 1	Generalize Place Value How can the value of a digit be determined as it moves one place to the left or to the right in a multi-digit whole number?
Lesson 2	Extend Place Value to Decimals How can place-value understanding be extended to decimals to the thousandths place?
Lesson 3	Understand Powers and Exponents How can a power of 10 be written as a multiplication expression with factors of 10?
Lesson 4	Read and Write Decimals How to read and write decimals to thousandths using standard form, expanded form, and word form, and make sense of decimals to the thousandths place?

Lección 5	Comparar decimales ¿Cómo se puede usar la comprensión del valor posicional para comparar dos decimales hasta la posición de las milésimas?	Lesson 5	Compare Decimals How can place-value understanding be used to compare two decimals to the thousandths place?
Lección 6	Usar el valor posicional para redondear decimales ¿Cómo se puede usar la comprensión del valor posicional para redondear decimales a cualquier posición?	Lesson 6	Use Place Value to Round Decimals How can place-value understanding be used to round decimals to any place?

Explorar palabras • Explore Words

Las palabras de vocabulario de la unidad se pueden usar para ayudar a los estudiantes a transferir su conocimiento del contenido de un idioma al otro: del español al inglés o del inglés al español. Consulte las estrategias para *construir el lenguaje de las matemáticas* en la página 63 de la Edición para el docente. Se pueden encontrar estrategias adicionales en las páginas 8-11 de este Manual del estudiante multilingüe.

The unit vocabulary words can be used to help students transfer their content knowledge from one language to the other—from Spanish to English, or from English to Spanish. See the *Building the Language of Math* strategies on page 63 of the Teacher Edition. Additional strategies can be found on pages 8-11 of this Multilingual Learner Handbook.

Cognados • Cognates

California Reveal Math	California Reveal Math
base decimal exponente forma exponencial potencia de 10	base decimal exponent exponential form power of 10

Subject-Verb Agreement

By understanding subject-verb agreement in what they read, students can more easily replicate those models and avoid common errors.

Begin by ensuring that students know what subjects and verbs are, reviewing the terms as needed. Next, define *agreement* in the grammatical sense by relating it to its everyday meaning and providing a synonym in match (which, as both noun and verb, aligns with both agreement and agree). Finally, review the categories singular and plural using familiar nouns in examples.

Engage students by having them indirectly collaborate on sentences to determine subject-verb agreement: Student A decides on a subject and identifies it as singular or plural; Student B then says what that subject is doing or experiencing; you and the group determine whether subject and verb agree, revising the verb form if needed.

When students have completed two sentences, have them reverse roles, so that Student B now generates the subjects and Student A supplies the appropriate verb form. (You can also pair all students at the outset so that the group members complete this activity as partner work rather than in the group setting.)

Help students transfer these skills to more challenging sentences from the Student Edition: Which of the following statements is true? Guide students to identify the subject in this case as the singular pronoun *which*, not the plural noun statements. Explain that the context is that only one statement is true—if multiple statements could be true, the verb *are* would be correct.

Select a question or set of questions to use for bridging content. Have students work in pairs or small groups to complete questions. A table of possible questions focused on representing information is presented below.

Lesson	Guided Practice Questions	Practice Questions
2-1	#1-3	#8-9
2-2	#2-3	#8-10
2-3	#1-6	#17
2-4	#1-6	#15
2-5	#4-6	#11-13
2-6	#1-6	#16-18

Multilingual Learner Scaffolds

Emerging

To help students focus on grammatical analysis, furnish sentence frames to express their findings: The subject is..., and it is singular/plural. The verb it takes is..., and it is singular/plural. You may have to explain that the subject takes the singular pronoun *it* here, as it is the word itself.

Expanding

Students may produce or encounter irregular verbs. Highlight these as they include some extremely high-frequency verbs: do, have, and be. List the singular and plural forms and create a wall chart to which students can refer not only now, but also in the future.

Bridging

Present sentences of greater length and/or difficulty from the student edition. For example, the interrogative sentence How is rounding decimals similar to rounding whole numbers? has the singular subject rounding (or the phrase rounding decimals, also singular); consequently, it needs to take the singular is to have subject-verb agreement.

Concordancia entre sujeto y verbo

Al comprender la concordancia entre el sujeto y el verbo en lo que leen, los estudiantes pueden replicar esos modelos con mayor facilidad y evitar errores comunes.

Comience asegurándose de que los estudiantes saben qué son los sujetos y los verbos, y revise los términos según sea necesario. A continuación, defina *agreement* en el sentido gramatical, relacionándola con su significado cotidiano y proporcionando un sinónimo, como coincidir (*match*), que, como sustantivo y verbo, se alinea tanto con *agreement* como con *agree*. Finalmente, repase las categorías de singular y plural usando sustantivos familiares en los ejemplos.

Involucre a los estudiantes haciendo que colaboren indirectamente en oraciones para determinar la concordancia entre el sujeto y el verbo: El Estudiante A decide un sujeto y lo identifica como singular o plural; el Estudiante B luego dice lo que ese sujeto está haciendo o experimentando; usted y el grupo determinan si el sujeto y el verbo concuerdan, revisando la forma verbal si es necesario.

Cuando los estudiantes hayan completado dos oraciones, pídale que inviertan los roles, de modo que el Estudiante B ahora genere los sujetos y el Estudiante A proporcione la forma verbal apropiada. (También puede emparejar a todos los estudiantes al comienzo para que los miembros del grupo completen esta actividad como trabajo en pareja en lugar de en el entorno grupal).

Ayude a los estudiantes a transferir estas habilidades a oraciones más desafiantes de la Edición del Estudiante: *Which of the following statements is true?* (¿Cuál de las siguientes afirmaciones es verdadera?) Guíe a los estudiantes para que identifiquen el sujeto en este caso como el pronombre singular *which* (cuál), no el sustantivo plural *statements* (afirmaciones). Explique que el contexto indica que solo una afirmación es verdadera; si múltiples afirmaciones pudieran ser verdaderas, el verbo *are* (son) sería correcto.

Seleccione una pregunta o un conjunto de preguntas para usar como conexión de contenido. Pida a los estudiantes que trabajen en parejas o en grupos pequeños para completar las preguntas. A continuación, se presenta una tabla de posibles preguntas centradas en la representación de la información.

Leccion	Preguntas de Práctica Guiada	Preguntas de Práctica
2-1	#1-3	#8-9
2-2	#2-3	#8-10
2-3	#1-6	#17
2-4	#1-6	#15
2-5	#4-6	#11-13
2-6	#1-6	#16-18

Apoyo para Estudiantes Multilingües

- Emergente** Para ayudar a los estudiantes a centrarse en el análisis gramatical, proporcione marcos de oraciones para expresar sus hallazgos: El sujeto es..., y es singular/plural. El verbo que utiliza es..., y es singular/plural. Es posible que deba explicar que el sujeto utiliza aquí el pronombre singular it (ello) porque es la palabra en sí misma (la palabra sujeto).
- En Expansion** Los estudiantes pueden producir o encontrar verbos irregulares. Resalte estos verbos, ya que incluyen algunos verbos de altísima frecuencia: do (hacer), have (tener) y be (ser/estar). Enumere las formas singulares y plurales y cree un mural al que los estudiantes puedan referirse no solo ahora, sino también en el futuro.
- En Transición** Presente oraciones de mayor longitud y/o dificultad de la edición del estudiante. Por ejemplo, la oración interrogativa How is rounding decimals similar to rounding whole numbers? (¿En qué se parece redondear decimales a redondear números enteros?) tiene el sujeto singular rounding (o la frase rounding decimals, también singular); consecuentemente, necesita usar el singular is (es) para tener concordancia entre sujeto y verbo.

Dual Language Connections

Language Objectives

Students will interpret charts to complete sentences. (Lesson 2-1)
Students will write comparisons of relationships using academic and math vocabulary. (Lesson 2-2)
Students will write explanations using precise math terms. (Lesson 2-3)
Students will write decimal numbers in word form with correct spelling and punctuation when presented with them in standard form. (Lesson 2-4)
Students will clarify their thinking by using information presented in text narratives. (Lesson 2-5)
Students will point out similarities using gerunds, such as rounding. (Lesson 2-6)

Communicate Your Understanding

Have students work with partners or in small groups to discuss the Essential question of the unit or the focus question for that lesson. Students can first discuss in Spanish, then rephrase or summarize in English.

Transfer Learning from English to Spanish

Invite students to generate words, phrases, and sentences in English that express what they have learned about the Essential Question or lesson focus question. Record their ideas on the left side of an anchor chart like the one below. Then tell students they will now transfer what they learned from English to Spanish. Begin by having students work with partners or in small groups to come up with Spanish translations for each item in the left column. Record their translations in the right column of the chart, providing any Spanish terms that students are unable to translate.

How can you explore powers of 10 and place value to take wholes apart and put parts together?	¿Cómo puedes explorar las potencias de 10 y el valor posicional para descomponer enteros y unir sus partes?
base 10 taking wholes apart putting parts together divide by powers of 10	base 10 separar un número entero reagrupar partes dividir por potencias de 10

Language and Math Sentence Frames for Unit 2

El número descrito como _____ en forma escrita se escribe en forma estándar como _____.	The number described as _____ in word form is written in standard form as _____.
Multiplicar por 10 mueve el punto decimal _____ posiciones hacia la _____.	Multiplying by 10 moves the decimal point _____ places to the _____.
La expresión $10 \times 10 \times 10 \dots$ (n veces) se puede escribir como la potencia de 10: 10^n .	The expression $10 \times 10 \times 10 \dots$ (n times) can be written as the power of 10: 10^n .

Conexiones de Lenguaje Dual

Objetivos de Lenguaje

Los estudiantes interpretarán tablas para completar oraciones. (Lección 2-1)
Los estudiantes escribirán comparaciones de relaciones utilizando vocabulario académico y matemático. (Lección 2-2)
Los estudiantes escribirán explicaciones utilizando términos matemáticos precisos. (Lección 2-3)
Los estudiantes escribirán números decimales en forma escrita con la ortografía y puntuación correctas cuando se les presenten en forma estándar. (Lección 2-4)
Los estudiantes aclararán su pensamiento utilizando información presentada en narrativas de texto. (Lección 2-5)
Los estudiantes señalarán semejanzas utilizando gerundios, como <i>redondeando</i> (<i>rounding</i>). (Lección 2-6)

Comunica tu Comprensión

Pida a los estudiantes que trabajen con compañeros o en grupos pequeños para discutir la pregunta esencial de la unidad o la pregunta de enfoque de esa lección. Los estudiantes pueden primero discutir en español y luego reformular o resumir en inglés.

Transferencia del Aprendizaje del Inglés al Español

Invite a los estudiantes a generar palabras, frases y oraciones en inglés que expresen lo que han aprendido sobre la Pregunta Esencial o la pregunta de enfoque de la lección. Registre sus ideas en el lado izquierdo de una tabla de apoyo como la que se muestra a continuación. Luego, diga a los estudiantes que ahora transferirán lo que aprendieron en inglés al español. Comience pidiendo a los estudiantes que trabajen con compañeros o en grupos pequeños para crear traducciones al español para cada elemento en la columna izquierda. Registre sus traducciones en la columna derecha de la tabla, proporcionando cualquier término en español que los estudiantes no puedan traducir.

How can you explore powers of 10 and place value to take wholes apart and put parts together?	¿Cómo puedes explorar las potencias de 10 y el valor posicional para descomponer enteros y unir sus partes?
base 10 taking wholes apart putting parts together divide by powers of 10	base 10 separar un número entero reagrupar partes dividir por potencias de 10

Language and Math Sentence Frames for Unit 2

Marcos de Oraciones de Lenguaje y Matemáticas para la Unidad 2

El número descrito como _____ en forma escrita se escribe en forma estándar como _____.	The number described as _____ in word form is written in standard form as _____.
Multiplicar por 10 mueve el punto decimal _____ posiciones hacia la _____.	Multiplying by 10 moves the decimal point _____ places to the _____.
La expresión $10 \times 10 \times 10 \dots$ (n veces) se puede escribir como la potencia de 10: 10^n .	The expression $10 \times 10 \times 10 \dots$ (n times) can be written as the power of 10: 10^n .

Written Communication

Students practice written mathematical communication by composing explanations of their problem-solving process, reasoning, or conceptual understanding. Students respond to a prompt that asks them to explain how they solved a problem, why a method works, what a concept means, or how mathematical ideas connect. Writing may include words, symbols, diagrams, and equations as appropriate.

Use the Multilingual Learner Scaffolds listed below. Remind students to use the bilingual anchor chart as a resource for vocabulary and ideas.

Multilingual Learner Scaffolds

Emerging Provide sentence frames with blanks for students to complete, a word bank with key mathematical vocabulary (with visuals or translations), and a model example. Frames should follow a simple sequence: "I used ____." "First, I ____." "Then, I ____." "The answer is ____." Students complete frames by filling in words, numbers, or short phrases from the word bank. They may add simple drawings or diagrams alongside their sentences. Accept writing that combines frames, labels, and visual representations. Students share their completed frames with a partner.

Expanding Provide sentence starters (not complete frames), a vocabulary word bank, and transition words (first, next, then, because, so). Starters guide structure but require students to complete ideas: "To solve this, I ____." "I chose this method because ____." "First, ____." "This shows ____." Students complete each starter and write 1-2 additional sentences incorporating mathematical vocabulary. Writing should include 4-6 sentences total explaining their process or reasoning. Students may include labeled diagrams. After writing, students exchange papers with a partner for peer feedback using a simple checklist: vocabulary used, steps clear, and reasoning included.

Bridging Provide an open-ended writing prompt specifying required components: explanation of process, use of precise mathematical vocabulary, reasoning or justification, and connections to concepts. Students may reference a vocabulary list, but no sentence frames or starters are provided.

Students independently compose a complete written explanation (a paragraph or an organized response, 6-8+ sentences) with clear organization: what they did, how they did it, why it works, and what it means. Writing should demonstrate mathematical reasoning using academic language. After writing, students participate in a structured peer review: exchange papers, provide written feedback on clarity and mathematical accuracy, and ask questions. Students revise their writing based on feedback.

Reading

Students practice reading mathematical terms and symbols while identifying and representing corresponding concepts in the classroom. Place content-specific cards (e.g., vocabulary terms, symbols, equations, diagrams) around the room along with visual representation cards. Have students move around the room with a recording sheet, reading the mathematical language on each card. Students then create an

appropriate representation (drawing, notation, symbolic expression, or written explanation) in the matching space on their recording sheet.

Use the Multilingual Learner Scaffolds listed below. Remind students to use the bilingual anchor chart as a resource for vocabulary and ideas.

Multilingual Learner Scaffolds

Emerging Provide students with cards that include a mathematical term or concept paired with a matching visual representation (e.g., vocabulary word + diagram, symbol + model, equation + graph). Have students point to the visual while pronouncing the mathematical term with support. Prompt them by directing attention to the representation and asking scaffolded questions such as: "Let's look at the picture/diagram/model. What do we see? Can we read/say the word/term together?"

Expanding Provide students with cards that include a mathematical term or concept paired with a visual representation, and a sentence frame or sentence starter. Have students use the sentence frame to describe what they see while incorporating the mathematical vocabulary. Prompt them with questions that encourage connected language, such as: "What do you notice about this diagram/model? Can you complete this sentence: 'This shows ___ because ___'? How would you describe this to a partner?" Students record their representation along with a labeled sentence using the provided frame.

Bridging Provide students with cards that include a mathematical term or concept with a visual representation, and prompt them to read and create their own explanation or description. Have students read the term aloud and articulate the relationship between the term and the visual using complete sentences and precise mathematical language. Prompt them with open-ended questions such as: "After reading this term, how would you explain this concept? What connections do you see between what you read and the representation? Can you describe this using mathematical vocabulary?" Students record their representation along with a written explanation that demonstrates their comprehension of the mathematical text.

Speaking

Students practice using mathematical language to describe their thinking processes, strategies, or procedures. Students engage with concrete materials, visual models, or symbolic representations and verbally explain their mathematical approach using sentence frames, Total Physical Response, and demonstrations appropriate to their language level.

Use the Multilingual Learner Scaffolds listed below. Remind students to use the bilingual anchor chart as a resource for vocabulary and ideas.

Multilingual Learner Scaffolds

Emerging Use modeling and repetition: the teacher demonstrates the math process while narrating simply. Students echo and perform the same actions with materials. Provide a visual sentence frame like "I ___ [action with icon]" or "I see/use ___." After modeling, ask students to produce the sentence and perform the action, prompting, "Show me. What did you do?" Allow one-word answers, gestures, or

frame completions. Have students share with a partner using the same frame and gestures.

Expanding

Students use concrete materials or visual models to perform the mathematical process, then describe their approach with 2-3 sentence frames, such as: "I ___ [strategy/method]," "I used ___ [tool/representation]," and "I found/got ___." Model the sequence once, then ask students: "Tell your partner how you did it using the sentence frames." Encourage gestures and pointing to materials while speaking. Pairs share their explanations with another pair or the class.

Bridging

Have students independently select and apply a mathematical strategy, process, or approach, then explain their thinking in complete sentences using precise mathematical vocabulary without relying on sentence frames. Encourage students to explain not just what they did, but why they chose that approach and how it works. Prompt with open-ended questions such as: "How did you approach this? Explain your thinking, "Why did you choose that strategy?" or "Can you describe your process step-by-step?"

Listening

Students practice listening comprehension by following verbal mathematical instructions or directions and demonstrating understanding through actions, representations, or responses. The teacher provides oral directions related to mathematical processes, procedures, or tasks, and students listen carefully, then show comprehension by performing the task using concrete materials, drawings, gestures, written responses, or verbal explanations.

Use the Multilingual Learner Scaffolds listed below. Remind students to use the bilingual anchor chart as a resource for vocabulary and ideas.

Multilingual Learner Scaffolds

Emerging

Combine verbal instructions with visual cues, gestures, concrete objects, and physical demonstrations. Use short, simple sentences with repetitive structures, pausing between steps. Model the complete action while speaking: **Example:** "First, circle the number. Next, write the answer. Then, check your work" while modeling circling a number on a worksheet, writing in the answer box, and pointing back to verify. Repeat 2-3 times. Have students repeat the action with their materials as you repeat the direction. Check comprehension by observing actions and asking yes/no questions. Accept responses through actions and gestures.

Expanding

Give clear verbal directions using complete sentences with familiar mathematical vocabulary. Repeat directions twice without physical modeling, pausing between repetitions to allow processing time. Use 1-2 step directions with specific actions. **Example:** "Listen carefully: Circle the key information in the problem. Then write the equation you will use to solve it." Pause, then repeat once. After the second repetition, students perform the task independently using materials or representations. Check comprehension by observing actions and having students briefly explain their process.

Bridging

Provide complex, multi-step verbal directions using precise mathematical vocabulary and detailed instructions. State directions once or twice without visual aids or modeling. Require students to listen for sequence, conditions, or specific criteria. For example: "Listen carefully: identify key information, determine the appropriate operation and rationale, then solve and verify using a different method." Students must listen, process the entire instruction, and respond independently, demonstrating understanding through their work. Afterward, prompt them to verbally explain their process and reasoning using complete sentences and mathematical language. Encourage paraphrasing to show comprehension of procedures and concepts.