

Dual Language/Bridging Lessons

Unidad 4: Números de Múltiples Dígitos:
Estrategias y Algoritmos de Suma y Resta

Gran idea: Números de Múltiples Dígitos

Conexión de contenido: Explorando
cantidades cambiantes

Pregunta esencial: ¿Cómo puedes usar
estrategias de suma y resta para números de
múltiples dígitos para explorar cantidades
cambiantes?

Unit 4: Multi-Digit Numbers: Addition and
Subtraction Strategies and Algorithms

Big Idea: Multi-Digit Numbers

Content Connection: Exploring Changing
Quantities

Essential Question: How can you use
addition and subtraction strategies for
multi-digit numbers to explore changing
quantities?

Preguntas de enfoque por lección • Focus Questions by Lesson

Lección 1	Estimar sumas o diferencias ¿Cómo se puede usar la comprensión del valor posicional para redondear números enteros de múltiples dígitos?
Lección 2	Estrategias para sumar números de múltiples dígitos ¿Cómo se pueden sumar números de múltiples dígitos ajustando los números o usando sumas parciales?
Lección 3	Comprender un algoritmo de suma ¿Cómo se puede usar un algoritmo para sumar números de múltiples dígitos?
Lección 4	Comprender un algoritmo de suma que involucra reagrupación ¿Cómo se puede usar un algoritmo para sumar números enteros de múltiples dígitos cuando se requiere reagrupar?

Lesson 1	Estimate Sums or Differences How can place-value understanding be used to round multi-digit whole numbers?
Lesson 2	Strategies to Add Multi-Digit Numbers How can multi-digit numbers be added by adjusting numbers or using partial sums?
Lesson 3	Understand an Addition Algorithm How can an algorithm be used to add multi-digit numbers?
Lesson 4	Understand an Addition Algorithm Involving Regrouping How can an algorithm be used to add multi-digit whole numbers when regrouping is required?

Lección 5	Estrategias para restar números de múltiples dígitos ¿Cómo se pueden restar números de múltiples dígitos, ajustando los números o descomponiendo los números por valor posicional?	Lesson 5	Strategies to Subtract Multi-Digit Numbers How can multi-digit numbers be subtracted by adjusting numbers or by decomposing numbers by place value?
Lección 6	Comprender un algoritmo de resta ¿Cómo se puede usar un algoritmo para restar números de múltiples dígitos?	Lesson 6	Understand a Subtraction Algorithm How can an algorithm be used to subtract multi-digit numbers?
Lección 7	Comprender un algoritmo de resta que involucra reagrupación ¿Cómo se puede usar un algoritmo para restar números de múltiples dígitos cuando se requiere reagrupar?	Lesson 7	Understand a Subtraction Algorithm Involving Regrouping How can an algorithm be used to subtract multi-digit numbers when regrouping is required?

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 195 de la Edición para el docente. Se pueden encontrar estrategias adicionales en las páginas 9-13 de este Manual del estudiante multilingüe.

The unit vocabulary words can 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 195 of the Teacher Edition. Additional strategies can be found on pages 9-13 of this Multilingual Learner Handbook.

Cognados • Cognates

California Reveal Math	California Reveal Math
Algoritmo	Algorithm
Descomponer	Decompose
Diferencia	Difference
Estimar	Estimate
Estimación de cifras delanteras	Front-end estimation
Estrategia de sumas parciales/ sumas parciales	Partial-sums strategy/partial sums
Reagrupar	regroup

Distinguishing Between Open-ended and Closed-ended Questions

To help students collaborate more productively and craft more effective oral and written responses, teach the distinction between open- and closed-ended questions.

First, review the meanings of open and closed, and, more importantly, their general connotations. Start with familiar, concrete examples such as open and closed doors, and then lead into more abstract applications such as open and closed minds. Explain that an open mind is agreeable to new things and ideas, while a closed mind is restricted or limited.

Clarify that these positive and negative associations do not apply to open- and closed-ended questions. Rather, an open-ended question is one without a specific answer. A closed-ended question is asked with the expectation that there is a single correct answer.

Lead students to discover how to differentiate between the two inductively. Present a range of questions from the text and/or from recent classroom work. Focus on each, asking What's a possible answer to this?

Point out that these responses do not need to be correct; rather, it is the kind of response that students should be noting. Does it feel limited, or can those answering the question respond at length in a variety of acceptable ways? With this in mind, help students identify each question as open-ended or closed-ended.

Conclude by pairing students for further practice. Have them scan the current lesson and identify the question types. Encourage them to share any signal words and phrases they notice with the group.

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
4-1	#1-2	#10-11
4-2	#1-7	#11-15
4-3	#1-4,7	#9-12,14
4-4	#1-4	#11-12
4-5	#1-4,6	#7-10,12
4-6	#1-4	#7-10,12
4-7	#1-4	#8-12

Have students use counters, cubes, or arrays to represent the problems. Students explain their model in Spanish, then English.

Multilingual Learner Scaffolds

- Emerging** Explain that open-ended questions are often prompts for responders to share ideas, opinions, and personal thoughts/ experiences. These questions can be as brief as Why? Using this as a starting point, show students that How? questions often call for open-ended responses, while What?, When?, and Where? questions usually do not.
- Expanding** Ask volunteers to explain a challenging math concept or skill to the group. Coach the listeners to ask open-ended questions so that the speaker can explain a process or strategy. When the explanation calls for calculations, however, guide students to identify helpful closed-ended questions such as What is the sum?
- Bridging** Invite students to revisit their recent written responses to open-ended questions and encourage self-reflection about their work. Ask what kinds of words, phrases, and organizational structures have worked best? Work with students to list these as suggestions/ recommendations and have them summarize their findings for the group.

Distinguir entre preguntas abiertas y cerradas

Para ayudar a los estudiantes a colaborar de manera más productiva y elaborar respuestas orales y escritas más efectivas, enseñe la distinción entre preguntas abiertas y cerradas.

Primero, repase los significados de abierto y cerrado y, más importante aún, sus connotaciones generales. Comience con ejemplos familiares y concretos, como puertas abiertas y cerradas, y luego continúe hacia aplicaciones más abstractas, como mentes abiertas y cerradas. Explique que una mente abierta está dispuesta a cosas e ideas nuevas, mientras que una mente cerrada está restringida o limitada.

Aclare que estas asociaciones positivas y negativas no se aplican a las preguntas abiertas ni a las cerradas. Más bien, una pregunta abierta es una sin una respuesta específica. Una pregunta cerrada se hace con la expectativa de que existe una sola respuesta correcta.

Guíe a los estudiantes a descubrir cómo diferenciar entre una y otra de manera inductiva. Presente una variedad de preguntas del texto y/o del trabajo reciente en el salón de clases. Enfóquese en cada una, pregunte: ¿Cuál es una posible respuesta a esto?

Señale que estas respuestas no necesitan ser correctas; más bien, es el tipo de respuesta que los estudiantes deben estar notando. ¿Se siente limitada o pueden aquellos que responden la pregunta responder extensamente de diversas maneras aceptables? Con esto en mente, ayude a los estudiantes a identificar si cada pregunta es abierta o cerrada.

Concluya emparejando a los estudiantes para la práctica adicional. Pídales que revisen la lección actual e identifiquen los tipos de preguntas. Anímelos a compartir cualquier palabra o frase señalada que noten con el grupo.

Seleccione una pregunta o un conjunto de preguntas para usar como puente de contenido. Pida a los estudiantes que trabajen en parejas o en grupos pequeños para completar las preguntas. A continuación se presenta una tabla con posibles preguntas enfocadas en representar información.

Lección	Preguntas de Práctica Guiada	Preguntas de Práctica
4-1	#1-2	#10-11
4-2	#1-7	#11-15
4-3	#1-4,7	#9-12,14
4-4	#1-4	#11-12
4-5	#1-4,6	#7-10,12
4-6	#1-4	#7-10,12
4-7	#1-4	#8-12

Pida a los estudiantes que usen fichas, cubos o arreglos para representar los problemas. Los estudiantes explican su modelo en español, luego en inglés.

Apoyos para Estudiantes Multilingües

- Emergente** Explique que las preguntas abiertas suelen servir de indicación para que quienes respondan compartan ideas, opiniones y pensamientos o experiencias personales. Estas preguntas pueden ser tan breves como ¿Por qué? Usando esto como punto de partida, muestre a los estudiantes que las preguntas de ¿Cómo? a menudo requieren respuestas abiertas mientras que las preguntas de ¿Qué?, ¿Cuándo? y ¿Dónde? generalmente no.
- En Expansión** Pida a voluntarios que expliquen un concepto o habilidad matemática desafiante al grupo. Oriente a los oyentes a hacer preguntas abiertas para que el hablante pueda explicar un proceso o estrategia. Sin embargo, cuando la explicación requiera cálculos, guíe a los estudiantes a identificar preguntas cerradas útiles como ¿Cuál es la suma?
- En Transición** Invite a los estudiantes a revisar sus respuestas escritas recientes a preguntas abiertas y anime la autorreflexión sobre su trabajo. Pregunte: ¿qué tipos de palabras, frases y estructuras organizativas han funcionado mejor? Trabaje con los estudiantes para enlistar estas como sugerencias/recomendaciones y pídale que resuman sus hallazgos para el grupo.

Dual Language Connections

Language Objectives

Students read and analyze information in a table to write evaluations of statements. (Lesson 4-1)
Students make comparisons by having collaborative conversations to share information. (Lesson 4-2)
Students explain how adding multi-digit numbers with an algorithm and partial sums are alike and different. (Lesson 4-3)
Students describe why regrouping is sometimes necessary when adding multi-digit numbers. (Lesson 4-4)
Students discuss and explain their preferences to compare them with those of others. (Lesson 4-5)
Students write a defense of a process by citing reasons and using academic vocabulary. (Lesson 4-6)
Students write analyses of different algorithms using compare-contrast organization. (Lesson 4-7)

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 use addition and subtraction strategies for multi-digit numbers to explore changing quantities?	¿Cómo puedes usar estrategias de suma y resta para números de múltiples dígitos para explorar cantidades cambiantes?
Place value Standard algorithm Regroup Decompose	Valor posicional Algoritmo estandar Reagrupar Descomponer

Language and Math Sentence Frames for Unit 4

Primero, sumamos los _____, luego los _____, y después sumamos las partes para encontrar el total.	First, we add the _____, then the _____, and then sum the parts to find the total.
Restamos al descomponer el número _____ en _____ y _____.	We subtract by decomposing the number _____ into _____ and _____.
En el algoritmo de resta, necesitamos reagrupar de la columna de las _____ para restar en la posición de las _____.	In the subtraction algorithm, we need to regroup from the _____ column to subtract in the _____ position.

Conexiones de Lenguaje Dual

Objetivos de Lenguaje

Los estudiantes leen y analizan información en una tabla para escribir evaluaciones de enunciados. (Lección 4-1)
Los estudiantes hacen comparaciones teniendo conversaciones colaborativas para compartir información. (Lección 4-2)
Los estudiantes explican en qué se parecen y en qué se diferencian sumar números de varios dígitos con un algoritmo y sumas parciales. (Lección 4-3)
Los estudiantes describen por qué reagrupar es a veces necesario al sumar números de varios dígitos. (Lección 4-4)
Los estudiantes discuten y explican sus preferencias para compararlas con las de otros. (Lección 4-5)
Los estudiantes escriben una defensa de un proceso citando razones y usando vocabulario académico. (Lección 4-6)
Los estudiantes escriben análisis de diferentes algoritmos usando organización de comparación-contraste. (Lección 4-7)

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 discutir primero 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 use addition and subtraction strategies for multi-digit numbers to explore changing quantities?	¿Cómo puedes usar estrategias de suma y resta para números de múltiples dígitos para explorar cantidades cambiantes?
Place value Standard algorithm Regroup Decompose	Valor posicional Algoritmo estandar Reagrupar Descomponer

Marcos de Oraciones de Lenguaje y Matemáticas para la Unidad 4

Primero, sumamos los _____, luego los _____, y después sumamos las partes para encontrar el total.	First, we add the _____, then the _____, and then sum the parts to find the total.
Restamos al descomponer el número _____ en _____ y _____.	We subtract by decomposing the number _____ into _____ and _____.

En el algoritmo de resta, necesitamos reagrupar de la columna de las _____ para restar en la posición de las _____.

In the subtraction algorithm, we need to regroup from the _____ column to subtract in the _____ position.

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 read mathematical statements and contextual problems, then identify and justify appropriate solution strategies. Working in pairs, students analyze the problem, discuss which strategy would be most effective, select their approach, and document their chosen strategy on a 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 visual supports by including pictures, diagrams, or manipulatives alongside the mathematical statements or word problems. Conduct a guided reading of the problem, pointing to key words and visuals while reading aloud. Have students echo-read or chorally read short phrases. In pairs, students point to and discuss visuals, select a strategy using the anchor chart, and record it on their sheet using provided sentence frames such as: "We will use ____" or "Our strategy is ____."

Expanding Provide mathematical statements and word problems with visual supports such as manipulatives, number lines, diagrams, or annotated text with key vocabulary highlighted. Have students read the problem with a partner, taking turns reading sentences aloud. In pairs, students discuss which strategy to use by completing sentence frames such as: "We chose ____ because ____" or "This strategy works because ____." Students record their chosen strategy with a brief explanation on their recording sheet and share their reasoning with another pair using the sentence frames.

Bridging Have students read mathematical statements and word problems independently, annotating key information and vocabulary as they read. In pairs, students discuss and select a strategy, then write a complete explanation of their reasoning using mathematical vocabulary and connecting words (because, since, so, therefore). Students record: (1) their chosen strategy, (2) why they selected it, and (3) how it connects to the problem. Pairs share their written reasoning with another pair, comparing solution approaches and justifications.

Speaking

Students engage in structured one-on-one or small-group interviews in which they verbally explain their mathematical thinking, problem-solving process, or understanding of a concept. A partner, small group, or teacher asks guiding questions, and the student responds orally, elaborating on their reasoning. The interviewer may ask follow-up questions to deepen the explanation or clarify understanding.

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 visual supports (their work, manipulatives, diagrams) to reference during the interview. Give both the interviewer and

respondent simple questions and sentence frames: "What did you use?" / "I used ____." "Show me ____." / "This is ____." "What is the answer?" / "The answer is ____."

Students respond with 1-2-word answers, short phrases, or simple sentences using sentence frames, supported by pointing and gestures. Interviewer asks 2-3 basic questions. Accept responses combining words, gestures, and visual references. Partners switch roles so each student practices both asking and answering.

Expanding

Provide students with a list of interview questions and sentence frames for responses: "How did you solve this?" / "I solved it by ____." "Why did you choose that method?" / "I chose ____ because ____." "What does ____ mean?" / "It means ____."

Students respond using complete sentences (3-5 sentences total), incorporating mathematical vocabulary from a word bank. Interviewer asks 3-4 questions, including at least one follow-up: "Can you explain that more?" or "What happened next?" Students may reference their work or visuals while speaking. Partners switch roles.

Bridging

Provide students with open-ended interview questions that require detailed explanations: "Explain your complete problem-solving process." "Why does this method work?" "How would you solve this differently?" "What connections do you see?"

Students provide detailed explanations, using precise mathematical vocabulary and academic language, and speak for 1-2 minutes per question. Responses should include reasoning, justification, and examples. Interviewer asks follow-up analytical questions: "Can you elaborate on ____?" "What if ____?" "How does this relate to ____?" Students think aloud, building on questions without relying on frames. Partners or small groups switch roles, with each student practicing extended mathematical discourse.

Listening

Students practice listening comprehension by hearing verbal descriptions or explanations of how a mathematical problem is solved using a particular strategy, method, or approach. Students listen carefully to identify the strategy being described and demonstrate understanding through responses appropriate to their language level (pointing, naming, writing, or explaining). The teacher presents each explanation twice, and students share their responses with a partner. This cycle is repeated for multiple strategies, procedures, or approaches, building students' ability to distinguish between different mathematical methods through auditory processing.

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 visual strategy cards or anchor charts showing each strategy with images and labels. Read the explanation slowly with frequent pauses, using simple sentences and gestures. Example: "I use [strategy]. First, I [action]. Then, I [action]. I get [result]." Repeat twice, pointing to visuals or demonstrating with manipulatives. Students respond by pointing to the correct strategy card. Prompt: "Which strategy? Show me." Accept single words, pointing, or gestures. Students share with a partner by showing their card and saying the strategy name.
- Expanding** Read explanations using complete sentences with precise pacing and grade-appropriate vocabulary. Example: "To solve this, I used [strategy]. First, I [step]. Then, I [step]. Finally, I [result and reasoning]." Read twice without visual modeling. Provide strategy cards or a listening checklist with questions: "What strategy?" "What numbers?" "What steps?" Students identify the strategy and complete 2-3 checklist items using short phrases. Partners compare responses using frames: "I heard ___" or "The strategy was ___ because ___."
- Bridging** Read explanations at a natural pace using complex sentences, academic vocabulary, and detailed reasoning. Include transition words and justifications (because, therefore, in order to). Read twice without support. Students take brief notes, writing key words, steps, or mathematical terms. After listening, students: (1) identify the strategy, (2) list the main steps heard, and (3) note academic vocabulary. Partners compare notes and discuss: "What strategy and what evidence supports it?" "What key vocabulary did you hear?" Students paraphrase the explanation, demonstrating comprehension of the procedure and reasoning.