Explore: Filling Containers

EB **Emergent Bilinguals** Use during the **Activity, Connect** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain the process used to compare the capacities of containers.
- **Listen** and **Speak** about these statements as they reflect on the Activity.

ELPS: 1.E, 2.C, 2.E, 2.F

Spanish Cognates

English	*connect*	*idea*	*mathematician*	*pattern*	*problem*
Español	*conectar*	*idea*	*matemático*	*patrón*	*problema*

Materials

Students need access to the following materials.

In this Resource:

- *Ways to be a Mathematician* PDF, one per student
- *Questions and Sentence Frames* PDF (for display)

Explore, Ways to be a Mathematician

Distribute the *Ways to be a Mathematician* PDF and display the *Questions and Sentence Frames* PDF. To promote mathematical discussion, try to pair students who speak the same primary language together.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which of the ways did you use to predict the capacities of containers?"
  - "Did you take your time to think about the problem before trying to solve it? What plan did you use to predict the capacities of containers?"
  - "Did you choose a tool that was right for the problem you solved? Which tool(s) did you choose to help you predict the capacities of containers?"
  - "Did you work carefully and share your ideas clearly? Which new mathematical words did you use or learn today?"

Sample responses shown.

Pre-Production

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Encourage students to respond in their primary language first. Then encourage them to point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Invite students to share responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words or by pointing to the PDF.

Consider modeling using the sentence frames to restructure student responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in phrases or incomplete sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences, as they answer the questions on the *Questions and Sentence Frames* PDF. Then to discuss their thinking with their partner, using the supports from the PDF, as needed.

Which Is Largest?
Defining Volume

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe the relative sizes of figures by counting unit cubes and expressing the volume as cubic units.
- **Listen** and **Speak** using the language from this activity, such as **cubic unit**, **unit cube**, **volume**.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*compare*	*cube*	*figure*	*unit*	*volume*
Español	*comparar*	*cubo*	*figura*	*unidad*	*volumen*

Materials

From Activity 2, Launch:

- connecting cubes

Students also need access to the following additional materials.

In this Resource:

- *Comparing Volume* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 2, Monitor

Distribute the *Comparing Volume* PDF. Use this resource to support students as they complete the task during the Monitor.

Consider asking (scaffolded questions are included under each question, as needed):

Use with Problem 4:

- "Who's figure has a greater volume? How do you know?"
  - "What is the volume of your/your partner's figure?"
  - "Which figure has a greater volume?"

Use with Problem 5:

- "If 1 figure has a greater volume than another, what does that tell you about the figures?"
- "If 2 figures have the same volume, what does that tell you about the figures?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Mine has a greater volume.
My/their figure is _____ cubic units.
The first one has more unit cubes.
They have the same unit cubes.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

My figure has a greater volume because I used more unit cubes.
The volume of my/my partner's figure is _____ cubic units.
If 1 figure has a greater volume, then it uses more unit cubes.
If 2 figures have the same volume, then they use the same amount of unit cubes.

Cube Figures
Developing Strategies to Determine Volume

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe the layered structure of a rectangular prism.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *cubic unit*, *rectangular prism*, *unit cube*, *volume*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*compare*	*cubic*	*figure*	*unit*	*volume*
Español	*comparar*	*cúbico*	*figura*	*unidad*	*volumen*

Materials

From Activity 1, Launch:

- connecting cubes
- 3 × 2 × 2 rectangular prism (for display)

Students also need access to the following additional materials.

In this Resource:

- *Building Prisms* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 1, Monitor

Distribute the *Building Prisms* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How can you describe the rectangular prism?"
  - "How many layers are there?"
  - "How many rows are in each layer? Columns?"
  - "Are all of the layers identical?"
  - "What is the volume of the rectangular prism?"
- "How is your rectangular prism similar to your partner's? How is it different?"
  - "Do both rectangular prisms have the same number of layers? Volume?"
  - "Do both rectangular prisms have the same number of rows in each layer? Columns?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

It has 5 layers.
There are 2 rows and 3 columns.
The volume is 30 cubic units.
They both have the same number of layers. They have different rows and columns. The volumes are different.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The rectangular prism has 5 identical layers with 2 rows of 3 columns.
The volume of the rectangular prism is 30 cubic units.
Our rectangular prisms have the same number of layers, but we have different columns and rows in each layer.
The volumes of our rectangular prisms are different.

Stacking Garbage

Using the Structure of Rectangular Prisms to Determine Volume

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain different ways to represent, describe, and determine the volume of a rectangular prism.
- **Listen** and **Speak** using the language from this activity, such as *cubic unit*, *rectangular prism*, *unit cube*, *volume*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*cube*	*multiply*	*prism*	*rectangular*	*volume*
Español	*cubo*	*multiplicar*	*prisma*	*rectangular*	*volumen*

Materials

From Activity 2, Launch:

- 6 × 4 × 5 rectangular prism (for display)

Students also need access to the following additional materials.

In this Resource:

- *Where Are the Layers?* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 2, Monitor

Distribute the *Where Are the Layers?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How does the description explain the volume of the rectangular prism?"
  - "How does the description help us understand the volume of the rectangular prism?"
- "How could you use the descriptions to calculate the volume of the prism?"
- "How are Problems 3 and 4 similar? How are they different?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

It says the number of layers and cubes, so I can multiply those numbers to get the volume.
5 × 24 = 120.
They all have a volume of 120, but they use different layers and cubes.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The description explains the volume because it says the number of layers and cubes, which can be multiplied to find the volume.
I can use the description *5 layers* of *24 cubes* to calculate the volume by multiplying 5 × 24 and get a volume of 120.
Problems 3 and 4 are similar because they have a volume of 120. They are different because they use a different number of layers and cubes.

Piled High

Determining Volume Using the Number of Layers and Area of the Base Layer

EB **Emergent Bilinguals** Use during the **Activity 2**, Monitor step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how expressions can represent the volume of a rectangular prism.
- **Listen** and **Speak** using the language from this activity, such as *rectangular prism*, *volume*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*base*	*cube*	*expression*	*multiplication*	*operation*	*represent*
Español	*base*	*cubo*	*expresión*	*multiplicación*	*operación*	*representar*

Materials

Students need access to the following materials.

In this Resource:

- *Expressing Volume* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 2, Monitor

Distribute the *Expressing Volume* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking:

- "What information does the problem give to help you determine the volume?"
- "What operation can you use to determine the volume?"
- "What expression can be used to determine the volume of the prism?"
- "How does this expression represent the volume of the prism?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

It says the bottom layer has 24 boxes and there are 5 layers.
Multiplication.
24 × 5.
It shows how many boxes are in all the layers together.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The problem tells me that the bottom layer holds 24 boxes and that the crate has a total of 5 layers.
I can use multiplication.
The expression that can be used to determine the volume is 24 × 5.
This expression represents the volume because it calculates the total number of boxes in the crate, which is the volume.

Volume of Rectangular Prisms

Developing Formulas for Determining Volume

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to determine the volume of any rectangular prism.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *cubic unit*, *rectangular prism*, *volume*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*area*	*base*	*prism*	*product*	*rectangular*	*volume*
Español	*área*	*base*	*prisma*	*producto*	*rectangular*	*volumen*

Materials

From Activity 2, Launch:

- connecting cubes

Students also need access to the following additional materials.

In this Resource:

- *Developing Formulas* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 2, Monitor

Distribute the *Developing Formulas* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking:

- "What do you know about determining the volume of a rectangular prism?"
- "Which operation can be used to determine the volume of the prism?"
- "How can the base area and number of layers help you determine the volume?"
- "What formula did you use to determine the volume of the rectangular prism?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The base area and number of layers can help me find the volume.
Multiplication.
The base area is the space on 1 layer, and I can multiply it by the number of layers.
***B* × *h*.**

Students may respond using a variety of sentence types

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I know that the base area and number of layers can determine the volume.
Multiplication can be used to determine the volume of a rectangular prism.
The base area and number of layers can help me determine the volume because the base area shows the space on 1 layer. I can multiply the base area by the number of layers to determine the product, which is the volume. I used the formula *V* = *B* × *h*.

Shipping Out Trash

Representing and Solving Problems Related to Area and Volume

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to use the formulas for volume to solve for unknown quantities.
- **Listen** and **Speak** using the language from this activity, such as *cubic units*, *volume*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*area*	*base*	*cubic*	*divide*	*yard*
Español	*área*	*base*	*cúbico*	*dividir*	*yarda*

Materials

From Activity 1, Launch:

- *Isometric Dot Paper* PDF
- *Volume Formulas* PDF

Students also need access to the following additional materials.

In this Resource:

- *Filling Shipping Containers* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 1, Monitor

Distribute the *Filling Shipping Containers* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What is the problem asking you to find?"
- "How can using the volume formula help you determine the unknown quantity?"
  - "How does the volume formula help you determine the missing number?"
- "What information from the problem can you use to help you solve for the missing quantity?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The area of the base layer.
I can flip the formula to find the area.
I can use the volume and the height.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The problem is asking me to determine the area of the base layer.
The volume formula helps me determine the unknown number because I can rearrange the formula to do the volume divided by the height.
I can use the volume of 270 and the height of 9 to divide and determine the area of the base layer.

Trash to Treasure
Using Multiplication to Calculate Volume

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how different multiplication expressions can represent the volume of the same rectangular prism.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *Associative Property of Multiplication*, *rectangular prism*, *volume*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*area*	*base*	*dimension*	*multiply*	*prism*	*rectangular*
Español	*área*	*base*	*dimensión*	*multiplicar*	*prisma*	*rectangular*

Materials

From Activity 2, Launch:

- connecting cubes
- *Activity 2* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Writing Expressions* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 2, Monitor

Distribute the *Writing Expressions* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking:

- "What dimensions do the numbers 2, 3, and 6 represent in your prism?"
- "How does 12 × 3 relate to 2 × 3 × 6?"
- "How can 2 expressions with different numbers still have the same volume?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Length, width, and height.
Both have the same volume.
Even if I group together some numbers, I still get the same answer.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

2, 3, and 6 represent the length, width, and height of the prism.
12 × 3 relates to 2 × 3 × 6 because both expressions calculate the same volume of 36 cubic units.
Two expressions with different numbers still have the same volume because the Associative Property of Addition says that when you multiply 3 numbers, it doesn't matter how you group them, you will still get the same answer.

Figures Made of Prisms

Determining Volumes of Figures in Different Ways

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain different ways to determine the volume of an image of a figure composed of rectangular prisms.
- **Listen** and **Speak** using the language from this activity, such as *cubic unit*, *rectangular prism*, *volume*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*figure*	*multiply*	*part*	*prism*	*volume*
Español	*figura*	*multiplicar*	*parte*	*prisma*	*volumen*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Seeing Prisms* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 1, Monitor

Distribute the *Seeing Prisms* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How would you decompose this figure?"
  - "In what ways can you break down this figure into smaller parts?"
- "How does decomposing the figure help you determine the volume?"
- "How is finding the volume of Mai's figure similar to finding the volume of Clare's figure? How is it different?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I can split the prism so one is 2, 2, 5, and the other has 3, 5, 5.

It helps me because I break it into smaller parts.

Mai split her figure into 20 and 75 and Clare split hers into 45 and 50.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I would decompose this figure by making 1 prism that is 2 × 2 × 5 and another prism that is 3 × 5 × 5. Decomposing the figure helps me determine the volume by breaking it into smaller shapes that are easier to measure and add together. Mai's strategy is similar to Clare's strategy because both decompose the figure into 2 smaller rectangular prisms and then add their volumes together. Mai's strategy is different from Clare's strategy because Mai decomposed her figure into 20 and 75 cubes, while Clare decomposed hers into 45 and 50 cubes.

How Many Rectangles?
Determining Factor Pairs

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how you know when you have found all the possible factor pairs for a given number.
- **Listen** and **Speak** using the language from this activity, such as *factor*, **factor pair/factor pairs**.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*area*	*factor*	*multiply*	*prism*	*rectangle*
Español	*área*	*factor*	*multiplicar*	*prisma*	*rectángulo*

Materials

From Activity 1, Launch:

- inch tiles

Students also need access to the following additional materials.

In this Resource:

- *Quilt Design* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 1, Monitor

Distribute the *Quilt Design* PDF. Use this resource to support students as they complete Problem 3 during the Monitor and prepare their responses to share during the Connect.

Consider asking:

- "How do you know you have found all the possible rectangles?"
- "What strategies did you use to find the length and width?"
- "What are the factors of 24?"
- "How can you check if there are any other rectangles with an area of 24?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The factors of 24 are 1, 2, 3, 4, 6, 8, 12, 24.

The factors are my side lengths.

I was able to create 4 rectangles.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I created all possible rectangles because I used all possible factor pairs.

I created all possible rectangles by finding all possible factor pairs.

My factor pairs are 1 × 24, 2 × 12, 3 × 8, and 4 × 6.

My factor pairs/factors are 1, 2, 3, 4, 6, 8, 12, 24.

Hamster Homes

Real-World Problems Involving Factor Pairs

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to solve problems using factor pairs.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *factors*, *factor pairs*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*factor*	*multiple*	*multiply*	*pattern*	*prime*	*product*
Español	*factor*	*múltiplo*	*multiplicar*	*patrón*	*primo*	*producto*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Platform Heights* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 1, Monitor

Distribute the *Platform Heights* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What do you know about factors and their products to determine the possible platform heights that could be made?"
  - "How can using factors and multiples help you determine heights?"
  - "What are the factors of 66?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Three heights are 6, 9, 12.
I can multiply 3 by 2 to get 6 as the height.
Mel is right.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

My platform height can be 12 because it is a factor of 6.
Factor pairs helped me determine the possible heights.
I agree with Mel because 66 is a factor of 6.

How Many Factors?
Introducing Prime and Composite Numbers

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Determine and explain whether a given whole number is prime or composite.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as **composite number**, *factor*, **prime number**.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*composite*	*factor*	*multiple*	*number*
Español	*compuesto*	*factor*	*múltiplo*	*número*

Materials

From Activity 2, Launch:

- *Centimeter Grid Paper* PDF
- inch tiles

Students also need access to the following additional materials.

In this Resource:

- *Prime or Composite?* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 2, Monitor

Distribute the *Prime or Composite?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What is the difference between a prime and composite number?"
  - "What is a prime number?"
  - "What is a composite number?"
  - "How are they different?"
- "What strategies could you use to determine whether a number is prime or composite?"
  - "How can factors and factor pairs help you determine if a number is prime or composite?"
  - "What are the factors of ____?"
  - "How many factors does a prime/composite number have?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

7 is prime.
10 is composite.
I know it is prime. There are no more factors.
I know it is composite. There are a lot of factors.

Students may respond using a variety of sentence types.

Advanced

Encourage students o use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

13 is prime because it only has 2 factors/ 1 factor pair.
54 is composite because it has more than 2 factors, such as 1 × 54 and 2 x 27.
92 has the factors 1, 2, 4, 23, 46, and 92, so it is composite.

Mystery Numbers

Using Factors and Multiples to Describe and Identify Numbers

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe numbers using an understanding of factors, multiples, and prime and composite numbers.
- **Listen**, **Speak**, **Read**, and **Write** using the language from this activity, such as *composite number*, *factor*, **multiple**, *prime number*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.E, 3.C, 3.F, 3.G, 4.C, 4.D, 4.F

Spanish Cognates

English	*composite*	*factor*	*multiple*	*number*
Español	*compuesto*	*factor*	*múltiplo*	*número*

Materials

Students need access to the following materials.

In this Resource:

- *What Number Am I?* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 2, Monitor

Distribute the *What Number Am I?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Is 13 prime or composite?"
  - "How many factor pairs does it have?"
- "What are the factors of 13?"
- "Is 13 a multiple of another number?"

Repeat the above questions for the numbers 18 and 29.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

13 is prime because I cannot divide it evenly.
18 is composite because 2 × 9.
Only 1 factor pair for 29.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

13 is prime because it only has 1 factor pair and cannot be divided evenly.
18 is composite because it has multiple factor pairs and is a multiple of 2 and 9.
29 is prime because it is not divisible by anything except 1 and 29, so it only has 1 factor pair.

1.14 Activity 1 Number Game

Applying Factors, Multiples, and Prime and Composite Numbers

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Ask questions about numbers using an understanding of factors, multiples, and prime and composite numbers.
- **Listen**, **Speak**, and **Read** using the language from this activity, such as *composite number*, *factor*, *multiple*, *prime number*.

ELPS 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.E, 3.F, 3.G

Spanish Cognates

English	*composite*	*factor*	*multiple*	*number*
Español	*compuesto*	*factor*	*múltiplo*	*número*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Captain Bob's Game* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 1, Monitor

Distribute the *Captain Bob's Game* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How can you identify each other's mystery number?"
  - "Is it prime?"
  - "Is it composite?"
  - "Is _____ a factor of _____?"
- "How can you eliminate numbers?"
  - "Is it even?"
  - "Is it odd?"
- "What is another question that could help you eliminate more numbers?

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

It is prime.
It is composite.
It has 2 factors.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I can eliminate it because it is composite.
It is prime because it only has 2 factors.
This could be Captain Bob's number because it is composite.

Operation: Organize and Order!

Introducing Order of Operations

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Determine and explain the purpose of order of operations.
- **Listen** and **Speak** using the language from this activity, such as *expression*, **order of operations**, **simplify**, *value*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*divide*	*expression*	*multiply*	*operation*	*simplify*	*value*
Español	*dividir*	*expresión*	*multiplicar*	*operación*	*simplificar*	*valor*

Materials

Students need access to the following materials.

In this Resource:

- *Organize for Order* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 2, Monitor

Distribute the *Organize for Order* PDF. Use this resource to support students as they complete the task and prepare to participate in the discussion in Problem 7 during the Monitor.

Consider asking (scaffolded questions are included under each question, as needed):

- "Why is it important to follow the order of operations?"
  - "Will you get a different answer than your partner if one of you follows the order of operations and the other does not?"
  - "Is it possible to get the same answer as your partner if one of you uses the order of operations and the other does not?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

We all get the same answer.
We always get the correct answer.
Two people should get the same answer.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

It is important to follow the order of operations so we all get the correct answer and our answers are the same.
If 2 different people solve the problem, they should be able to get the same answer if they use the correct order of operations.

1.16 Activity 1 Numbers Work In Groups

Describing the Meaning of Parentheses and Brackets

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe the meaning of parentheses and brackets in a numeric expression.
- **Listen**, **Speak**, and **Read** using the language from this activity, such as **brackets**, *expression*, **parentheses**, *simplify*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*double*	*expression*	*multiply*	*operation*	*simplify*
Español	*doble*	*expresión*	*multiplicar*	*operación*	*simplificar*

Materials

Students need access to the following materials.

In this Resource:

- *Groups of Garbage* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 1, Monitor

Distribute the *Groups of Garbage* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

Use with Problem 2:

- "What is the purpose of the parentheses in Expression 1?"
  - "How does that change the order in which you solve the expression?"
  - "How do the parentheses make the expressions different?"

Use with Problem 3:

- "What is the purpose of the brackets in Expression 2?"
  - "How do brackets change the order of operations?"
- "What does the 2 in front of the brackets represent?"
  - "What operation does the bracket represent?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The parentheses means I solve it first.
It is different because I solve 3 + 1 first.
I need to solve the problem inside the brackets first.
I need to multiply by 2.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The purpose of the parentheses in Expression 1 is that I must simplify that part of the expression first.
The parentheses make the expressions different because it changes the order of operations and the answer.
The purpose of the brackets in Expression 2 is that I must simplify that part of the expression first.
The 2 in front of the brackets represents multiplication.

Super-Sized Equations

Representing Multi-Step Story Problems with Equations that Include Grouping Symbols

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how equations that include grouping symbols represent a story problem.
- **Listen** and **Speak** using the language from this activity, such as *brackets*, *parentheses*, *simplify*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*cubic*	*equation*	*material*	*multiply*	*parentheses*	*prism*
Español	*cúbico*	*ecuación*	*material*	*multiplicar*	*paréntesis*	*prisma*

Materials

Students need access to the following materials.

In this Resource:

- *Multi-Step Equations, Part 1* PDF
- *Vocabulary Cards, Unit 1* PDF

Activity 1, Monitor

Distribute the *Multi-Step Equations, Part 1* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How do the strategies you and your partner used compare with the strategies the other pair used?"
  - "What strategies did you and your partner use?"
  - "What strategies did the other pair of students use?"
  - "What is similar between the strategies? What is different?"
- "How do the equations you and your partner created compare with the equations the other pair created?"
  - "What equations did you and your partner create?"
  - "What equations did the other pair of students create?"
  - "How are the equations similar? How are they different?"
- "What does the expression in the parentheses represent in the story problem?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

We wrote down what we knew and what we needed to find.
They drew a picture and labeled it.
We all wrote 4 and 2.
We wrote 1,536 ÷ (4 × 2). They wrote (1,536 ÷ 4) × (1,536 ÷ 2).
We all divided and multiplied.
The width and height.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

My partner and I started by writing down what we knew and the unknown. The other pair of students started by drawing a picture and labeling it. We all wrote 4 and 2.
My partner and I wrote the equation 1,536 ÷ (4 × 2) and they wrote (1,536 ÷ 4) × (1,536 ÷ 2). We all divided and multiplied.
The expression in the parentheses represents the width and height of the prism.

Explore:
Quilts for Critters

EB **Emergent Bilinguals** Use during the **Activity, Connect** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain how a pictorial model represents a mathematical situation.
- **Listen** and **Speak** about these statements as they reflect on the Activity.

ELPS: 1.E, 2.C, 2.E, 2.F

Spanish Cognates

English	*connect*	*idea*	*mathematician*	*problem*
Español	*connectar*	*idea*	*matemático*	*problema*

Materials

Students need access to the following materials.

In this Resource:

- *Ways to be a Mathematician* PDF
- *Questions and Sentence Frames* PDF (for display)

Explore, Ways to be a Mathematician

Distribute the *Ways to be a Mathematician* PDF and display the *Questions and Sentence Frames* PDF. To promote mathematical discussion, try to pair students who speak the same primary language together.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which of the ways did you use to find how much of the quilt each animal will get?"
  - "Did you take your time to think about the problem before trying to solve it? What plan did you use to find how much of the quilt each animal will get?"
  - "Did you use math to solve real-world problems? What real-world problem were you trying to solve?"
  - "Did you create representations to organize your mathematical ideas? Which representations did you use?"

Sample responses shown.

Pre-production

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Encourage students to respond in their primary language first. Then encourage them to point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Invite students to share responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words or by pointing to the PDF.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in phrases or incomplete sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in simple, complete sentences.

Advanced

Encourage students to use complete sentences as they answer the questions on the *Questions and Sentence Frames* PDF. Then encourage them to discuss their thinking with their partner, using the supports from the PDF, as needed.

Sharing Stories

Multiplying Whole Numbers by Unit Fractions When the Multiplier Is a Whole Number

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain how a representation shows multiplication of a whole number and a unit fraction.
- **Listen, Speak,** and **Read** using the language from this activity, such as *compose, expression*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*area*	*compose*	*different*	*expression*	*total*
Español	*área*	*componer*	*diferente*	*expresión*	*total*

Materials

From Activity 2, Launch:

- two-color counters

Students also need access to the following additional materials.

In this Resource:

- *Feeding the Animals* PDF

Activity 2, Monitor

Distribute the *Feeding the Animals* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you model multiplication?"
  - "How does your model in Problem 3 represent the total cups of dog food?"
  - "How does your expression in Problem 3 represent the total cups of dog food?"

Repeat the questions above with specifics for Problem 4.

- "How is your model for Problem 3 similar to your model for Problem 4? How is it different?"
- "How is your expression for Problem 3 similar to your expression for Problem 4? How is it different?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

8 models for 8 dogs.
4 parts in the model. 1 shaded. This shows $\frac{1}{4}$.
The models show 1 area model for 1 animal.
They use 1, 4, 8. The numbers are in different places.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

My model has 8 area models, 1 for each dog. I cut each into 4 parts and shaded 1 to show $\frac{1}{4}$ cup for each dog.
My expression is $8 \times \frac{1}{4}$ because 8 dogs each receive $\frac{1}{4}$ cup.
The models show 1 area model for each animal. There are 8 models for the dogs, but only 4 models for the kittens.
My expressions are similar because they use 1, 4, and 8. They are different because the fractions are different.

Fruitful Fractions

Multiplying Unit Fractions by Whole Numbers

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain what happens to a whole number when multiplied by a unit fraction.
- **Listen, Speak,** and **Read** using the language from this activity, such as *product, unit fraction*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*factor*	*fraction*	*product*
Español	*factor*	*fracción*	*producto*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Changing Ingredients* PDF

Activity 1, Monitor

Distribute the *Changing Ingredients* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What patterns do you notice when multiplying a unit fraction by a whole number?"
  - "How are the denominator and whole number related?"
  - "How many unit fractions do you need to equal 1 whole?"
  - "How much of the whole does the unit fraction represent?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The answer is always 1.

For $\frac{1}{12}$ I need 12 to equal 1 whole.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I noticed when the whole number and the denominator of the unit fraction are the same, the number of equal groups will always be equal to 1.

Representation Matters

More Scaling Whole Numbers by Unit Fractions

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain how a pictorial model represents a multiplication expression.
- **Listen** and **Speak** using the language from this activity, such as *unit fraction*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*fraction*	*unit*
Español	*fracción*	*unitaria*

Materials

Students need access to the following materials.

In this Resource:

- *Fractional Factors* PDF

Activity 2, Monitor

Distribute the *Fractional Factors* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What representation did you create to model the multiplication equation?"
  - "What patterns do you notice when multiplying a unit fraction by a whole number?"
- "How are these representations and equations similar? How are they different?"
- "Is the answer the same?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English. .

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I made 3 groups of $\frac{1}{4}$ pieces.
I represented 3 groups broken into fourths and then shaded 3.
I can switch the order of the equation and the answer will be the same.
Our models are different, but our answers are the same.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I represented 3 groups of $\frac{1}{4}$ by shading in 3 of the $\frac{1}{4}$ pieces.

I represented 3 groups broken into fourths and then shaded 3.
Our models were different because we changed the order of the factors, but the product remained the same.
The models looked different depending on the order of the factors, but the products were similar.

Multiplying With Non-Unit Fractions

Determining Products of Whole Numbers and Non-Unit Fractions

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain how different equivalent expressions represent the product of a whole number and a non-unit fraction.
- **Listen, Speak,** and **Write** using the language from this activity, such as *non-unit fraction*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*denominator*	*equivalent*	*expression*	*factor*	*group*	*numerator*	*part*
Español	*denominador*	*equivalente*	*expresión*	*factor*	*grupo*	*numerador*	*parte*

Materials

Students need access to the following materials.

In this Resource:

- *Representing a Model With Expressions* PDF

Activity 2, Monitor

Distribute the *Representing a Model With Expressions* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

Comparing explanations for Problems 5–7:

- "Why did that expression match that model?"
  - "What did your explanations have in common?"
  - "What was different about your explanations?"

Explaining equivalent expressions for Problem 8:

- "How are the equations for Problem 6 and 7 equivalent?"
- "Is there another equivalent expression that matches the model?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The diagram shows 3 groups of 2 shaded parts. The expressions are written differently.
$\frac{2}{5} \times 3$ is also an equivalent expression $\frac{2}{5}$ of each whole is shaded.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

Both explanations refer to 3 groups of 2 shaded parts, but they refer to the size of the shaded parts differently.
Another equivalent expression that represents the diagram is $\frac{2}{5} \times 3$ because $\frac{2}{5}$ of each whole is shaded.

Ronnie the Roly Poly

Representing Equivalent Multiplication Expressions

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain or show that different expressions representing the product of a whole number and a fraction are equivalent.
- **Listen** and **Speak** using the language from this activity, such as *composite number, prime number.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*denominator*	*expression*	*factor*	*numerator*	*represent*
Español	*denominador*	*expresión*	*factor*	*numerador*	*representar*

Materials

From Activity 2, Launch:

- *Activity 2* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Fill the Gaps!* PDF

Activity 2, Monitor

Distribute the *Fill the Gaps!* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Is the non-unit fraction a multiple of at least 1 other non-unit fraction with the same denominator?"
  - "Is the numerator a multiple of at least 1 other number?"
- "Why were there more expressions for $\frac{8}{10}$ than for $\frac{5}{6}$?"
  - "What was different about the numerators in those fractions?"
- "How does drawing diagrams show that 2 expressions are equivalent?"
  - "How many parts are shaded in each diagram?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

$4 \times \frac{2}{10}$ and $2 \times \frac{4}{10}$ are equivalent. They both equal $\frac{8}{10}$.
$5 \times \frac{1}{6}$ represents $\frac{5}{6}$. My diagram has 5 groups of $\frac{1}{6}$, or $\frac{5}{6}$.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

$4 \times \frac{2}{10}$ and $2 \times \frac{4}{10}$ are equivalent because when I multiply the whole number by the numerator, they both equal $\frac{8}{10}$.
$5 \times \frac{1}{6}$ represents $\frac{5}{6}$ because my diagram has 5 groups of $\frac{1}{6}$ for a total of $\frac{5}{6}$.

Bamboozled

Multiplying Whole Numbers and Mixed Numbers

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain how to estimate products using the relative sizes of fractions.
- **Listen** and **Speak** using the language from this activity, such as *mixed number*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*estimate*	*fraction*	*number*	*product*	*reasonable*
Español	*estimar*	*fracción*	*número*	*producto*	*razonable*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Missing Bamboo Shoots* PDF

Activity 1, Monitor

Distribute the *Missing Bamboo Shoots* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which 2 values could the third/fourth bamboo shoot be placed between?"
- "How can benchmark values help you estimate the product?"
  - "What does it mean to estimate?"
  - "What whole number is closest to $\frac{9}{5}$ or $2\frac{2}{9}$?"
  - "How can you use whole numbers to help you estimate where the third/fourth bamboo shoot could be placed?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Between 5 and 6.
$\frac{9}{5}$ is less than 2.
2 × 3 = 6 and 5 is less than 6.
The whole numbers help me estimate.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The answer should be between 5 and 6 because $\frac{9}{5}$ is a little less than 2.
2 × 3 = 6 and 5 is less than 6.
I can use the whole numbers 1, 5, and 6 to help me estimate where the shoot should go.

Sharing Cat Food

Representing and Solving Division of a Whole Number by a Unit Fraction

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain how a representation shows division of a whole number by a unit fraction.
- **Listen, Speak,** and **Write** using the language from this activity, such as *dividend, divisor, expression, quotient, unit fraction*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*divide*	*divisor*	*fraction*	*multiply*	*part*	*unit*
Español	*dividir*	*divisor*	*fracción*	*multiplicar*	*parte*	*unitario*

Materials

From Activity 1, Launch:

- pre-cut fraction strips from the *Activity 1* PDF or classroom fraction strips

Students also need access to the following additional materials.

In this Resource:

- *Feeding the Kittens* PDF

Activity 1, Monitor

Distribute the *Feeding the Kittens* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What does your model represent?
  - "What is being divided?"
  - "How does your model represent the division of a whole number by a fraction?"
  - "How did you represent the whole number? How did you represent the unit fraction?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

My model shows the whole number being divided by a unit fraction.
The whole number is being divided by the unit fraction, and I am solving for how many pieces there are.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

My fraction strip represents the whole number being divided by a unit fraction.
The dividend is the whole number being divided.
The divisor is the unit fraction.
The quotient is how many total unit fraction pieces make up the whole number.

Hungry, Hungry Puppies

Dividing Whole Numbers by Unit Fractions

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain what the dividend, divisor, and quotient represent in an equation that represents a story problem.
- **Listen, Speak,** and **Write** using the language from this activity, such as *dividend, divisor, equation, quotient, unit fraction.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*dividend*	*divisor*	*quotient*
Español	*dividendo*	*divisor*	*cociente*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *How Many Servings?* PDF

Activity 1, Monitor

Distribute the *How Many Servings?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What does the model represent?"
  - "Which value is the dividend? Which value is the divisor? What are you solving for?"
  - "What does the dividend/divisor/quotient represent in the problem?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I drew a model that shows division.
The whole number is the dividend and what I split into groups.
The unit fraction is the divisor because that is what I am dividing by.
The answer is how many total parts there are.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The model represents the division problem.
The dividend is the whole number because that is what is being divided into equal groups.
The divisor is the unit fraction because that is the size of each group.
The quotient represents the number of parts in all of the wholes.

Sharing Parts

Representing and Solving Division of a Unit Fraction by a Whole Number

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal:** Explain how a representation illustrates a given division story problem.
- **Listen** and **Speak** using the language from this activity, such as *dividend, divisor, expression, quotient, unit fraction.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*dividend*	*divisor*	*part*	*sum*	*total*
Español	*dividendo*	*divisor*	*parte*	*suma*	*total*

Materials

From Activity 2, Launch:

- fraction strips to $\frac{1}{12}$ (from Activity 1)

Students also need access to the following additional materials.

In this Resource:

- *Making Smaller Parts* PDF

Activity 2, Monitor

Distribute the *Making Smaller Parts* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What does your model represent?"
  - "What do you need to represent first?"
  - "What is the divisor? How many parts are you dividing into?"
  - "What are you solving for? How many total parts are there?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I started with a unit fraction and then divided each part into smaller parts.
I am solving for how many pieces there are.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

My model represents a unit fraction divided by a whole number.
I started with a unit fraction and divided it into small pieces.
I am solving for how many total parts there are.

Explore: Estimation Station

EB **Emergent Bilinguals** Use during the **Activity, Connect** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify that the value of a multiplication expression is close to a target product.
- **Listen, Speak**, and **Write** about these statements as they reflect on the Activity.

ELPS: 1.E, 2.C, 2.E, 2.F

Spanish Cognates

English	*connect*	*idea*	*mathematician*	*pattern*	*problem*
Español	*connectar*	*idea*	*matemático*	*patrón*	*problema*

Materials

Students need access to the following materials.

In this Resource:

- *Ways to be a Mathematician* PDF
- *Questions and Sentence Frames* PDF (for display)

Explore, Ways to be a Mathematician

Distribute the *Ways to be a Mathematician* PDF and display the *Questions and Sentence Frames* PDF. To promote mathematical discussion, try to pair students who speak the same primary language together.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which of the ways did you use to write multiplication expressions?"
  - "Did you take your time to think about the problem before trying to solve it? What plan did you use to write multiplication expressions?"
  - "Did you use numbers, words, or diagrams to solve the problem? Which numbers, words, or diagrams did you use to write multiplication expressions?"
  - "Can you explain why your thinking makes sense? What math language can you use to explain your thinking?"

Sample responses shown.

Pre-Production

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Encourage students to respond in their primary language first. Then encourage them to point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Invite students to share responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words or by pointing to the PDF.

Consider modeling using the sentence frames to restructure student responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in phrases or incomplete sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in simple, complete sentences.

Advanced

Encourage students to use complete sentences, as they answer the questions on the *Questions and Sentence Frames* PDF. Then to discuss their thinking with their partner, using the supports from the PDF, as needed.

Answering Andrea's Questions

Estimating and Determining Products of Multi-Digit Numbers

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify that an answer is reasonable using estimation.
- **Listen** and **Speak** using the language from this activity, such as *partial product, product*.

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*estimate*	*factor*	*product*	*round*
Español	*estimar*	*factor*	*producto*	*redondear*

Materials

Students need access to the following materials.

In this Resource:

- *Andrea's Wonderings, Part 1* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute *Andrea's Wonderings, Part 1* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Are your estimates reasonable?"
  - "What strategies did you use to help you estimate?"
  - "How did you use rounding to help you estimate?"
- "What strategy did you use to solve for the product?"
- "How does estimating help you know if your answer is reasonable?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Yes.

It is close to the product.

I rounded to estimate.

I multiplied each friendly number with the other.

It helps me check if my answer is close.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences, as they share their thinking with their partner, using the supports from the PDF, as needed.

Yes, my estimate is reasonable because the product is close to my estimate.
To help me estimate, I rounded both factors.

To solve for the product, I used the strategy of multiplying partial products.
Estimating before solving helps me determine if an answer is reasonable.

Miles of Fun

Representing Values of Expressions Involving Multi-Digit Factors

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Interpret and compare different partial products strategies for multiplying multi-digit whole numbers.
- **Listen** and **Speak** using the language from this activity, such as *factor, partial product*.

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*compare*	*estimate*	*factor*	*product*	*strategy*
Español	*comparar*	*estimar*	*factor*	*producto*	*estrategia*

Materials

Students need access to the following materials.

In this Resource:

- *Partial Products Everywhere* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Partial Products Everywhere* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Is your answer reasonable? How do you know?"
  - "Is your estimation equation reasonable?"
- "How is the strategy you and your partner used similar to the other pair's strategy? How is it different?"
  - "How did you decompose your factors when using partial products as a strategy?"
  - "How did you use partial products to solve?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Yes. They are close.
We both used partial products.
We decomposed and multiplied our factors in an area model.
They decomposed one factor and multiplied it by the other factor.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

Yes, they are both reasonable because they are close in value. Our strategies are similar because we both found partial products. Our strategies are different because we used an area model and they decomposed by place value.

Partial Products Everywhere

Determining Products Using a Partial Products Algorithm

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare 2 ways of using a partial products algorithm.
- **Listen** and **Speak** using the language from this activity, such as *algorithm, partial product, product*.

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*algorithm*	*factor*	*product*
Español	*algoritmo*	*factor*	*producto*

Materials

From Activity 2, Launch:

- *Activity 1* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Trying an Algorithm* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Trying an Algorithm* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How are the strategies similar? How are they different?"
- "Does it make sense that all the partial products are the same?"
  - "How do you know?"
- "Does it make sense that the final products are the same?"
  - "How do you know?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Decompose by place value.

Strategy A works from right to left.

Strategy B works from left to right.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The strategies are similar because they both decompose the factors by place value.
The strategies are different because Strategy B multiplies from left to right.

Multiplication Mayhem

Multi-Digit Multiplication Fluency

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how the standard algorithm can be used to attend to the place value of composed units.
- **Listen** and **Speak** using the language from this activity, such as *factor, partial product, product*.

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*algorithm*	*factor*	*product*
Español	*algoritmo*	*factor*	*producto*

Materials

Students need access to the following materials.

In this Resource:

- *The Standard Way* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the The *Standard Way* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you organize your work using the standard algorithm?"
  - "What is the first step? What is the next step?"
  - "How did you use estimation to check that your work was reasonable as you solved?
- "Is your answer reasonable?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I multiplied by place value and then added the partial products up.

My answer and estimate were close.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I organized my work by showing the multiplication of the first factor by the ones place of the second factor. Then I showed the multiplication of the first factor by the tens place of the second factor. When multiplying, I organized the composed units above each place value.
My answer was reasonable because it was close to my estimate.

3.06 Activity 1 Whose Quotient Is It Anyway?

Dividing Multi-Digit Dividends by One-Digit Divisors

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain what the dividend, divisor, and quotient represent in a story problem.
- **Listen** and **Speak** using the language from this activity, such as *dividend, divisor, partial quotients, quotient*.

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*dividend*	*divisor*	*quotient*
Español	*dividendo*	*divisor*	*cociente*

Materials

From Activity 1, Launch:

- Base-ten blocks (as needed)

Students also need access to the following additional materials.

In this Resource:

- *Towers of Guitars and Cans* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Towers of Guitars and Cans* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What does the divisor represent?"
- "What does the quotient represent?"
- "What division strategies did you solve?"
- "How was your work similar in Problem 1 and 2?"
- "How was it different?"

Repeat the above questions for Problem 2.

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The building height.
Number of guitars stacked to equal building height.
Used partial quotients and an area model.
Both are division problems.
Different ways to solve.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The divisor represents the building height.
The quotient represents the number of guitars stacked.
I solved Problem 1 by using partial quotients or an area model.
My work is similar because I solved using division.
My work is different because I used different strategies.

What Do You Think?

Dividing Three- and Four-Digit Dividends by Two-Digit Divisors

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to determine partial quotients with a two-digit divisor.
- **Listen** and **Speak** using the language from this activity, such as *dividend, divisor, partial quotients, quotient*.

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F, 3.C, 3.E, 3.F, 3.G, 4.C, 4.D, 4.F

Spanish Cognates

English	*dividend*	*divisor*	*product*	*quotient*
Español	*dividendo*	*divisor*	*producto*	*cociente*

Materials

Students need access to the following materials.

In this Resource:

- *Thinking About Thinking* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 2, Monitor

Distribute the *Thinking About Thinking* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What multiplication strategy was helpful with the divisor?"
- "Why do different partial quotients result in the same final quotient?"
- "What was your first partial quotient for this expression?"
  - "Why did you choose to use this partial quotient first?"
- "How are your partial quotients similar to your partner's partial quotients? How are they different?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I used double 10.
440 because it is the biggest partial quotient.
Got the same quotient, both multiplied by 20, both multiplied by 6.
Had different partial quotients, solved in different order.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I chose 440 as my first partial quotient because I estimated that 20 × 20 is 400, and the dividend is greater than that.
Our partial quotients are similar because we both multiplied by 20. Our partial quotients are different because our partial quotients were in a different order.
Different partial quotients have the same final quotient because you can combine them in any order.

Emptying the Water Tank

Determining 1 Partial Quotient for Each Place Value

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to solve the same problem using different partial quotients.
- **Listen** and **Speak** using the language from this activity, such as *partial quotients, quotient*.

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*dividend*	*divisor*	*product*	*quotient*
Español	*dividendo*	*divisor*	*producto*	*cociente*

Materials

Students need access to the following materials.

In this Resource:

- *Bottling Water* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Bottling Water* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What is another way that 612 ounces of water can be emptied in up to 5 crates of 18-ounce bottles?"
  - "What other partial quotients could you use to solve this problem?"
- "How is this other way similar to your first way? How is it different?"
  - "Which way do you prefer? Why?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Partial quotients of 30, 3, and 1 can be used to solve. Because 18 × 30 = 540, 18 × 3 = 54, 18 × 1 = 18 and 30 + 3 + 1 = 34. Both use partial quotients with multiples of 10 and single digits. New way uses 3 partial quotients. First way uses 4. First way is easier. The numbers I used are easier to multiply with.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

You can use the partial quotients of 30, 3, and 1 to solve this problem because 18 × 30 = 540, 18 × 3 = 54, 18 × 1 = 18 and 30 + 3 + 1 = 34. They are similar because both have partial quotients with multiples of 10 and single digits. They are different because in the new way I used only 3 partial quotients and in the first way I used 4 partial quotients. I prefer the first way because I am more familiar with those strategies.

Algorithm Affinity

Dividing Multi-Digit Dividends by Two-Digit Divisors Using the Standard Algorithm

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare how the partial quotients strategy and the standard algorithm are used to solve division problems with four-digit dividends and two-digit divisors.
- **Listen** and **Speak** using the language from this activity, such as *dividend, divisor, partial quotients, quotients, remainder.*

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F, 3.C, 3.E, 4.C, 4.D, 4.F

Spanish Cognates

English	*dividend*	*divisor*	*quotient*
Español	*dividendo*	*divisor*	*cociente*

Materials

Students need access to the following materials.

In this Resource:

- *Gil's Music* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Gil's Music* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How are the strategies the same? How are the strategies different?"
  - "What strategy did you use? Why?"
  - "What were the steps you used to solve?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Strategies are the same because it is the same answer.
I used partial quotients because it is easier for me. I kept going until I got to 0 and then added all my partial quotients.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The processes are the same because they result in the same quotient.
The partial quotients strategy is different because there are multiple ways to solve and the standard algorithm is specific in how to solve.
I chose to solve using partial quotients because it allows me to break it into smaller and more manageable problems.

Celery Chop
Representing Remainders

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain when a quotient might be best represented as a mixed number.
- **Listen** and **Speak** using the language from this activity, such as *mixed number, remainder.*

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*dividend*	*divisor*	*equal*	*quotient*
Español	*dividendo*	*divisor*	*igual*	*cociente*

Materials

Students need access to the following materials.

In this Resource:

- *Celery Stalk Remainders* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Celery Stalk Remainders* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How were the celery stalks equally shared?"
- "Why does it make sense to divide the remainder and have a mixed number?"
- "How many celery stalks does each family get? How do you know?"
- "When does a quotient remainder make sense?"
- "How will the quotient be represented when you divide the remainder? Why?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Rabbits sharing celery with each family, 4 stalks remainder.
Celery can be cut up and shared.
8 celery stalks and $\frac{4}{5}$ of the leftovers.
Remainders can be split, like food.
Like a mixed number.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The rabbits are sharing 44 celery stalks and there are 8 whole stalks for each family with 4 stalks remaining.
It makes sense to divide the remainder and have a mixed number because celery can be cut up and shared equally among each of the families.
Each family gets 8 wholes and $\frac{4}{5}$ of the remaining celery stalks.
A quotient remainder makes sense when the remainder is something that can be split and still have meaning, like food.
As a remainder, the quotient will be represented as a mixed number when it is divided.

It's All in the Details

Representing Multi-Step Story Problems With Equations Using a Letter Standing for the Unknown Quantity

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify why an equation matches a story problem.
- **Listen, Speak, Read**, and **Write** using the language from this activity, such as *brackets, order of operation, parentheses*.

ELPS: 1.E, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F, 3.G, 4.C, 4.D, 4.F

Spanish Cognates

English	*determine*	*justify*	*operation*	*parentheses*
Español	*determinar*	*justificar*	*operación*	*paréntesis*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for display)

Students also need access to the following additional materials.

In this Resource:

- *Which Equation?* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Which Equation?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which equation can be used to find *m*, the amount of money Clare spent on books?"
  - "How did you determine this equation?"
  - "What did you do first? Next?"
- "Which words or phrases helped you to determine which operations must be represented in the matching equation?"
  - "What numbers and operations were grouped together to match those words or phrases?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Equation C. Because it matches the story problem.
I found out how much the pens cost. I added that to the poster cost. I subtracted that answer from 56.
***Each* and *spent*. Spent meant to multiply, then add, then subtract.**
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I chose Equation C because I know that I need to first determine how much the pens cost. Then I need to add that to the poster cost. Finally, I will subtract that sum from 56.
The words or phrases that helped me determine to multiply were 5 pens for $3 each, to add were spent $12, and to subtract were spent $56 and spent the rest on books.

Uncovering the Unknown

Solving Multi-Step Story Problems With Equations Using a Letter Standing for the Unknown Quantity

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare representations to solve multi-step story problems.
- **Listen, Speak**, and **Read**, using the language from this activity, such as *brackets, order of operations, parentheses*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*parentheses*	*represent*	*solve*
Español	*paréntesis*	*representar*	*resolver*

Materials

Students need access to the following materials.

In this Resource:

- *Read, Write, Represent, Solve!* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Read, Write, Represent, Solve!* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you represent the unknown in an equation?"
- "How did you use parentheses and/or brackets to represent the story problem?"
- "How did you use the equation to solve for *m*?"
  - "What did you do first? Next?"
- "How are you and your partner's equation similar? How are they different?"
  - "Do you agree with your partner's equation? Why or why not?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

m = [(14 × 16)] + 22] − 9
I multiplied 14 × 16 in parentheses. I added 22 to the answer within the brackets.
Both used parentheses around (14 × 16).
I used brackets. They used just parentheses to write and solve their equation.
Yes. Because they got the same answer that I did.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I represented *m* as an equation with *m* = [(14 × 16)] + 22] − 9. First, I multiplied 14 × 16 in parentheses. Next, I added 224 + 22 within the brackets. Then I subtracted 246 − 9 = 237. We both used parentheses around (14 × 16). My partner did not use brackets, instead they represented and solved their equation as (14 × 16) + 22 − 9. I agree with their equation because they got the same answer that I did in my equation, 237 bottles.

Game, Set, Match!

Using Reasoning, Without Simplifying, to Compare Expressions

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe numerical expressions using properties of the 4 operations.
- **Listen, Speak, Read**, and **Write** using the language from this activity, such as *difference, expression, product, quotient, sum.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 4.C, 4.D

Spanish Cognates

English	*expression*	*interpret*	*numerical*	*represent*
Español	*expresión*	*interpretar*	*numérico*	*representar*

Materials

From Activity 1, Launch:

- pre-cut cards from the *Activity 1* PDF

Students also need access to the following additional materials.

In this Resource:

- *Interpretation Station* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Interpretation Station* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What numerical expression matched the written expression for Card ____? How do you know?"
  - "What part of the written expression was being grouped? How do you know?"
- "What strategy did you and your partner use to match the numerical and written expressions?"
  - "What other words might you look for that relate to that operation?"
- "How did your understanding of mathematical language help you interpret each card?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or charts. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Card B went with Card G; (1,542 ÷ 45) – 3
Because it means 3 minus the quotient of 1,542 and 45 using symbols.
1,542 and 45 are being grouped. It is in parentheses.
Wrote numbers and symbols above the words.
Divided by or half.
Using addition, subtraction, multiplication, or division and symbols helped me with the cards.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I matched Card B with Card G; (1,542 ÷ 45) – 3 because it represents 3 less than the quotient of 1,542 and 45 using symbols. The quotient of 1,542 and 45 is grouped because it is in parentheses.
We wrote numbers and symbols above the words in the written expression. Other words that relate to division would be divided by or half. Connecting math language to the 4 operations and grouping symbols helped me interpret each card.

Money, Money, Money!
Types of Income and Taxes

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Define income tax, payroll tax, sales tax, and property tax.
- **Listen, Speak, Read**, and **Write** using the language from this activity, such as **deduction**, **gross income**, *income*, **income tax**, **payroll tax**, **property tax**, **sales tax**.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 4.C, 4.D

Spanish Cognates

English	*deduct*	*income*	*property*
Español	*deducir*	*ingreso*	*propiedad*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for display)

Students also need access to the following additional materials.

In this Resource:

- *Where'd My Money Go?* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *Where'd My Money Go?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What type of tax is it?"
  - "What is it used for?"
  - "Where is it deducted from?"
- "How do you identify the type of tax?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Sales tax because I bought something.

Property tax because it's like a house.

Income tax because it's for everyone.

Payroll tax because they took it from my paycheck.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

It is sales tax because the price of the item I bought increased to include the tax.
Property tax because it is paid on the property I own.
Since the taxes were deducted from my gross income, it is payroll tax.
Because it will be used to fund public services, it is income tax.

Is It Balanced?
Making and Balancing a Budget

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe actions that might be taken to balance a budget when expenses exceed income.
- **Listen** and **Speak** using the language from this activity, such as **balanced budget**, **budget**, *expenses, gross income, net income*.

ELPS: 1.B, 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*deduct*	*income*
Español	*deducir*	*ingreso*

Materials

Students need access to the following materials.

In this Resource:

- *Cutting Costs* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 2, Monitor

Distribute the *Cutting Costs* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What is a balanced budget?"
- "What changes could Gil's brother make to balance his budget?"
  - "How much did he overspend?"
  - "Which expense could be reduced and by how much?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

He spent too much.

He could put less money in savings.

Put only $35 in savings.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

Gi's brother is $40 over his income for the week. To have a balanced budget, he could spend $25 on entertainment instead of $65.

3.16 Activity 2 Add It, Subtract It, Track It!

Creating Strategies to Keep Financial Records

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain the benefit of using financial records.
- **Listen** and **Speak** using the language from this activity, such as *balanced budget, deposit*, **financial records**, *withdraw*.

ELPS: 1.B, 1.E, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*deposit*	*financial*
Español	*depósito*	*financiero*

Materials

From Activity 2, Launch:

- *Activity 2* PDF (for display)

Students also need access to the following additional materials.

In this Resource:

- *Using Records!* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 2, Monitor

Distribute the *Using Records!* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What are the benefits of using a financial record?"
  - "How does it help track expenses?
  - "How does it help keep track of deposits/withdrawls?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Helps keep track of how much money Gil has.

Financial records help with budget.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

Keeping a record can be beneficial in making financial decisions, so that Gil can see where he is spending money, how much money he is making, and how much he has left to spend.

Time to Check Out!
Analyzing Payment Methods

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe advantages and disadvantages of various payment methods.
- **Listen, Speak**, and **Write** using the language from this activity, such as **check**, **credit card**, **debit card**, *deposit*, **electronic payment**, *interest, withdraw*.

ELPS: 1.B, 1.E, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*check*	*credit*	*debit*	*deposit*	*electronic*	*interest*
Español	*cheque*	*crédito*	*débito*	*depósito*	*electrónico*	*interést*

Materials

Students need access to the following materials.

In this Resource:

- *How Will You Pay?* PDF
- *Vocabulary Cards, Unit 3* PDF

Activity 1, Monitor

Distribute the *How Will You Pay?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What are the advantages of using various payment methods?"
  - "Why would you choose a different payment method?"
- "What are the disadvantages of using various payment methods?"
  - "Which other payment method would you suggest using?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Pay quickly online using an electronic payment.

Checks take a long time.

She would need to have enough money to pay for the car in her checking account to use a debt card.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

An advantage of using an electronic payment is that he was able to pay quickly and easily online.
A check might take long and be considered late and get a late fee.
A disadvantage of using a debt card to buy a new car would be that she would need to have enough money in her checking account.

4.01 Activity

Explore:
Numbers Between Numbers

Math Language Development Resources

EB **Emergent Bilinguals** Use during the **Activity, Connect** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to use place value and fraction understanding to name decimal values up to and beyond the hundredths place.
- **Listen** and **Speak** about these statements as they reflect on the Activity.

ELPS: 1.E, 2.C, 2.E, 2.F

Spanish Cognates

English	*connect*	*idea*	*mathematician*	*pattern*	*problem*
Español	*conectar*	*idea*	*matemático*	*patrón*	*problema*

Materials

Students need access to the following materials.

In this Resource:

- *Ways to be a Mathematician* PDF
- *Questions and Sentence Frames* PDF (for display)

Explore, Ways to be a Mathematician

Distribute the *Ways to be a Mathematician* PDF and display the *Questions and Sentence Frames* PDF. To promote mathematical discussion, try to pair students who speak the same primary language together.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which of the ways did you use to determine if there are always numbers between numbers?"
  - "Did you take your time to think about the problem before trying to solve it? What plan did you use to determine if there are always numbers between numbers?"
  - "Did you connect ideas or use patterns to help solve the problem? Which connections or patterns did you use?"
  - "Can you explain why your thinking makes sense? What math language can you use to explain your thinking?"

Sample responses shown.

Pre-production

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Encourage students to respond in their primary language first. Then encourage them to point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words or by pointing to the PDF.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in phrases or incomplete sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in simple, complete sentences.

Advanced

Encourage students to use complete sentences as they answer the questions on the *Questions and Sentence Frames* PDF. Then encourage them to discuss their thinking with their partner, using the supports from the PDF, as needed.

What Is One Thousandth?
Making Sense of Thousandths

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain the connections between the different ways to represent numbers to the thousandths.
- **Listen** and **Speak** using the language from this activity, such as *hundredths, tenths,* **thousandths**.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*represent*
Español	*decimal*	*representar*

Materials

From Activity 1, Launch:

- *Activity 1* PDF
- tools to create a visual display

Students also need access to the following additional materials.

In this Resource:

- *Fractions to Decimals* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Fractions to Decimals* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What do you know about $\frac{1}{10}$?"
  - "What does the numerator mean in this fraction?"
  - "What does the denominator mean in this fraction?"
- "How did you represent $\frac{1}{1,000}$?"
- "What else do you know about $\frac{1}{1,000}$?"
  - "Are there other ways to write or represent $\frac{1}{1,000}$?"

Repeat each question for $\frac{1}{100}$ and $\frac{1}{1,000}$.

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

$\frac{1}{10}$ is 1 out of 10.
Numerator is on the top.
Denominator is on the bottom.
I represented it in words.
I could also draw a picture and shade it on the grid.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

$\frac{1}{10}$ means 1 out of 10. The numerator means the number of parts you have in the fraction. The denominator represents the number of parts that the whole has been divided into.
I represented $\frac{1}{1,000}$ by writing *one thousandth*. I could also represent the fraction by drawing a picture and shading the grid.

Different Decimal Representations
Expanding Thousandths

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Use place value reasoning to justify why a variety of different words, numbers, and expressions represent the same decimal value.
- **Listen** and **Speak** using the language from this activity, such as *expanded form, expanded notation, hundredths, tenths, thousandths.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*decompose*	*expression*	*represent*
Español	*decimal*	*descomponer*	*expresión*	*representar*

Materials

From Activity 1, Launch:

- pre-cut cards from the *Activity 2* PDF

Students also need access to the following additional materials.

In this Resource:

- *Card Sort: Do They Have the Same Value?* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 2, Monitor

Distribute the *Card Sort: Do They Have the Same Value?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- Which cards represent the number shown? Why?"
  - "Which of these cards are in expanded notation? Expanded form? How do you know?"
- "Do you agree with the other pair on how they sorted? Why or why not?"
  - "Which cards do you agree with? Why?"
  - "Which cards do you disagree with? Why?"

Repeat for the cards that do not match in Problem 5.

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Cards B, C, D, E, G, J, K N, O, and Q.
They all mean the same thing.
D, F, J, N, and O grouped by place value. Q shows value of digits.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

B, C, D, E, F, J, K N, O, and Q represent the number. They all match the value of the number. D, F, J, N, and O are in Expanded Notation because they grouped each place value. Q is the only card in expanded form.
We used place value understanding to determine which cards represented the number shown.

Notation and Numerals

Representing Decimals in Expanded Form, Expanded Notation, and With Numerals

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how expanded form and expanded notation represent the same number.
- **Listen** and **Speak** using the language from this activity, such as *expanded form, expanded notation, standard form.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*expression*	*represent*
Español	*decimal*	*expresión*	*representar*

Materials

From Activity 1, Launch:

- *Activity 1* PDF

Students also need access to the following additional materials.

In this Resource:

- *Expanding Decimals* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Expanding Decimals* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you represent the amount shown in standard form? In expanded notation?"
  - "What strategy did you use to represent a new way?"
- "What is the same about each of these representations?" Different?

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

**I put together the parts to get 2,040.56.
I showed the amount of each place value.
They all show the same number but in a different way.
Standard form shows just the digits in a number. Expanded form shows the value of the digits. Expanded notation shows the number of each place value.**

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

**I represented it in standard form by putting together each place value to get 2,040.56. I represented it in expanded notation by showing the amount of each place value.
Standard form is different because it shows the place value position of each digit. Expanded form shows the value of each digit other than 0. Expanded notation shows the amount of each place value.**

The Claw
Locating Decimals on Number Lines

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain the placement of decimals on a number line.
- **Listen** and **Speak** using the language from this activity, such as *hundredths, tenths, thousandths.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*represent*
Español	*decimal*	*representar*

Materials

Students need access to the following materials.

In this Resource:

- *Bear Down* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 2, Monitor

Distribute the *Bear Down* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Do you agree with Diego?"
  - "Why or why not?"
  - "Could Diego represent 0.618 on his number line? How do you know?"
- "Do you agree with Clare?"
  - "Why or why not?"
  - "Could Clare represent 0.618 on her number line? How do you know?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Yes, because the number is between 0.6 and 0.7.
Label Diego's second and third tick marks as 0.61 and 0.62 and put it between them.
Yes, because the number is between 0.61 and 0.62.
Count 8 tick marks away from 0.61 and place it there.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I agree with Diego because the number 0.618 is between 0.6 and 0.7.
Diego can represent 0.618 on his number line by locating it between the second and third tick marks.
I agree with Clare because the number 0.618 is between 0.61 and 0.62.
Clare can represent 0.618 on her number line by placing it 2 tick marks away from 0.62.

4.06 Activity 1 Selling Collectibles
Comparing Decimals to the Thousandths

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain when a value is greater than or less than another value using place value reasoning.
- **Listen** and **Speak** using the language from this activity, such as *hundredths*, **inequality**, *tenths, thousandths*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*compare*	*decimal*	*equivalent*	*strategy*
Español	*comparar*	*decimal*	*equivalente*	*estrategia*

Materials

Students need access to the following materials.

In this Resource:

- *Collectible Miniatures* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Collectible Miniatures* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you compare the weights in Problems 1–4?"
  - "What strategy did you and your partner use to show this comparison?"
  - "What strategy did the other pair use?"
- "How were your strategies similar? Different?"
  - "Which problems showed an inequality?
  - "Which problem did not show an inequality? Why?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I used a number line to compare.
We compared using place value.
We are different because we wrote them in a different order.
1, 2, and 4 have one number bigger than the other.
3 has both numbers that are equivalent.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I compared the weights by using a number line.
They were similar because we compared using place value.
Our comparison statements were written in a different order.
Problems 1, 2, and 4 showed an inequality because one number was less than or greater than the other number.
In Problem 3, there was no inequality because both numbers were equivalent.

4.07 Activity 2 — Which Way Down the Mountain?
Rounding Decimals to the Hundredths

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to round decimals with or without number lines.
- **Listen** and **Speak** using the language from this activity, such as *rounding*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*estimate*	*rounding*	*strategy*
Español	*estimatar*	*redondeo*	*estrategia*

Materials

From Activity 2, Launch:

- *Activity 2* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Rounding Decimals* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 2, Monitor

Distribute the *Rounding Decimals* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What strategy could you use to round 6.382 to any place value?"
  - "How did you round to the nearest hundredth? Nearest tenth? Nearest whole?"
- "How could you round any number to any place value?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I can use a number line to see which number it is closer to. I can use place value to see if I need to round up or down. Check which 2 options the number could be rounded to, and then choose the closest number.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I would round 6.382 to the nearest hundredth by drawing a number line with values between 6.38 and 6.39 and determine which it is closer to. I would round 6.382 to the nearest tenth by looking at the 8 in the hundredths place and round up to 6.4. My strategy for rounding to any place value is to use place value to help me determine which value it is closer to.

Rounding Races

Rounding Decimals to the Hundredths in Context

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain why the rounded number can represent more than 1 possible exact number.
- **Listen** and **Speak** using the language from this activity, such as *rounding*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*digit*	*represent*	*round*
Español	*decimal*	*dígito*	*representar*	*redondear*

Materials

From Activity 1, Launch:

- *Activity 1* PDF
- *Rounding Process* chart (from Lesson 7, for display)

Students also need access to the following additional materials.

In this Resource:

- *Round the Times* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Round the Times* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you round the number using place value?"
  - "To the nearest whole? Nearest tenth? Nearest hundredth?"
  - "What do you notice about these rounded values? Why?"
- "How is it possible for more than 1 value to round to the same number?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The digit in the tenths place was more than 5. I rounded up in the ones place.
The hundredths place was more than 5. The tenths place was 9. I rounded the number in the ones place.
Two numbers rounded to 38. The digits in the tenths and hundredths place were greater than 5.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I rounded up to the nearest whole number when the digit in the tenths place was greater than 5. I rounded up to the nearest tenth when the number in the hundredths place was greater than 5. When the tenths place was 9, the whole number rounded up.
Two numbers rounded to the same whole number because the digits in the tenths and hundredths places were greater than 5. You can round up or down to the same number.

4.09 Activity 1 Market Day Preparation

Adding and Subtracting Decimals in Real-World Problems

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare different strategies used to solve a multi-step problem involving addition and subtraction of decimals to the hundredths.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *difference, sum*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*compare*	*determine*	*different*	*similar*	*sum*	*total*
Español	*comparar*	*determinar*	*diferente*	*similar*	*suma*	*total*

Materials

Students need access to the following materials.

In this Resource:

- *Materials in Order* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Materials in Order* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What do you notice about Miguel's work? About Fiona's work?"
  - "What is similar about their strategies? Different?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Miguel used subtraction.
Fiona added and then subtracted.
Both of them subtracted and came up with the same answer.
Fiona added the scarves first, and Miguel did not.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I noticed that Miguel only subtracted and Fiona added and subtracted.
They both used subtraction in their work, and their answers are the same. Their strategies are different because Fiona added the scarf lengths before subtracting, while Miguel subtracted both scarf amounts from his total.

Exploring Decimal Multiplication

Making Sense of Decimal Multiplication

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare different strategies for multiplying a whole number and a decimal to the tenths or hundredths.
- **Listen** and **Speak** using the language from this activity, such as *decimal*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*different*	*fraction*	*multiply*	*similar*
Español	*decimal*	*diferente*	*fracción*	*multiplicar*	*similar*

Materials

From Activity 1, Launch:

- base-ten blocks
- *Hundredths Model* PDF

Students also need access to the following additional materials.

In this Resource:

- *Multiplying Whole Numbers and Decimals* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Multiplying Whole Numbers and Decimals* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What strategy did you use to solve this problem?"
  - "What strategy did your partner use?"
  - "How are both strategies similar? Different?"
- "Did you use the same strategy for different problems? Why or why not?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I drew a model. They used repeated addition.
We got the same answer.
It is the same because it is putting together the groups. It is different because some use models and some don't.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I used a hundredths model. My partner used repeated addition to solve. The other pair used base ten blocks. We all got the same answer.
The strategies are similar because it shows equal groups combined to determine the answer. The strategies are different because we used different ways to show how to solve the problems.

Comic Book Advertisements

Multiplying Whole Numbers and Decimals Less Than or Greater Than 1

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare different strategies used to multiply a whole number and a decimal to the hundredths place.
- **Listen** and **Speak** using the language from this activity, such as *Associative Property of Multiplication, decompose, Distributive Property, factor, product*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decompose*	*decimal*	*fraction*	*strategy*
Español	*descomponer*	*decimal*	*fracción*	*estrategia*

Materials

From Activity 2, Launch:

- base-ten blocks
- *Hundredths Grid* PDF

Students also need access to the following additional materials.

In this Resource:

- *Extra-Large Advertisements* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 2, Monitor

Distribute the *Extra-Large Advertisements* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you solve Problem 5?"
  - "What strategy did you use?"
  - "How are your and your partner's strategies similar to others' strategies? Different?"
- "Did anyone use the Distributive Property as a strategy? How did they do so?"
- "Did anyone use the Associative Property of Multiplication as a strategy? How did they do so?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I used an area model and multiplied the factors.
Both of us used an area model. They multiplied by fractions.
They multiplied each part of 5.02 by 7.
They multiplied 502 by 7 and then multiplied 0.01.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I used an area model by decomposing 5.02 into 5 ones and 2 hundredths. Then I multiplied each part by 7 and added the partial products to get 35.14 square inches.
We all decomposed 5 ones and 2 hundredths 5 ones and 2 hundredths. We used an area model, and they multiplied 7 by fractions.

4.12 Activity 2 Model Multiplication

Representing Multiplication of Decimals With Pictorial Models

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how representations can be used to identify the product of a whole number and a decimal to the hundredths.
- **Listen**, **Speak**, and **Read** using the language from this activity, such as *factor, product*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*decimal*	*determine*	*factor*	*multiply*	*product*
Español	*decimal*	*determinar*	*factor*	*multiplicar*	*producto*

Materials

From Activity 2, Launch:

- colored pencils

Students also need access to the following additional materials.

In this Resource:

- *Finding Factors, Finding Products* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 2, Monitor

Distribute the *Finding Factors, Finding Products* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you determine the product?"
- "Where do you see each factor on the hundredths model?"
  - "How did you represent each factor?"
- "What is represented by the overlap? Why?"
- "What do you notice about the product?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I looked at the overlap on the model.
I shaded 1 factor going across the top and the other going down.
30 of 100 squares are shaded in the overlap.
The product is smaller than the factors.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I found the product by finding the part of the model where the shading is darkest.
I see 0.60 on the left and 0.5 across the top. The product is where they overlap.
I notice that the product is smaller than the factors because you are dividing one of the factors into smaller pieces.

Decimals, Models, and Decompositions

Representing Multiplication of Decimals With Area Models

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to reason about the placement of the decimal point when multiplying 2 decimals.
- **Listen** and **Speak** using the language from this activity, such as *area model, Distributive Property, product*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*estimate*	*factor*	*multiply*	*product*	*strategy*
Español	*decimal*	*estimar*	*factor*	*multiplicar*	*producto*	*estrategia*

Materials

Students need access to the following materials.

In this Resource:

- *Decimal Products* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 2, Monitor

Distribute the *Decimal Products* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How is your strategy for finding the products in challenge similar to your partner's strategies? Different?"
  - "What strategy did you use?"
  - "What strategy did your partner use?"
- "Will multiplying with whole numbers as a strategy to determine the value of a multiplication expression with 2 decimals always work? Why?"
- "How could you determine the location of the decimal point when multiplying any 2 decimals?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Multiply using an area model.
My partner used the Distributive Property to find the product.
Multiplying whole number digits is the same as multiplying the digits of decimals.
Use place value to find the size to place the decimal point.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I multiplied the expression as whole numbers. Then I placed the decimal point. My partner decomposed the decimal factors in an area model. This strategy will always work because multiplying digits as whole numbers is the same as multiplying digits of decimals.
You can use the place value to reason about the size of the product when placing the decimal point.

4.14 Activity 2 Breaking It Down!

Representing Decimal Division With Hundredths Models

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how decomposing values can be an effective strategy when dividing decimals by whole numbers.
- **Listen** and **Speak** using the language from this activity, such as *decompose, equivalent*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decompose*	*decimal*	*divide*	*equivalent*
Español	*descomponer*	*decimal*	*dividir*	*equivalente*

Materials

From Activity 2, Launch:

- base-ten blocks

Students also need access to the following additional materials.

In this Resource:

- *Painting Miniatures* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 2, Monitor

Distribute the *Painting Miniatures* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "In Problem 7, how did you decompose the dividend to make an equivalent value? How did this help you solve?"
  - "What did you do first? What did you do next?"
  - "How did your partner decompose the dividend to make an equivalent value?"
- "How can making equivalent values by decomposing help you solve division problems?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I decomposed 7 tenths into 5 tenths and 20 hundredths. I divided 5 tenths by 5. I divided 25 hundredths by 5. I got 15 hundredths.
They divided 75 by 5 using whole numbers.
It helps me to divide easier.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

First, I decomposed 0.7 into 5 tenths and 20 hundredths. Next, I divided 5 tenths by 5 groups and 25 hundredths by 5 groups to get 1 tenth and 5 hundredths. My partner thought of 0.75 as the whole number 75 and divided it by 5.
Making equivalent values by decomposing helped me make equal-sized groups so that I could divide easier.

4.15 Activity 1 Multiple Ways
Representing Division of Decimals With Area Models

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how the relationship between multiplication and division can be used to solve for quotients of decimals and whole numbers.
- **Listen** and **Speak** using the language from this activity, such as *factor*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*decompose*	*divide*	*factor*	*multiply*
Español	*decimal*	*descomponer*	*dividir*	*factor*	*multiplicar*

Materials

Students need access to the following materials.

In this Resource:

- *Fill in the Blanks* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Fill in the Blanks* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you use the area model to solve this problem?"
  - "Where do you see multiplication in this model?"
  - "Where do you see division in this model?"
- "How did you determine the unknown in the area model?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I used multiplication.
A number times 3 equals 0.9. A number times 3 equals 0.06.
I added up the numbers I found.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I see multiplication when I think about 3 groups of what number could equal 0.9, and 3 groups of what number could equal 0.06. I see division when I think about 0.9 divided by 3 equally and 0.06 divided by 3 equally.
I found the unknown in the area model by combining the partial quotients that I found when I divided each part of the decomposed dividend by the divisor.

4.16 Use What You Know

Activity 1

Using Whole Number Division to Divide Decimals

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how estimating can be a helpful strategy to determine the reasonableness of quotients for decimals divided by whole numbers.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *estimate*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*decimal*	*determine*	*divide*	*estimate*
Español	*decimal*	*determinar*	*dividir*	*estimar*

Materials

Students need access to the following materials.

In this Resource:

- *Making Connections* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Making Connections* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How can you use your responses to Problems 1 and 3 to help you determine the quotient 32.8 ÷ 4?"
  - "How could you determine where to place the decimal point?"
  - "Was your estimate reasonable in Problem 1? Why or why not?"
- "How could you solve problems involving decimals divided by whole numbers?"
  - "What steps would you use in your process?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

328 divided by 4 is 82. That means 32 and 8 tenths divided by 4 is 8.2.
The decimal point goes between 8 and 4 because my estimate to Problem 1 was 8. I know that 32 divided by 4 is 8.
Estimate first. Divide as whole numbers next.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I can use my answer from Problem 3 as my answer to 32.8 ÷ 4 because 328 ÷ 4 = 82 and 32.8 ÷ 4 is 8 and 2 tenths.
My estimate was reasonable because I know 32 ÷ 4 = 8.
First, estimate the quotient and then divide as whole number.

Dividing Decimals the Standard Way

Dividing Decimals Using the Standard Algorithm

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify the placement of the decimal point within a quotient when using the standard algorithm.
- **Listen** and **Speak** using the language from this activity, such as *algorithm, decimal.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*decimal*	*digit*	*divide*	*estimate*	*quotient*
Español	*decimal*	*dígito*	*dividir*	*estimar*	*cociente*

Materials

From Activity 1, Launch:

- graph paper

Students also need access to the following additional materials.

In this Resource:

- *Magic Decimals* PDF
- *Vocabulary Cards, Unit 4* PDF

Activity 1, Monitor

Distribute the *Magic Decimals* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you solve for the quotient using the standard algorithm?"
  - "What were your steps when dividing?"
  - "Was your estimate reasonable? How do you know?"
- "Where do you think the decimal point should be placed in your quotient? Why?"
  - "Will this always be true? How do you know?"

Sample responses shown.

Pre-production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I divided using multiplication and subtraction in my steps.
It was close to the quotient.
I think it should be right above the point in the dividend.
Yes. Because you are dividing by a whole number.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I solved for the quotient using the standard algorithm by dividing the digits in the dividend by the divisor. My estimate was reasonable because the quotient and estimate were close. The decimal point should be placed directly above the decimal point in the dividend. This will always be true if you divide the decimal by a whole number.

5.01 Activity
Explore:
Relationships Between Units

EB **Emergent Bilinguals** Use during the **Activity, Connect** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain the relationship between different units of measurement.
- **Listen** and **Speak** about these statements as they reflect on the Activity.

ELPS: 1.E, 2.C, 2.E, 2.F

Spanish Cognates

English	*connect*	*idea*	*mathematician*	*pattern*	*problem*
Español	*conectar*	*idea*	*matemático*	*patrón*	*problema*

Materials

Students need access to the following materials.

In this Resource:

- *Ways to be a Mathematician* PDF
- *Questions and Sentence Frames* PDF (for display)

Explore, Ways to be a Mathematician

Distribute the *Ways to be a Mathematician* PDF and display the *Questions and Sentence Frames* PDF. To promote mathematical discussion, try to pair students who speak the same primary language together.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which of the ways did you use to answer questions about Jacob and his sister's measurement system?"
  - "Did you take your time to think about the problem before trying to solve it? What plan did you use to answer questions about Jacob and his sister's measurement system?"
  - "Did you work carefully and share your ideas clearly? Which new mathematical words did you use or learn today?"
  - "Did you connect ideas or use patterns to help solve the problem? Which connections or patterns did you use?"

Sample responses shown.

Pre-Production

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Encourage students to respond in their primary language first. Then encourage them to point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words or by pointing to the PDF.

Consider modeling using the sentence frames to restructure student responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in phrases or incomplete sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in simple, complete sentences.

Advanced

Encourage students to use complete sentences as they answer the questions on the *Questions and Sentence Frames* PDF. Then encourage them to discuss their thinking with their partner, using the supports from the PDF, as needed.

Traveling Butterflies
Converting Metric Lengths

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain the relationship between the relative size of a measurement and the quantity of the measurement when converting units.
- **Listen** and **Speak** using the language from this activity, such as *centimeter, kilometer, meter, millimeter.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*convert*	*divide*	*meter*	*millimeter*	*multiply*
Español	*convertir*	*dividir*	*metro*	*milímetro*	*multiplicar*

Materials

From Activity 2, Launch:

- *Measurement Conversions* PDF

Students also need access to the following additional materials.

In this Resource:

- *MIllions of Millimeters* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 2, Monitor

Distribute the *Millions of MIllimeters* PDF. Use this resource to support students as they complete the task during the Monitor.

Consider asking (scaffolded questions are included under each question, as needed):

- "What distance did the butterflies travel in centimeters? How do you know?"
  - "How do you convert meters to centimeters?"
  - "How do you convert millimeters to centimeters?"
- "What did you notice when you converted from a smaller unit to a larger unit of measure? From a larger unit to a smaller unit?"
  - "What operation did you use to convert meters to centimeters? Why?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

840,000 centimeters. 10 millimeters is the same as 1 centimeter.
8,400,000 ÷ 10 = 840,000
I use fewer centimeters than millimeters.
I divided.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The butterflies travelled 840,000 centimeters because there are 10 millimeters in 1 centimeter, and 8,400,000 ÷ 10 = 840,000.
I divided to convert a smaller unit to a larger unit.

MASSive Measurements

Converting Between Metric Units of Mass

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare methods for converting different metric units of mass.
- **Listen** and **Speak** using the language from this activity, such as *gram, kilogram, mass, milligram*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*convert*	*divide*	*gram*	*milligram*	*multiply*
Español	*convertir*	*dividir*	*gramo*	*miligramo*	*multiplicar*

Materials

From Activity 1, Launch:

- *Measurement Conversions* PDF

Students also need access to the following additional materials.

In this Resource:

- *Measure and See* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Measure and See* PDF. Use this resource to support students as they complete the task during the Monitor.

Consider asking (scaffolded questions are included under each question, as needed):

- "How can you convert grams to milligrams?"
  - "What operation would you use?"
- "How can you convert milligrams to grams?"
  - "What operation would you use?"
- "How is converting grams to milligrams similar to converting milligrams to grams? Different?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Multiply by 1,000 to go from grams to milligrams.
Multiply by $\frac{1}{1,000}$ or divide by 1,000 to go from milligrams to grams.
Divide to go from milligrams to grams.
Multiply to go from grams to milligrams.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I can multiply the number of grams by 1,000 to convert to milligrams.
I can divide by 1,000 to convert milligrams to grams.
They are different because you multiply by 1,000 to convert grams to milligrams and divide by 1,000 to convert milligrams to grams.

Butterfly Feeders
Solving Metric Liquid Volume Problems

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare strategies to solve multi-step problems involving metric conversions.
- **Listen** and **Speak** using the language from this activity, such as *liter, milliliter.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*divide*	*liter*	*milliliter*	*multiply*	*subtract*
Español	*dividir*	*litro*	*mililitro*	*multiplicar*	*sustraer*

Materials

From Activity 1, Launch:

- *Measurement Conversions* PDF (from Lesson 2)

Students also need access to the following additional materials.

In this Resource:

- *How Much Nectar?* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *How Much Nectar?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you solve the problem?"
- "What is similar about your strategy and your partner's strategy? Different?"
  - "Did you and your partner both convert to the same unit?"
  - "Did you and your partner use the same operation to convert the units?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I converted to milliliters, added, then subtracted.
We both multiplied and subtracted. I converted to milliliters first. My partner converted to milliliters at the end.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

First, I converted all of the liters to milliliters. Then I added the milliliters from Feeders A, B, and C. 4,800 + 500 + 1,500 = 6,800. Then I subtracted from 9 liters, which is 9,000 milliliters.
We both converted to milliliters, but my partner converted to liters first and then converted to milliliters in the last step.

Collecting Compost

Converting Between Customary Units of Weight

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare different ways to represent customary weight measurements.
- **Listen** and **Speak** using the language from this activity, such as *ounce, pound, ton*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F,

Spanish Cognates

English	*convert*	*divide*	*multiply*
Español	*convertir*	*dividir*	*multiplicar*

Materials

From Activity 2, Launch:

- *Measurement Conversions* PDF (from Lesson 2)

Students also need access to the following additional materials.

In this Resource:

- *Tons of Compost* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 2, Monitor

Distribute the *Tons of Compost* PDF. Use this resource to support students as they complete the task during the Monitor.

Consider asking (scaffolded questions are included under each question, as needed):

- "Did the garden club reach their goal? How do you know?"
  - "Did you convert to tons or pounds?"
  - "How do you know if they had enough? How much more do they need?"
- "How did your partner solve this problem?"
  - "How are you and your partner's strategies similar? How are they different?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

No. $4\frac{1}{2}$ tons is less than 5 tons.
1 ton is 2,000 pounds.
Converted all the numbers to pounds and added them up.
Then I subtracted.
They converted all their numbers to tons. We both changed units.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The garden club did not reach their goal of 5 tons because they only collected $4\frac{1}{2}$ tons.
I converted all of the units to pounds.
Then I converted 1,000 pounds to tons.
My partner converted all their amounts to tons. We both converted between the units.

Butterfly Garden

Converting Between Customary Units of Length

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify the order of customary length measurements when ordered from shortest to longest.
- **Listen** and **Speak** using the language from this activity, such as *foot, inch,* **mile**, *yard*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*convert*	*divide*	*multiply*	*unit*	*yard*
Español	*convertir*	*dividir*	*multiplicar*	*unidad*	*yarda*

Materials

From Activity 1, Launch:

- pre-cut cards from the *Activity 1* PDF

Students also need access to the following additional materials.

In this Resource:

- *Card Sort: Customary Length* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Card Sort: Customary Length* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What was the shortest measurement? Longest?"
  - "How did you order measurements that were in different units?"
  - "Do you agree or disagree with the other pair on the arrangement of their cards?"
- "Why is the measurement on Card _____ shorter/longer than the measurement on Card _____?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

$\frac{1}{6}$ yards.
177 yards.
Convert everything to the same unit.
The measurement on Card E is longer.
$1\frac{1}{2}$ feet = 18 inches and 1,500 > 18.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

$\frac{1}{6}$ yards was the shortest, and 177 yards was the longest measurement. I used multiplication to convert all units to the smallest unit, which was inches.

Card E shows a longer measurement than Card D because $1\frac{1}{2}$ feet = 18 inches, and 1,500 inches is longer than 18 inches.

Taking Care of the Butterfly Garden

Solving Customary Liquid Volume Problems

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare different first steps used to solve a multi-step problem involving customary liquid volume.
- **Listen**, **Speak**, and **Read** using the language from this activity, such as *cup, fluid ounce, gallon, pint, quart*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*convert*	*divide*	*equal*	*gallon*	*pint*
Español	*convertir*	*dividir*	*igual*	*galón*	*pinta*

Materials

From Activity 1, Launch:

- pre-cut cards from the *Activity 1* PDF
- *Measurement Conversions* PDF (from prior lessons)

Students also need access to the following additional materials.

In this Resource:

- *Card Sort: Plant Sections* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Plant Groups* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which clue can you use first? Why?"
  - "Why might someone start with Clue ____?"
- "What was your strategy for sorting the clues?"
  - "Do you agree or disagree with your partner? Why?"
- "How can you solve a multi-step problem when you are given a lot of information?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I can use Clues 4 and 5 to find out how much water Plants A, F, and E need.
I converted to gallons.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I started with Clues 4 and 5 because I could use the information to determine how much water Plants A, F, and E need.
My strategy was to convert all of the measurements to gallons to sort the plants.
I can think about the information I have and how I will use it before solving the problem.

Spread Your Wings and Fly

Adding and Subtracting Fractions With Unequal Denominators Using Objects

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how fraction strips can be used to represent a sum or difference with unequal denominators.
- **Listen** and **Speak** using the language from this activity, such as *common denominator*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*compare*	*convert*	*diagram*	*equation*	*equivalent*	*multiply*
Español	*comparar*	*convertir*	*diagrama*	*ecuación*	*equivalente*	*multiplicar*

Materials

From Activity 1, Launch:

- pre-cut fraction strips from the *Fraction Strips to* $\frac{1}{12}$ PDF or classroom fraction strips

Students also need access to the following additional materials.

In this Resource:

- *Got Milkweed?* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Got Milkweed?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you find how many pounds of milkweed seeds the volunteers bought altogether?"
  - "How did you use your fraction strips to find the sum?"
- "How is your work similar to the other pair's? Different?"
  - "How did each of you use your fraction strips to solve the problem?'

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The common denominator is 6.
We all used 6.
They used $\frac{2}{6} + \frac{2}{6} + \frac{1}{6}$, and we used $\frac{4}{6} + \frac{1}{6}$.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I used my fraction strips to show $\frac{2}{3}$ and $\frac{1}{6}$ without a common denominator. Then I saw that $\frac{2}{3}$ was the same as $\frac{4}{6}$.
We all used 6 as the common denominator.
The other pair showed $\frac{2}{6} + \frac{2}{6} + \frac{1}{6}$, and we showed $\frac{4}{6} + \frac{1}{6}$.

Preparing for Winter With Unequal Fractions

Representing Addition and Subtraction of Related Fractions Using Pictorial Models

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how a representation shows a sum or difference of fractions with unequal denominators.
- **Listen** and **Speak** using the language from this activity, such as *common denominator*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*denominator*	*equivalent*	*fraction*	*multiply*	*sum*
Español	*denominador*	*equivalente*	*fracción*	*multiplicar*	*suma*

Materials

From Activity 1, Launch:

- pre-cut fraction strips from the *Fraction Strips to* $\frac{1}{12}$ PDF (from Lesson 8) or classroom fraction strips

Students also need access to the following additional materials.

In this Resource:

- *Migration* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Migration* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you solve this problem?"
  - " How did you use the fraction strips to represent each fraction? To find a common denominator?"
- "How did you represent your thinking on the model?"
  - "How did you represent each fraction?"
- "Why was it helpful to represent equivalent fractions?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I used fractions strips.
The $\frac{1}{4}$ strip is the same size as the $\frac{2}{8}$ strip. I added that to 3 strips of $\frac{1}{8}$ to get $\frac{5}{8}$.
I shaded $\frac{3}{8}$ first and then $\frac{2}{8}$ more to get $\frac{5}{8}$.
Both fractions have the same denominator.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences, as they share their thinking with their partner using the supports from the PDF, as needed.

I solved by finding a common denominator for $\frac{1}{4}$ and $\frac{3}{8}$.
The fraction strip for $\frac{1}{4}$ is $\frac{2}{8}$. I used 3 strips of $\frac{1}{8}$ to represent $\frac{3}{8}$.
Then I added the fraction strips $\frac{2}{8} + \frac{3}{8}$ to get the sum of $\frac{5}{8}$.
I shaded $\frac{3}{8}$ on the model and $\frac{2}{8}$ more to represent $\frac{1}{4}$. I see $\frac{2}{8}$ as $\frac{1}{4}$, and I see $\frac{1}{4} + \frac{3}{8}$ as a sum of $\frac{5}{8}$. Representing equivalent fractions was helpful so that both fractions have the same denominator.

Quique's Monarch Butterflies
Adding and Subtracting Fractions of Related and Unrelated Denominators

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify the reasonableness of sums and differences.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *factor, multiple*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*difference*	*divide*	*equivalent*	*factor*	*kilometer*	*multiple*
Español	*direrencia*	*dividir*	*equivalente*	*factor*	*kilómetro*	*múltiplo*

Materials

Students need access to the following materials.

In this Resource:

- *Flights of the Butterflies* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Flights of the Butterflies* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Will the answer to Problem 2 be greater than, less than, or equal to $\frac{8}{12}$? How do you know?"
  - "How can you find an equivalent fraction?"
- "Is your answer to Problem 2 reasonable? How do you know?"
  - "Did you add or subtract the fractions to find the answer?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

It will be less. It is the difference between $\frac{8}{12}$ and $\frac{1}{3}$.
The common denominator is 12.
It is reasonable because 1 times 4 is 4 and 4 is less than 8.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

My answer will be less than $\frac{8}{12}$. It it is the difference between $\frac{8}{12}$ and $\frac{1}{3}$. My answer is reasonable because I was solving for the difference of the two distances. I used subtraction and a model to solve for the difference.

5.11 Activity 2 All Sorts of Denominators

Determining Common Denominators Using Multiples and Factors

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify the use of different strategies for creating common denominators.
- **Listen** and **Speak** using the language from this activity, such as *common denominator, factors, multiples*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*common*	*denominator*	*equivalent*	*factor*	*multiple*
Español	*común*	*denominador*	*equivalente*	*factor*	*múltiplo*

Materials

Students need access to the following materials.

In this Resource:

- *So Many Denominators* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 2, Monitor

Distribute the *So Many Denominators* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you choose your common denominator?"
- "What do you notice about each expression?"
- "Why might it be useful to use a factor as a common denominator?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

We made a common denominator by multiplying to create multiples.
My group made different common denominators but we came up with the same answer.
Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I made a common denominator by dividing both fractions by a common factor. My group chose their common denominator by multiplying to create a common multiple.

5.12 Activity 1 What's in a Sum?

Adding Mixed Numbers With Unequal Denominators

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify the reasonableness of sums involving mixed numbers with unequal denominators.
- **Listen** and **Speak** using the language from this activity, such as *estimate, mixed number, sum*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*addition*	*calculate*	*estimate*	*multiply*	*reasonable*	*sum*
Español	*adición*	*calcular*	*estimar*	*multiplicar*	*razonable*	*suma*

Materials

Students need access to the following materials.

In this Resource:

- *Adding Mixed Numbers* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Adding Mixed Numbers* PDF. Read aloud Problem 3. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What is your estimate in Problem 1?"
- "What is your answer in Problem 2?"
  - "How did you add your whole numbers?"
  - "What common denominator did you use?"
- "How can you use your estimate to justify whether your answer in Problem 2 is reasonable?"
  - "Is your answer to Problem 2 similar to the estimate you made?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Between 13 and 14.
5 + 7 = 13. The fractions will make it more than 13.
$13\frac{7}{24}$.
The common denominator is 24.
I added whole numbers and fractions

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I estimate that the sum will be between 13 and 14. The whole numbers add to 12 and the fractions add to between 1 and 2. My answer to Problem 2 was $13\frac{7}{24}$. The common denominator was 24. I added the whole numbers and the fractions. My answer is reasonable because it is between 13 and 14 from my estimate.

Measuring Growth

Subtracting Mixed Numbers When Regrouping May Be Required

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify the reasonableness of differences involving mixed numbers with unequal denominators.
- **Listen** and **Speak** using the language from this activity, such as *difference, estimate, mixed number.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*difference*	*equivalent*	*factor*	*fraction*	*multiply*	*strategy*
Español	*diferencia*	*equivalente*	*factor*	*fracción*	*multiplicar*	*estrategia*

Materials

Students need access to the following materials.

In this Resource:

- *Before and After the Metamorphosis* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Before and After Metamorphosis* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How do you know your answer is reasonable for Problem 1? Problem 2?"
  - "How did you solve the problem?"
  - "What numbers should the answer be between?"
- "Did you use the same strategy in each problem?"
  - "What strategies did you use in Problem 1? Problem 2?"
  - "What was similar? What was different?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Yes. I knew it would be between 0 and 1.
I used a common denominator of 12. I knew my answer would be between 2 and 1.
I found common denominators. They had different common denominators.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

My answer is reasonable because it should be between 0 and 1. I created equivalent fractions using 12 as a common denominator.
I used a similar common denominator strategy in both problems. Both problems required different denominators.

Road Trip
Adding and Subtracting Mixed Numbers

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare the strategies used to determine common denominators to add and subtract fractions and mixed numbers with unequal denominators.
- **Listen**, **Speak**, and **Read** using the language from this activity, such as *common denominator, mixed number.*

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*compare*	*factor*	*multiply*	*number*
Español	*comparar*	*factor*	*multiplicar*	*numero*

Materials

Students need access to the following materials.

In this Resource:

- *The Monarch Highway* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *The Monarch Highway* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you solve Problem 1?"
  - "How did you find a common denominator for Problem 1?"
  - "How did you represent your thinking using equations?"
- "How was your strategy similar to the other pair's strategy? Different?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I found a common denominator. My answer is reasonable because it should be near $6\frac{1}{8}$. There are enough walnuts. They used a different order. We both found the same answer.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I found a common denominator and then added the mixed numbers. I compared my answer to $6\frac{1}{8}$ and there are enough walnuts.
The other pair found the same answer, but they used different common denominators.

Frequent Fliers

Representing Data With Bar Graphs and Frequency Tables

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare representations of categorical data.
- **Listen**, **Speak**, **Read**, and **Write** using the language from this activity, such as *data, frequency tables, scaled bar graphs*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*data*	*frequency*	*multiple*	*represent*	*scale*
Español	*datos*	*frecuencia*	*múltiplo*	*representar*	*escala*

Materials

From Activity 2, Launch:

- rulers or straightedges

Students also need access to the following additional materials.

In this Resource:

- *Put It on the Graph* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 2, Monitor

Distribute the *Put It on the Graph* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you create a scaled bar graph?"
- "Why did you choose the scale that you did for your bar graph? Why?"
- "How are you and your partner's bar graphs similar? Different?"
- "What 2 questions did you create to ask your partner about their bar graph?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or frequency tables and scaled bar graphs. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I made bars for each butterfly. I skip-counted by 5. 39 is the most, so 40 is the highest number on the scale. They skip-counted by 2. We both stopped at 40.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I made bars to represent each butterfly's visits. I used 5 as a scale. My highest number is 39, so I stopped the scale at 40. My partner used a scale of 2. We both stopped at 40.

Homemade Nectar

Representing Data and Solving Problems

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare representations used for solving one-step problems using data from a dot plot and stem-and-leaf plot.
- **Listen**, **Speak**, and **Read** using the language from this activity, such as *capacity, dot plot, stem-and-leaf plot*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*convert*	*digit*	*equivalent*	*factor*	*fraction*
Español	*convertir*	*dígito*	*equivalente*	*factor*	*fracción*

Materials

From Activity 2, Launch:

- rulers or straightedges

Students also need access to the following additional materials.

In this Resource:

- *Stem-and-Leaf Plot Data* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 2, Monitor

Distribute the *Stem-and-Leaf Plot Data* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What fraction of the containers have more than $1\frac{1}{2}$ liters? How do you know?"
- "How many containers are there altogether?"
- "How many containers have more than $1\frac{1}{2}$ liters?"
- "How are dot plots and stem-and-leaf plots similar? Different?"
- "How can you interpret the data to solve problems?"

Repeat the questions above for "less than $1\frac{1}{2}$ liters" in Problem 7.

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Half of the containers.
$\frac{4}{8} = \frac{1}{2}$, so I counted the numbers that were more than $1\frac{4}{8}$.
4 out of 8 = $\frac{1}{2}$
Both show the same data.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

Half of the containers have more than $1\frac{1}{2}$ liters.
$\frac{4}{8} = \frac{1}{2}$, so I counted the values that were greater than $1\frac{4}{8}$. My partner said that 8 – 4 = 4 , so 4 is half of 8. Both plots show the data points spread out.

Wings of Wonder
Problem Solving With Dot Plots

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe strategies to solve problems involving operations with mixed numbers and whole numbers.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *decompose, dot plot*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*decompose*	*data*	*divide*	*subtract*
Español	*descomponer*	*dato*	*dividir*	*sustraer*

Materials

From Activity 1, Launch:

- *Activity 1* PDF (for students using print)

Students also need access to the following additional materials.

In this Resource:

- *Making Combinations* PDF
- *Vocabulary Cards, Unit 5* PDF

Activity 1, Monitor

Distribute the *Making Combinations* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Who is correct?"
  - "What do you notice about Clare's answer? Priya's answer?"
  - "Can you create any equivalent mixed numbers that match Clare's or Priya's answer? How do you know?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing students' responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Both are correct.
Clare chose $2\frac{1}{8}$ and $2\frac{3}{8}$. Priya chose $2\frac{2}{8}$ and $2\frac{2}{8}$.
Yes. They add up to the same answer, and the answer can equal $4\frac{1}{2}$.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

Both Priya and Clare are correct because both of their answers add up to $4\frac{4}{8}$, which is equal to $4\frac{1}{2}$. Clare's answer is $2\frac{1}{8}$ and $2\frac{3}{8}$. and Priya's answer is $2\frac{2}{8}$ and $2\frac{2}{8}$. Both answers add up to $4\frac{4}{8}$, which is equal to $4\frac{1}{2}$.

6.01 Activity
Explore: Sorting Objects

Math Language Development Resources

EB **Emergent Bilinguals** Use during the **Activity, Connect** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe the rationale for sorting a set of objects.
- **Listen** and **Speak** about these statements as they reflect on the Activity.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*connect*	*idea*	*mathematician*	*problem*
Español	*conectar*	*idea*	*matemático*	*problema*

Materials

Students need access to the following materials.

In this Resource:

- *Ways to be a Mathematician* PDF
- *Questions and Sentence Frames* PDF (for display)

Explore, Ways to be a Mathematician

Distribute the *Ways to be a Mathematician* PDF and display the *Questions and Sentence Frames* PDF. To promote mathematical discussion, try to pair students who speak the same primary language together.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which of the ways did you use to organize the objects in your set?"
  - "Did you take your time to think about the problem before trying to solve it? What plan did you use to organize the objects in your set?"
  - "Did you use numbers, words, or diagrams to solve the problem? Which numbers, words, or diagrams did you use to organize the objects in your set?"
  - "Did you work carefully and share your ideas clearly? Which new mathematical words did you use or learn today?"

Sample responses shown.

Pre-Production

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Encourage students to respond in their primary language first. Then encourage them to point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Consider reading aloud each statement on the *Ways to be a Mathematician* PDF before asking the associated questions above.

Invite students to share responses to the above questions in their primary language first, using gestures. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words or by pointing to the PDF.

Consider modeling using the sentence frames to restructure student responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in phrases or incomplete sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in simple, complete sentences.

Advanced

Encourage students to use complete sentences as they answer the questions on the *Questions and Sentence Frames* PDF. Then to discuss their thinking with their partner, using the supports from the PDF, as needed.

Classifying Triangles

Using a Hierarchy to Classify Triangles

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify classifications of triangles based on their side lengths and angle size.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *acute triangle*, **equilateral triangle**, **isosceles triangle**, *obtuse triangle*, *right triangle*, **scalene triangle**.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 4.C, 4.D, 4.F

Spanish Cognates

English	*angle*	*classify*	*equilateral*	*isosceles*	*scalene*	*side*	*triangle*
Español	*ángulo*	*clasificar*	*equilátero*	*isósceles*	*escaleno*	*lado*	*triángulo*

Materials

From Activity 2, Launch:

- rulers
- *Triangle Classification* chart (for display)

Students also need access to the following additional materials.

In this Resource:

- *One Shape, Two Classifications* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 2, Monitor

Distribute the *One Shape, Two Classifications* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What do you notice about classifying triangles by side lengths and angle sizes?"
  - "What do you notice about acute triangles? Scalene triangles? Isosceles triangles?"
  - "What do you wonder about classifying triangles by their angle sizes?"
- "What do you notice about equilateral triangles and their angle size? Isosceles triangles? Scalene triangles?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The acute triangles are equilateral. The scalene triangles can be acute and right triangles. Isosceles triangles can be obtuse triangles. Can you sort by angle size? Equilateral triangles will have acute angles.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

The acute triangles are also equilateral and scalene triangles can be acute and right triangles. The isosceles triangle is an obtuse triangle. I wonder if equilateral, scalene, and isosceles triangles can be classified with any angle sizes.

Classifying Quadrilaterals

Using a Hierarchy to Classify Quadrilaterals

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify classifications of quadrilaterals based on their attributes and properties.
- **Listen** and **Speak** using the language from this activity, such as *attribute*, *parallel lines*, *perpendicular lines*, *quadrilateral*, *right angle*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*angle*	*attribute*	*classify*	*different*	*quadrilateral*
Español	*ángulo*	*atributo*	*clasificar*	*diferente*	*cuadrilátero*

Materials

From Activity 1, Launch:

- *Classifying Quadrilaterals* chart (for display)
- pre-cut cards from *Activity 1* PDF

Students also need access to the following additional materials.

In this Resource:

- *What's in a Name?* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 2, Monitor

Distribute the *What's in a Name?* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you describe the _____?"
  - "What attributes did you use to describe it?"
  - "How did your partner describe the _____?"
- "What attributes do quadrilaterals have in common?"
- "What attributes differentiate a quadrilateral from another quadrilateral?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

It has 4 sides and 4 angles. They said it has 2 sets of parallel sides and 4 right angles.
All have 4 sides and 4 angle corners.
You can tell them apart by the length of their sides or the size of their angles. Rectangles have 2 sets of parallel lines. Trapezoids have only 1 set of parallel lines.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I described the parallelogram by its sides and angles. My partner described the parallelogram as having 2 sets of parallel sides and 4 right angles. All quadrilaterals share the attributes of having 4 sides and 4 angles. A quadrilateral can be different from another quadrilateral by the specific lengths of its sides or the measures of its angles.

6.04 A Question of Shape

Activity 1

Identifying the Most Specific Name of a Quadrilateral

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe quadrilaterals using their most specific names.
- **Listen** and **Speak** using the language from this activity, such as *parallelogram*, *quadrilateral*, *rectangle*, *rhombus*, *square*, *trapezoid*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*angle*	*attribute*	*equal*	*parallelogram*	*quadrilateral*
Español	*ángulo*	*atributo*	*iqual*	*paralelogramo*	*cuadrilátero*

Materials

From Activity 1, Launch:

- *Activity 1* PDF
- *Classifying Quadrilaterals* chart (from Lesson 3, for display)

Students also need access to the following additional materials.

In this Resource:

- *Mystery Shape* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 1, Monitor

Distribute the *Mystery Shape* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Is the shape a parallelogram? Why or why not?"
  - "Could it be a trapezoid? How do you know?"
- "What is your partner's mystery shape? How do you know?"
- "What are shape names that could be used to name this mystery shape?"
  - "Is this shape also a rectangle? How do you know?"
  - "How is this shape also a rhombus?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Yes. 2 sets of parallel sides. Square. 2 sets of parallel sides, 4 right angles, and 4 equal side lengths, Quadrilateral, parallelogram, rectangle, or rhombus. Yes. 4 right angles, opposite sides equal, and 2 sets of parallel sides.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

It is a parallelogram because it has 2 sets of parallel sides. It could not be a trapezoid because a trapezoid has 1 set of parallel sides. It is a square because it has 2 sets of parallel sides, 4 equal sides, and 4 right angles. Some other names are quadrilateral, parallelogram, rhombus, and rectangle.

Classifying Shapes in Graphic Organizers

Using Graphic Organizers to Classify Triangles and Quadrilaterals

EB **Emergent Bilinguals** Use during the **Activity 1**, Monitor step to provide more support for your students as they:

- Work toward the **Language Goal**: Justify classifications of quadrilaterals and triangles based on their attributes and properties.
- **Listen** and **Speak** using the language from this activity, such as *acute triangle*, *equilateral triangle*, *isosceles triangle*, *obtuse triangle*, *parallelogram*, *quadrilateral*, *rectangle*, *rhombus*, *right angle*, *scalene triangle*, *square*, *trapezoid*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*angle*	*attribute*	*category*	*classify*	*equal*
Español	*ángulo*	*atributo*	*categoría*	*clasificar*	*igual*

Materials

From Activity 1, Launch:

- *Triangle Classification* chart (from Lesson 2, for display)

Students also need access to the following additional materials.

In this Resource:

- *Classifying Triangles* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 1, Monitor

Distribute the *Classifying Triangles* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you classify each triangle on the organizer?"
  - "What do you notice about their side lengths?"
- "Why is the equilateral triangle a subcategory?"
  - "Why is the scalene triangle its own category?"
- "How would you classify these triangles by their angles?"
  - "Which attributes could be changed to classify the scalene triangle in other ways?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

By their side lengths.
An equilateral triangle has at least 2 equal-length sides.
A scalene triangle does not have at least 2 equal-length sides.
All are acute triangles.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I classified them by their side lengths. The equilateral triangle has at least 2 equal-length sides. The triangles can also be classified as acute triangles. To classify the scalene triangle differently, you could change its angle measures as a right scalene or an obtuse scalene.

Creating a Coordinate System

Using the Coordinate Grid to Locate Points

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe the attributes of the coordinate grid.
- **Listen**, **Speak**, and **Read** using the language from this activity, such as **axis (axes)**, **coordinate**, **coordinate grid**, *intersecting lines*, **origin**, *parallel lines*, *perpendicular lines*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F, 3.C, 3.F

Spanish Cognates

English	*coordinate*	*description*	*point*
Español	*coordenada*	*descripción*	*punto*

Materials

Students need access to the following materials.

In this Resource:

- *Locating Stars* PDF
- *Vocabulary Cards, Unit 6* PDF

Classroom Materials:

- colored pencils

Activity 2, Monitor

Distribute the *Locating Stars* PDF and colored pencils. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you interpret the description of _____ units right? _____ units up?"
  - "Where did you start first? Next?"
  - "What coordinate did you plot for star _____?"
- "How did you plot star T?"
  - "What would you do first? Next?"
  - "What does the description of the coordinates of star T tell you?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I moved my finger to the right 6 and up 6. (6, 6)
Over 1 and up 10 from 0.
1 tells you it is 1 unit from 0 to the right, and 10 tells you it is 10 units up from 0.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

First, I moved 6 units to the right with my finger from the origin, (0, 0). Next, I moved 6 units up with the same finger. I plotted the coordinate (6, 6) for star Q.
I plotted star T by going over 1 unit to the right and 10 units up from the origin. The description of the coordinates (1, 10) means that 1 is the distance from 0 along the horizontal axis and 10 is the distance from 0 along the vertical axis.

Bullseye!
Points on the Coordinate Grid

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain the relationship between an ordered pair and the location of a point on the coordinate grid.
- **Listen** and **Speak** using the language from this activity, such as *axis (axes)*, *coordinate*, *coordinate grid*, ***ordered pair***, *origin*, ***x-coordinate***, ***y-coordinate***.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*coordinate*	*point*
Español	*coordenada*	*punto*

Materials

Students need access to the following materials.

In this Resource:

- *What's the Point?* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 1, Monitor

Distribute the *What's the Point?* PDF. Use this resource to support students as they complete the task during the Monitor.

Consider asking (scaffolded questions are included under each question, as needed):

- "Can you get a score of 400? Why or why not?"
  - "What will each location of a point represent?"
  - "What will the first coordinate tell you in the ordered pair? Second coordinate in the ordered pair?"
- "How can you determine the ordered pairs of the 4 darts shown?"
  - "Where did you start first? Next?"
  - "What are the *x*- and *y*-coordinates for the first ordered pair? Why?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Yes. 200, 100, and two 50s will get you a score of 400 points. The first coordinate will tell how far to move to the right. The second one will tell how far to move up. Start at the origin and move 5 units to the right and 7 units up. *x*-coordinate is 5 and *y*-coordinate is 7.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

Yes, by hitting a point score of 200, 100, and two of 50. The first coordinate tells how far to move along the *x*-axis. The second one tells how far to move along the *y*-axis. The first ordered pair starts from the origin and moves 5 units to the right and 7 units up.

6.08 Activity 1 Coordinating Satellite Repairs
Graphing Points on Lines

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Describe patterns when graphing points on vertical or horizontal lines.
- **Listen** and **Speak** using the language from this activity, such as *axis (axes)*, *coordinate grid*, *ordered pair*, *origin*, *parallel lines*, *perpendicular lines*, *x-coordinate*, *y-coordinate*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*coordinate*	*horizontal*	*line*	*point*	*vertical*
Español	*coordenada*	*horizontal*	*línea*	*punto*	*vertical*

Materials

Students need access to the following materials.

In this Resource:
- *Plotting Points on Lines* PDF
- *Vocabulary Cards, Unit 6* PDF

Classroom Materials:
- colored pencils

Activity 1, Monitor

Distribute the *Plotting Points on Lines* PDF and colored pencils. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What conclusions could you make about the ordered pairs on any horizontal line? On any vertical line?"
  - "Which coordinate remains the same on the vertical line? Horizontal line?"
  - "Which coordinate changes? Why?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

When points are located on a vertical line, the *x*-coordinate in each ordered pair stays the same. Its *y*-coordinate changes because the *y*-axis is a vertical line.
When points are located on a horizontal line, the *y*-coordinate in each ordered pair stays the same. Its *x*-coordinate changes because the *x*-axis is a horizontal line.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

When points are located on a vertical line, the *x*-coordinate in each ordered pair stays the same. Its *y*-coordinate changes because the *y*-axis is a vertical line.
When points are located on a horizontal line, the *y*-coordinate in each ordered pair stays the same. Its *x*-coordinate changes because the *x*-axis is a horizontal line.

6.09 Activity 2 Follow My Lead

Describing the Process for Graphing Ordered Pairs

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Compare the process for graphing ordered pairs with whole number and decimal coordinates.
- **Listen** and **Speak** using the language from this activity, such as *axis (axes)*, *coordinate grid*, *ordered pair*, *origin*, ***x*-axis**, *x-coordinate*, ***y*-axis**, *y-coordinate*.

ELPS: 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*coordinate*	*graph*	*line*
Español	*coordenada*	*gráfica*	*línea*

Materials

Students need access to the following materials.

In this Resource:

- *Graph My Ordered Pair* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 2, Monitor

Distribute the *Graph My Ordered Pair* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you describe the process for graphing the ordered pair to your partner without saying the ordered pair?"
  - "What step would you use to describe what you did first? Next?"
  - "What was the ordered pair you wanted to graph?"
- "How would the location of the point (0, 4.5) be different if the *y*-coordinate was 4 instead of 4.5?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Started at (0, 0). Then, I moved 4.5 units up. The ordered pair was (0, 4.5). The new location would be a distance of 4 units parallel to the *y*-axis.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

I started at the origin (0, 0). Then I moved a distance of 4.5 units up along the *y*-axis. The ordered pair was (0, 4.5). The new location would be a distance of 4 units parallel to the *y*-axis.

Patterns in Tables and Graphs

Recognizing Additive and Multiplicative Relationships

EB **Emergent Bilinguals** Use during the **Activity 1, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how to identify a pattern in a table or graph.
- **Listen** and **Speak** using the language from this activity, such as *input-output table*, *ordered pair(s)*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*addition*	*coordinate*	*multiplication*	*relationship*	*table*
Español	*adición*	*coordenada*	*multiplicación*	*relación*	*tabla*

Materials

From Activity 1, Launch:

- pre-cut cards from the *Activity 1* PDF

Students also need access to the following additional materials.

In this Resource:

- *Patterns in Tables* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 1, Monitor

Distribute the *Patterns in Tables* PDF. Read aloud Problems 1 and 2 to students. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "Which tables show an additive pattern?"
  - "How could you prove that the pattern is additive?"
- **Repeat** the above questions for a *multiplicative pattern*.
- "On Card H, how did you determine the pattern shown in the table?"
  - "How could you use what you know about rules to determine this relationship?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

B, D, F, and H are additive. The same number is being added to the *x*-value to get its *y*-value on each card. A, C, E, and G are multiplicative. The same number is being multiplied to the *x*-value to get its *y*-value on each card.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

B, D, F, and H show an additive pattern because the same amount is added to the *x*-values to get the *y*-values on each card. A, C, E, and G show a multiplicative pattern because the same amount is multiplied by the *x*-values to get the *y*-values. I know that the relationship on Card H is multiplicative by identifying the relationship between the *x*- and *y*-values using multiplication.

Graphing Patterns

Graphing Multiplicative and Additive Patterns

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain whether a relationship between *x*- and *y*-values is multiplicative or additive.
- **Listen** and **Speak** using the language from this activity, such as *axis (axes)*, *coordinate grid*, *x-coordinate*, *y-coordinate*.

ELPS: 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Spanish Cognates

English	*additive*	*coordinate*	*multiplicative*	*relationship*	*table*	*value*
Español	*aditivo*	*coordenada*	*multiplicativo*	*relación*	*tabla*	*valor*

Materials

Students need access to the following materials.

In this Resource:

- *What's the Relationship? (Part 2)* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 2, Monitor

Distribute the *What's the Relationship? (Part 2)* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "What is the relationship between *x* and *y* in the table in Problem _____?"
  - "What number did you use to represent *x*? How did you use it in the equation?"
- "Does the coordinate grid represent the *x*- and *y*-values in the table? How do you know?"
  - "How did you use the *x*- and *y*-values in the table on the coordinate grid?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

The pattern is to multiply by 3 to each *x*-value to get the *y*-value. I used 1 and multiplied it by 3 to get 3. 3 × 1 = 3 Yes. The horizontal axis shows the *x*-values. The vertical axis shows the *y*-values.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

In Problem 7 the pattern is to multiply by 3 to each *x*-value to get the *y*-value. I used 1 as the *x*-value and multiplied it by 3 to get 3 as the *y*-value. The coordinate grid represents the *x*-and *y*-values in the table because the horizontal axis shows the *x*-values that are listed in the table, and the vertical axis shows the *y*-values.

Graphing Real-World Problems

Graphing Ordered Pairs Generated From Real-World Problems

EB **Emergent Bilinguals** Use during the **Activity 2, Monitor** step to provide more support for your students as they:

- Work toward the **Language Goal**: Explain how data from a scatterplot can be used to make future decisions.
- **Listen**, **Speak**, and **Write** using the language from this activity, such as *coordinate grid*, *ordered pair*, *origin*, **scatterplot**, *x-coordinate*, *y-coordinate*.

ELPS: 1.B, 1.E, 4.C, 4.D, 4.F

Spanish Cognates

English	*coordinate*	*table*	*value*
Español	*coordenada*	*tabla*	*valor*

Materials

Students need access to the following materials.

In this Resource:

- *Investigating Relationships* PDF
- *Vocabulary Cards, Unit 6* PDF

Activity 2, Monitor

Distribute the *Investigating Relationships* PDF. Use this resource to support students as they complete the task during the Monitor and prepare their responses to share during the Connect.

Consider asking (scaffolded questions are included under each question, as needed):

- "How did you graph the data on the coordinate grid?"
  - "How did you use the *x*- and *y*-values to graph ordered pairs?"
  - "What does the *x*-axis represent? *y*-axis?"
- "How would you describe the trend of the data?"
  - "Are there any data points that do not follow the trend? How do you know?"
- "How could this data be useful to Mia's niece?"

Sample responses shown.

Pre-Production

Encourage students to respond to the above questions in their primary language first, then point to the PDF or use gestures.

Students may respond by gesturing.

Consider verbalizing student responses, using the sentence frames as needed, to support the connections to English.

Beginning

Invite students to share their responses to the above questions in their primary language first, using gestures or manipulatives. Then encourage them to use the supports from the PDF to share their thinking with their partner.

Students may respond in single words, short phrases, or by pointing to the word bank.

Consider modeling using the sentence frames to restructure students' responses, pointing to each word as you say it.

Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

Students may respond in short phrases or simple sentences.

Consider modeling using the sentence frames to restructure students' responses, as needed.

High Intermediate

Invite students to share their responses with their partner, using the supports from the PDF.

I plotted each *x*-value along the *x*-axis and each *y*-value along the *y*-axis. The *x*-axis shows the number of hours. The *y*-axis shows the test score. The more hours Mia's niece studies, the higher the test score. (1, 100) does not follow the trend. She could decide how many hours to study for her next test.

Students may respond using a variety of sentence types.

Advanced

Encourage students to use complete sentences as they share their thinking with their partner, using the supports from the PDF, as needed.

For each ordered pair, I plotted each *x*-value along the *x*-axis and then its *y*-value along the *y*-axis. The *x*-axis represents the number of hours and the *y*-axis represents the test score. The more hours Mia's niece studies, the higher the test score. The data point at 1 hour with a test score of 100 does not follow the trend. She could use the data to determine how many hours to study for her next test.