

Amplify Desmos Math **CALIFORNIA**

Grade 6

**Math Language
Development Resources**

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Name: _____ Date: _____ Period: _____

Words With Multiple Meanings

Draw a picture or write in words to show one or more math meanings and another meaning of the term.

Math meaning(s)

base

Another meaning

Math Habits of Mind:

Hábitos mentales matemáticos

I can slow down and first make sense of a challenging problem before trying to solve it.

Puedo ir más despacio y primero comprender un problema difícil antes de intentar resolverlo.

I can represent real-world problems using equations and inequalities and interpret their solutions within the context of the problem.

Puedo representar problemas del mundo real usando ecuaciones y desigualdades e interpretar sus soluciones dentro del contexto del problema.

I can justify my thinking and ask questions to help me understand the thinking of others.

Puedo justificar mi razonamiento y hacer preguntas que me ayuden a comprender el razonamiento de los demás.

I can apply the math that I know to solve real-world problems, make assumptions and revise my thinking as needed.

Puedo poner en práctica mis conocimientos matemáticos para resolver problemas del mundo real, formulando hipótesis y modificando mi razonamiento según sea necesario

I can select an appropriate tool to help me solve problems.

Puedo seleccionar una herramienta adecuada que me ayude a resolver problemas.

I can communicate my thinking and solutions clearly to others.

Puedo comunicar mi razonamiento y soluciones claramente a los demás

I can look for structure or patterns to help me solve problems.

Puedo buscar estructuras o patrones que me ayuden a resolver problemas.

I can look for repeated calculations and other repeated steps to make generalizations.

Puedo buscar cálculos y otros pasos repetidos para hacer generalizaciones.

Name: Date: Period:

Questions and Sentence Frames

Why did you choose this habit of mind?

Did you choose any others? Why or why not?

What part of the Activity reminded you of this habit of mind?

Can you tell me more?

I chose this habit of mind because . . .

I also chose _____ because . . .

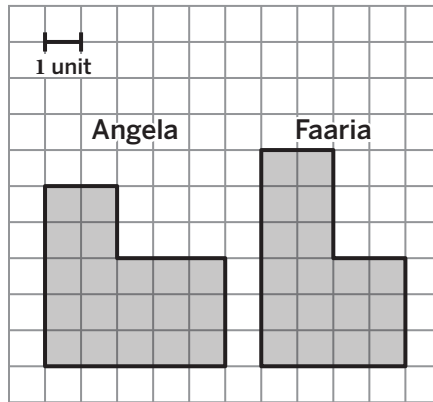
In the Activity, I . . .

Name: _____ Date: _____ Period: _____

Areas of Non-Rectangular Shapes

Whose boot shape is larger?

Grid View / Cuadrícula



Choose one sentence starter to answer the question.

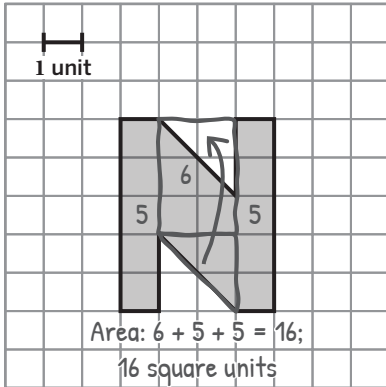
I think Angela's shape is larger, because . . .	I think Faaria's shape is larger, because . . .	I think they are the same, because . . .
Angela's shape is made of _____ squares. Faaria's is made of _____ squares.	Faaria's shape is _____ than Angela's.	both shapes have a _____ of 20 units, so they are the same size.

Word bank					
English	grid	perimeter	shape	square	taller
Español	cuadrícula	perímetro	figura	cuadrado	más alto

Name: _____ Date: _____ Period: _____

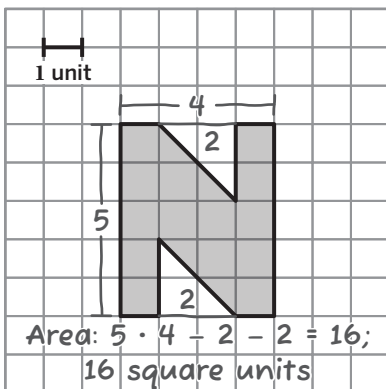
Area Strategies

Omar



To determine the area of the “N”, Omar . . .

Jayla



To determine the area of the “N”, Jayla . . .

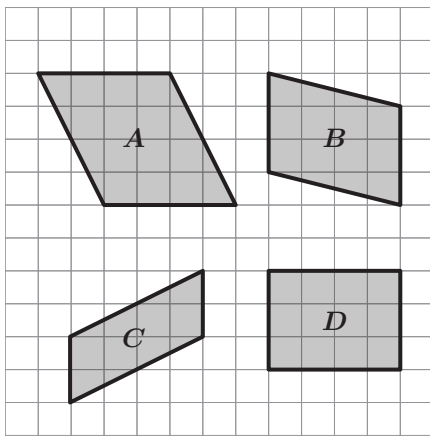
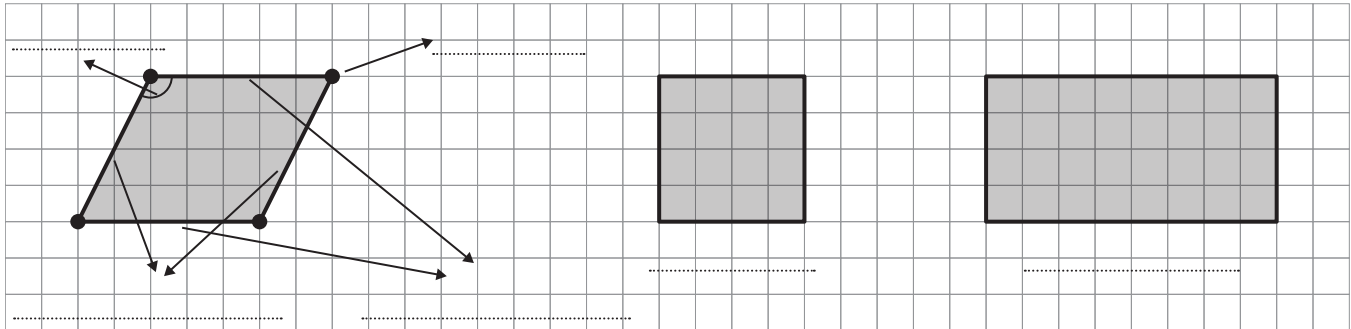
Word bank

Word bank					
English	copy	move	rectangle	take away	triangle
Español	copia	mover	rectángulo	quitar	triángulo

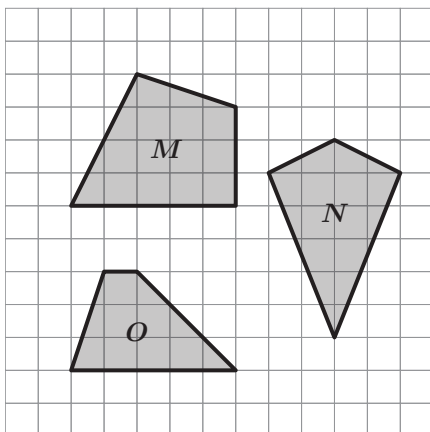
Name: _____ Date: _____ Period: _____

Parallelograms

Fill the blanks using the word bank.



I notice ...



I wonder ...

Word bank								
English	angle	opposite sides	parallel	rectangle	side	side length	square	vertex
Español	ángulo	lados opuestos	paralelo	rectángulo	lado	longitud del lado	cuadrado	vértice

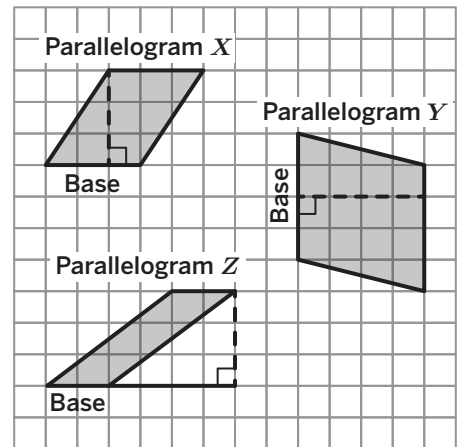
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All About That Height

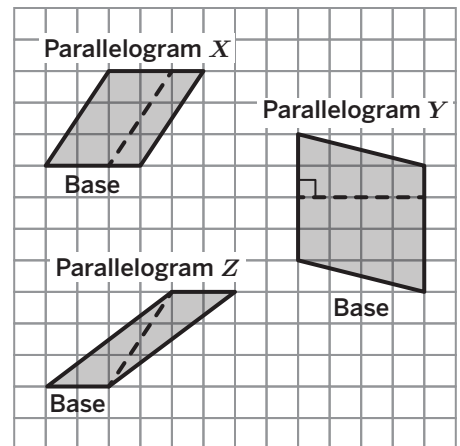
Any side of a parallelogram can be chosen as a **base**. / Cualquier lado de un paralelogramo puede elegirse como **base**.

The **height** of a parallelogram is the shortest distance between a base and its opposite side. / La **altura** de un paralelogramo es la distancia más corta entre una base y su lado opuesto.

I notice ...



I wonder ...



Word bank					
English	base	height	opposite sides	parallel	perpendicular
Español	base	altura	lados opuestos	paralelo	perpendicular

Name: Date: Period:

More Parallelograms

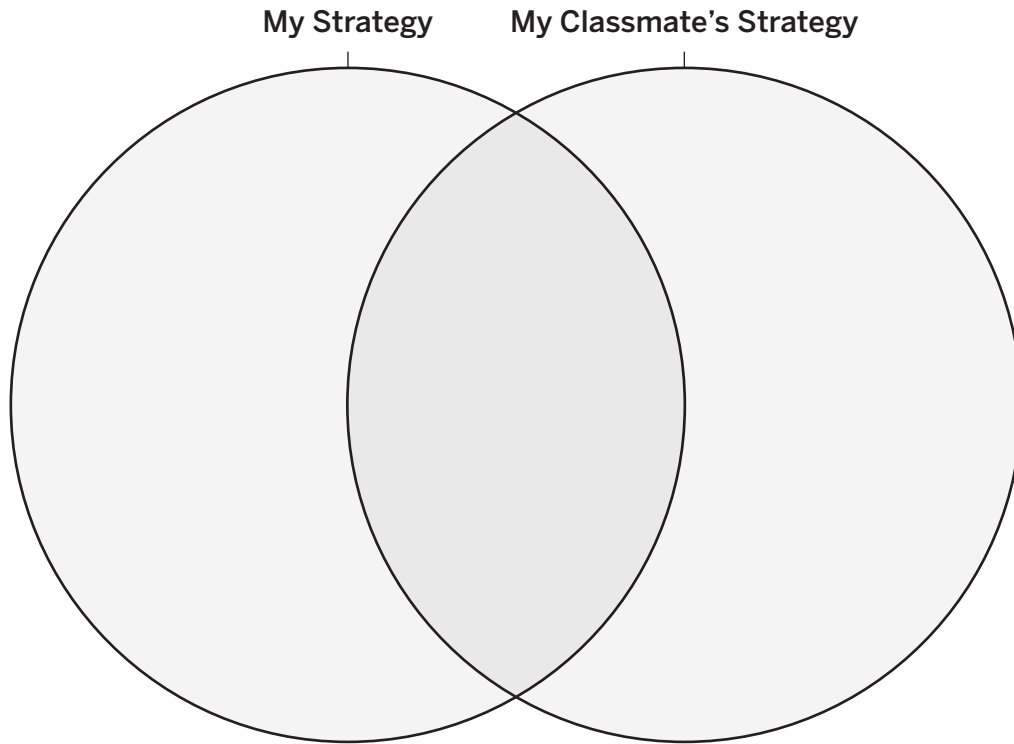
1. Decide which shadow has a greater area.
2. Show or describe your thinking in writing. Be sure to include any measurements you used to help you make your decision.
3. Be prepared to defend your thinking.

The _____ shadow has a greater area because . . .
(*morning / afternoon*)

Word bank						
English	afternoon	base	building	height	morning	shadow
Español	tarde	base	edificio	altura	mañana	sombra

Name: _____ Date: _____ Period: _____

Area Strategies



Word bank					
English	copy	decompose	enclose	identical	rearrange
Español	copia	descomponer	encerrar	idéntico	reorganizar

Name: _____ Date: _____ Period: _____

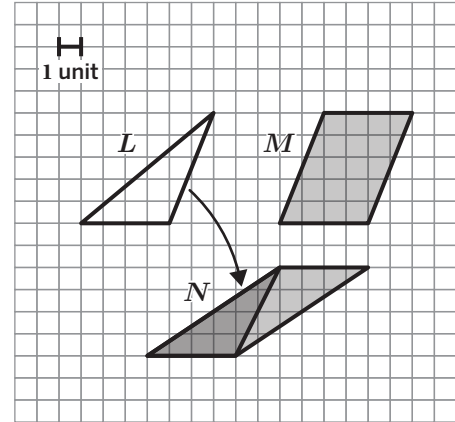
Triangles and Parallelograms

Compare triangle L and parallelogram N :

Both shapes have the same . . .

- base
- height
- area

The area of triangle L is _____ the area of the parallelogram N .

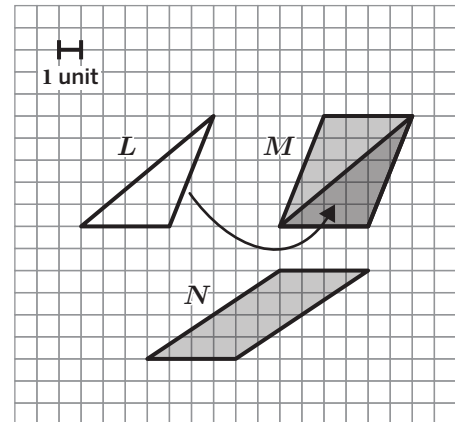


Compare triangle L and parallelogram M :

Both shapes have the same . . .

- base
- height
- area

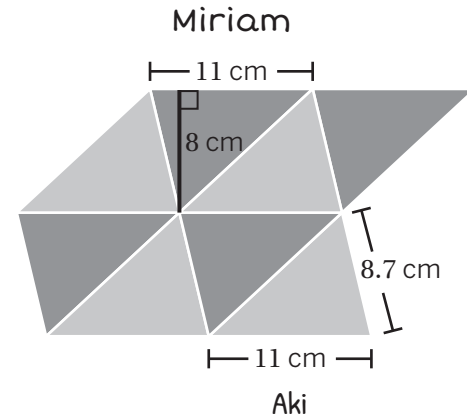
The area of triangle L is _____ the area of the parallelogram N .



Name: _____ Date: _____ Period: _____

Choose Your Measurements

1. Decide whose measurements you think will lead to the correct area.
2. Show or describe your thinking in writing.
Use pictures, diagrams, words, and/or numbers to support your thinking.
3. Be prepared to defend your position.



<p>Aki's measurements are _____ (correct / incorrect) because . . .</p>	
<p>Miriam's measurements are _____ (correct / incorrect) because . . .</p>	

Word bank				
English	base	height	perpendicular	right angle
Español	base	altura	perpendicular	ángulo recto

Name: Date: Period:

What is the Area?

Consider the work of the student you chose.

1. Identify their mistake.

_____ 's work is incorrect because . . .
(*Jasmine / Callen*)

2. Make a recommendation to help them fix their mistake.

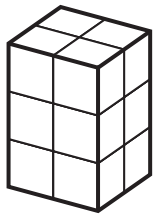
I recommend that they fix their mistake by . . .

Word bank						
English	add	divide	multiply	parallelogram	subtract	trapezoid
Español	sumar	dividir	multiplicar	paralelogramo	restar	trapecio

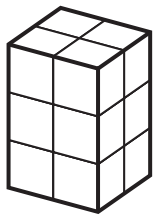
Exploring Surface Area

Definition (in your own words)

Facts



surface area



Examples

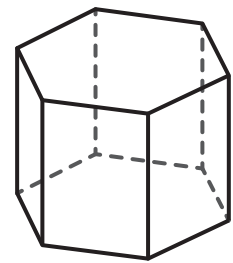
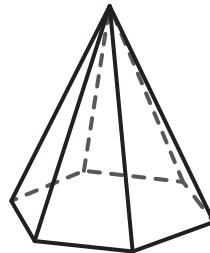
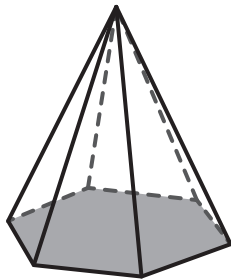
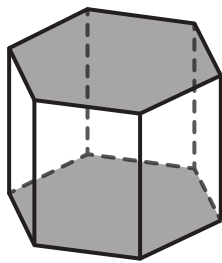
Non-examples

Prisms and Pyramids

Definition (in your own words)

Facts

base (of a pyramid
or prism)

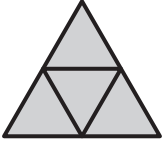
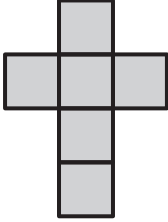
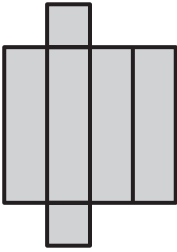


Examples

Non-examples

Name: _____ Date: _____ Period: _____

Nets and Polyhedra

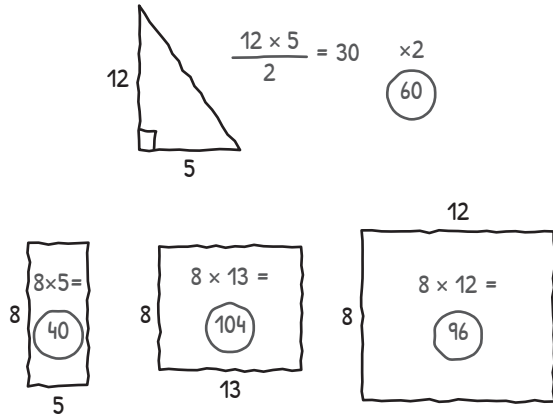
Net	Base shape	Name of Polyhedron
	<p>The shape of the base is . . .</p> <p>This polyhedron has _____ (one / two) base(s).</p>	<p>If I fold this net, it will make a . . .</p>
	<p>The shape of the base is . . .</p> <p>This polyhedron has _____ (one / two) base(s).</p>	<p>If I fold this net, it will make a . . .</p>
	<p>The shape of the base is . . .</p> <p>This polyhedron has _____ (one / two) base(s).</p>	<p>If I fold this net, it will make a . . .</p>

Word bank	
English	Español
cube	cubo
prism	prisma
pyramid	pirámide
rectangular	rectangular
square	cuadrado
triangle	triángulo
triangular	triangular

Name: _____ Date: _____ Period: _____

From Polyhedra to Nets

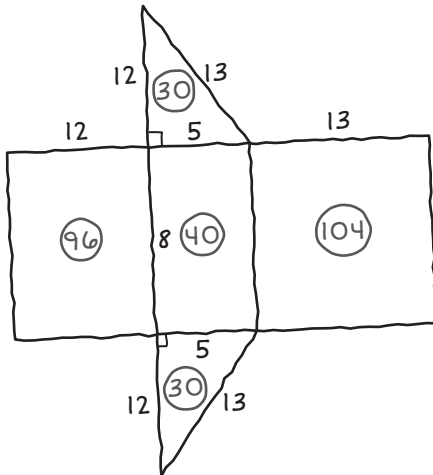
Ella



$60 + 40 + 104 + 96 = 300$ square units

To determine the surface area, Ella . . .

Kiri



$96 + 40 + 104 + 30 + 30 = 300$ square units

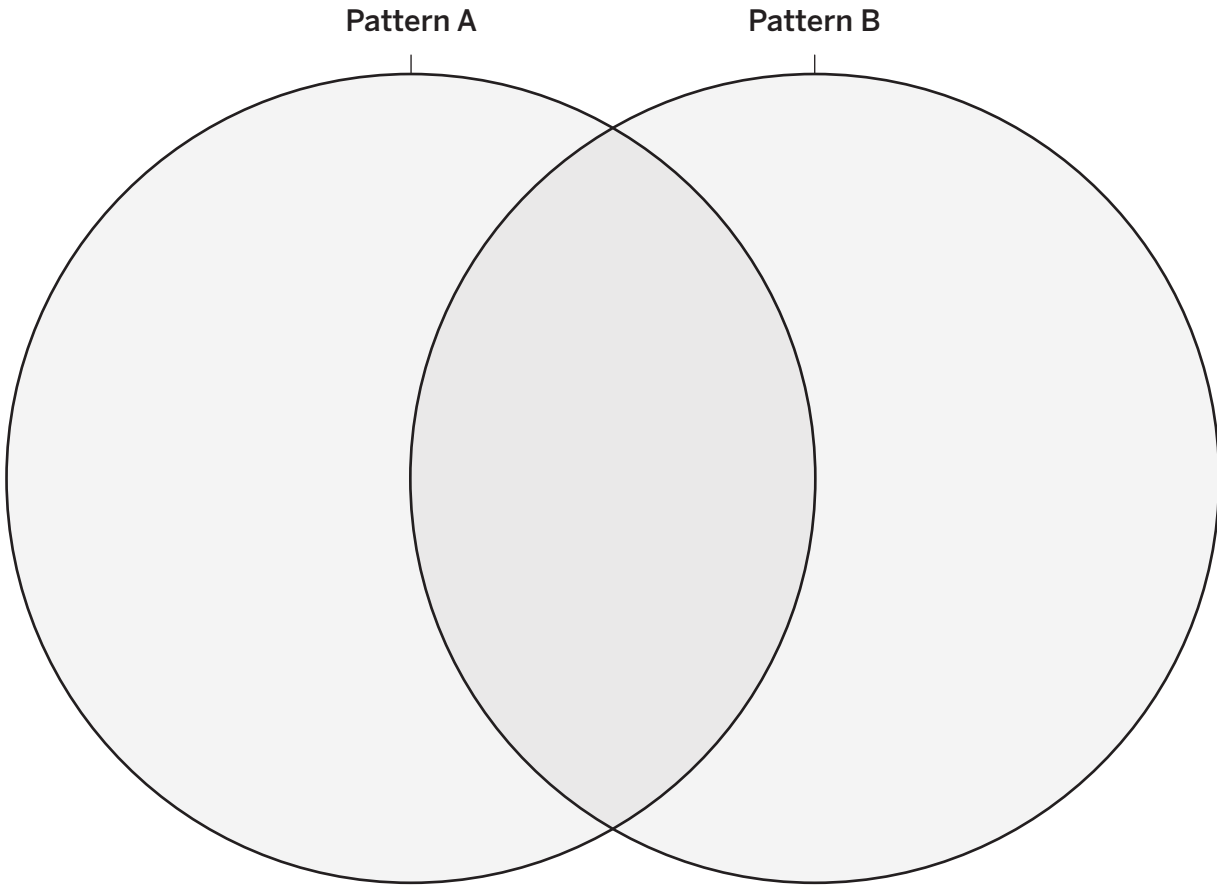
To determine the surface area, Kiri . . .

Word bank

Word bank					
English	face	net	prism	separate	surface area
Español	cara	red	prisma	separar	área de superficie

Name: _____ Date: _____ Period: _____

Warm-Up



Word bank						
English	base	face	net	prism	square	triangle
Español	base	cara	red	prisma	cuadrado	triángulo

Math Habits of Mind: Hábitos mentales matemáticos

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Puedo ir más despacio y primero comprender un problema difícil antes de intentar resolverlo.

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Puedo buscar estructuras o patrones que me ayuden a resolver problemas.

I can look for repeated calculations and other repeated steps to make generalizations.

Puedo buscar cálculos y otros pasos repetidos para hacer generalizaciones.

Name: Date: Period:

Questions and Sentence Frames

Why did you choose this habit of mind?

Did you choose any others? Why or why not?

What part of the Activity reminded you of this habit of mind?

Can you tell me more?

I chose this habit of mind because . . .

I also chose _____ because . . .

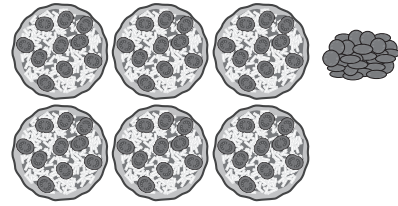
In the Activity, I . . .

Name: _____ Date: _____ Period: _____

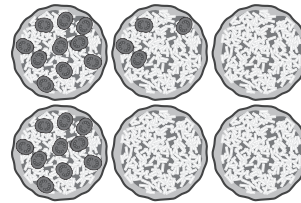
Ivan's Pizza

It takes 20 tomato slices to make 2 of Ivan's pizzas.

Ivan and Jada both made a mistake while making 6 of Ivan's pizzas.



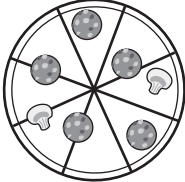
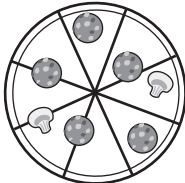
Jada: 24 slices



Mistake	Recommendation
<p>_____ made a mistake when . . . (Ivan / Jada)</p> <p>I know because . . .</p>	<p>_____ should make sure to . . . (Ivan / Jada)</p>

Name: _____ Date: _____ Period: _____

Pizza Ratios

Definition (in your own words)	Facts
<p>A ratio is . . .</p>	<p>A ratio can be written three different ways:</p>
<div style="border: 1px solid gray; border-radius: 15px; width: 150px; height: 50px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <p>ratio</p> </div>	
	
Examples	Non-examples

Word bank				
English	every	mushroom	pepperoni	relationship
Español	cada	champiñón	pepperoni	relación

Name: _____ Date: _____ Period: _____

Rice Advice

Bag A

Boil 3 cups of water for every 2 cups of rice.



5 servings

Bag B

Boil $1\frac{1}{2}$ cups of water for every 1 cup of rice.



2.5 servings

Bag C

Boil 4 cups of water for every 2 cups of rice.



6 servings

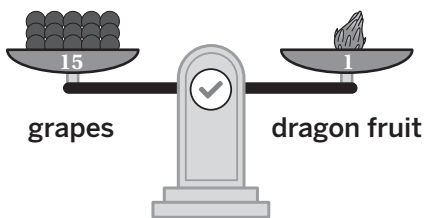
- The ratios with Bag A and Bag B are called equivalent ratios because . . .
- Marco will need _____ cups of water because he needs to _____ the recipe for Bag B.
- _____ cups of _____ to _____ cups of _____
- Marco should use the recipe for Bag _____. He will need to _____ the rice and the water by _____ to get 30 _____.
(multiply / divide)

Word bank

English	divide	double	multiply	relationship	triple
Español	dividir	duplicar	multiplicar	relación	triple

Name: _____ Date: _____ Period: _____

Fruit Lab



Will this 16 : 2 ratio balance the scale?

How did Ella change the dragon fruit?

Ella knows that 15 grapes will balance with 1 dragon fruit.

She says that 16 grapes will balance with 2 dragon fruit.

How did Ella change the grapes

Ella _____ balance the scale because . . .
(*did / did not*)

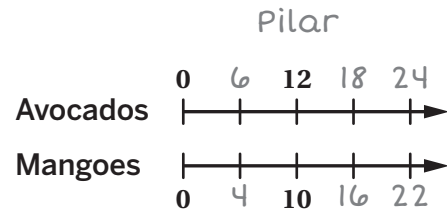
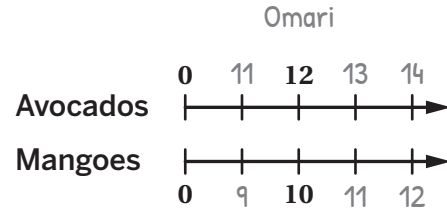
Word bank				
English	balance	divide	double	multiply
Español	equilibrarse	dividir	duplicar	multiplicar

Name: _____ Date: _____ Period: _____

More Double Number Lines

Omari and Pilar both made a mistake on their double number line diagrams.

Complete the table for your favorite mistake.



Identify any correct thinking.	_____ correctly determined that . . . (Omari / Pilar)
Identify any incorrect or unclear thinking.	
Create a correct and clear solution.	I would tell _____ . . . (Omari / Pilar)

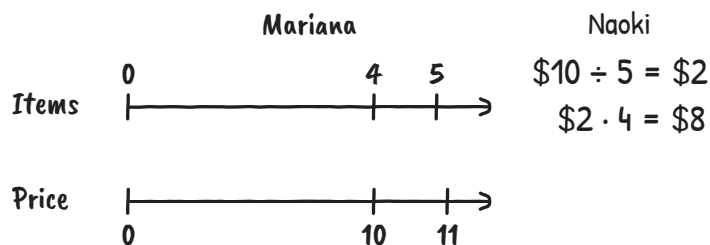
Word bank				
English	align by zeros	count up	double number line	equivalent ratios
Español	alineal por ceros	contar hacia arriba	recta numérica doble	razones equivalentes

Name: _____ Date: _____ Period: _____

How Much for Many?

Mariana and Noaki both made a mistake on their calculations on Card K.

Complete the table for your favorite mistake.



Identify any correct thinking.	_____ correctly determined that . . . (Mariana / Noaki)
Identify any incorrect or unclear thinking.	
Create a correct and clear solution.	I would tell _____ . . . (Mariana / Noaki)

Word bank						
English	battery	cost price	count up	double number line	equivalent ratios	per
Español	batería	precio de costo	contar hacia arriba	recta numérica doble	razones equivalentes	por

Name: _____ Date: _____ Period: _____

Least Common Multiples

Definition/Definición

Abbreviation/Abreviatura

least common multiple/
mínimo común múltiplo

Common multiples of 6 and 9

Multiples of 9:

Multiples of 6:

Common multiples of 6 and 9:

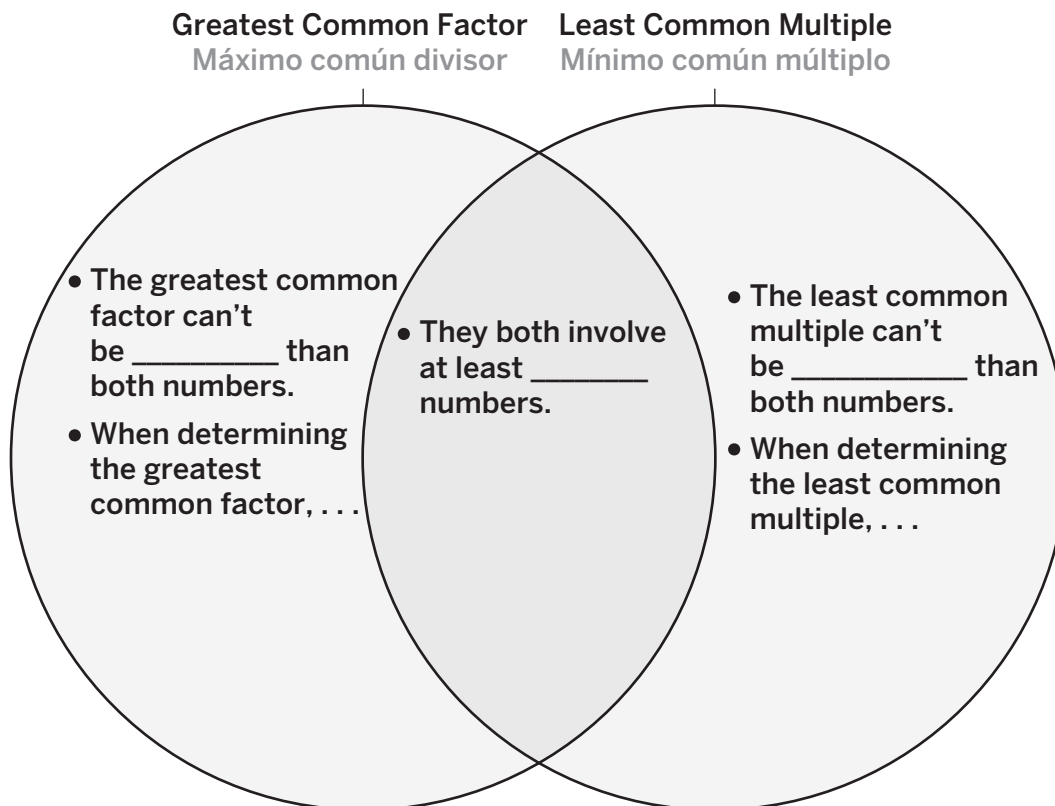
Least common multiple of 6 and 9:

Example/Ejemplo

Example/Ejemplo

Name: _____ Date: _____ Period: _____

Common Factors and Multiples



Word bank				
English	larger	smaller	multiplication	division
Español	mayor	menor	multiplicación	división

Name: _____ Date: _____ Period: _____

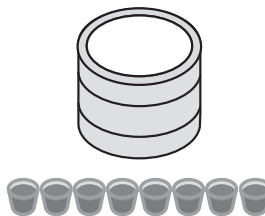
Comparing Ratios

Luca's Ratio



6 ounces blue
2 gallons white

Marc's Ratio



8 ounces blue
4 gallons white

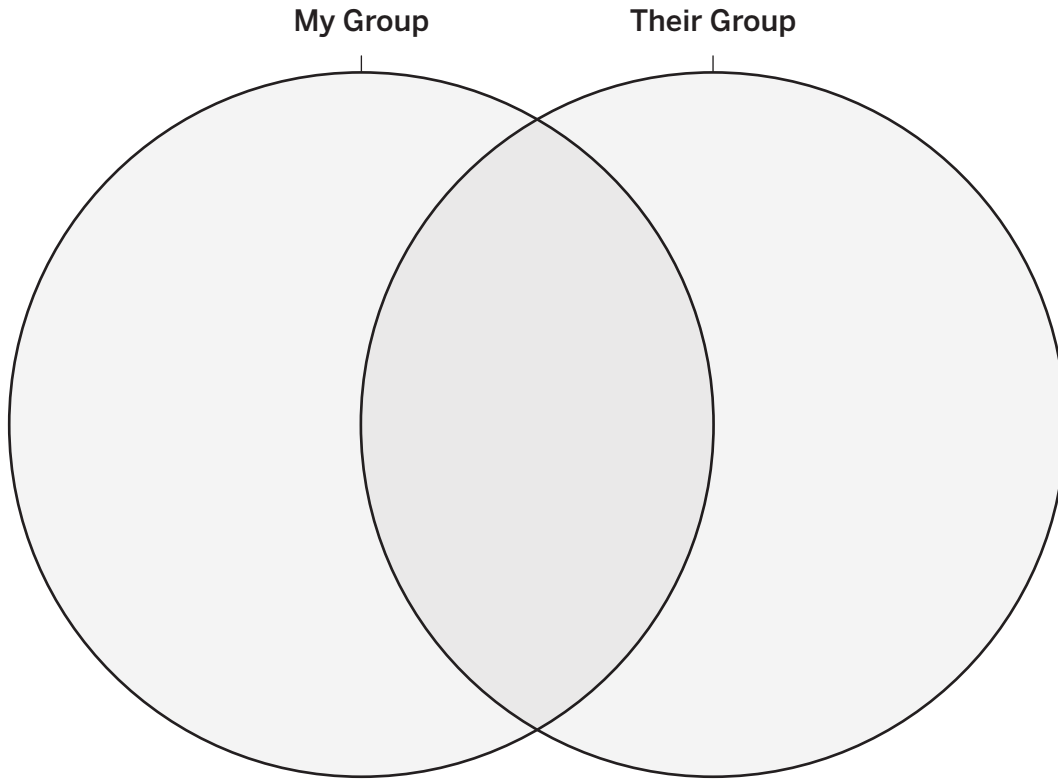
_____ makes a darker blue, because . . .
(Luca / Marc)

Comparing ratios per 1	Luca uses _____ ounces of blue _____ gallon of white. Marc uses _____ ounces of blue _____ gallon of white.	
Creating equal amounts of white paint	If I double Luca's ratio, both ratios would make _____ gallons of white paint. Luca would have _____ ounces of blue, and Marc would have _____ ounces of blue.	
Creating equal amounts of blue paint	If I multiply Luca's ratio by _____ and Marc's ratio by _____ both ratios would have 24 ounces of blue paint. Luca would have _____ gallons of white paint and Marc would have _____ gallons of white paint.	

Name: _____ Date: _____ Period: _____

FEMA Poster

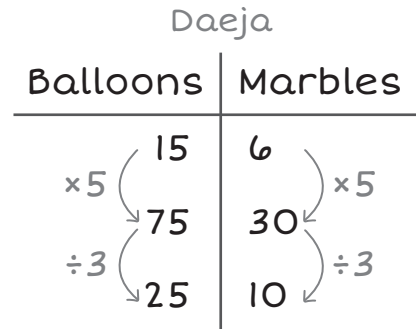
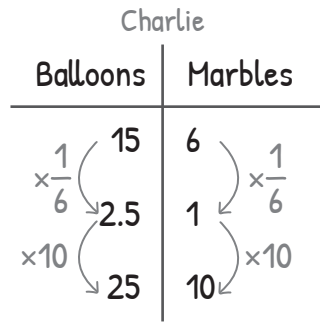
Select one group's poster and compare their work to your group's work.



Word bank						
English	paper towel	duct tape	magnifying glass	cotton balls	bed	crutches
Español	toalla de papel	cinta adhesiva	lupa	bolas de algodón	cama	muletas

Name: _____ Date: _____ Period: _____

Marble Float



Compare: How are these strategies different? *Comparar:* ¿En qué se diferencian estas estrategias?

Connect: How are these strategies alike? *Conectar:* ¿En qué se parecen estas estrategias?

Word bank

Word bank			
English	equivalent ratio	factor	multiple
Español	razón equivalente	factor	múltiplo

Name: _____ Date: _____ Period: _____

Sort 'em

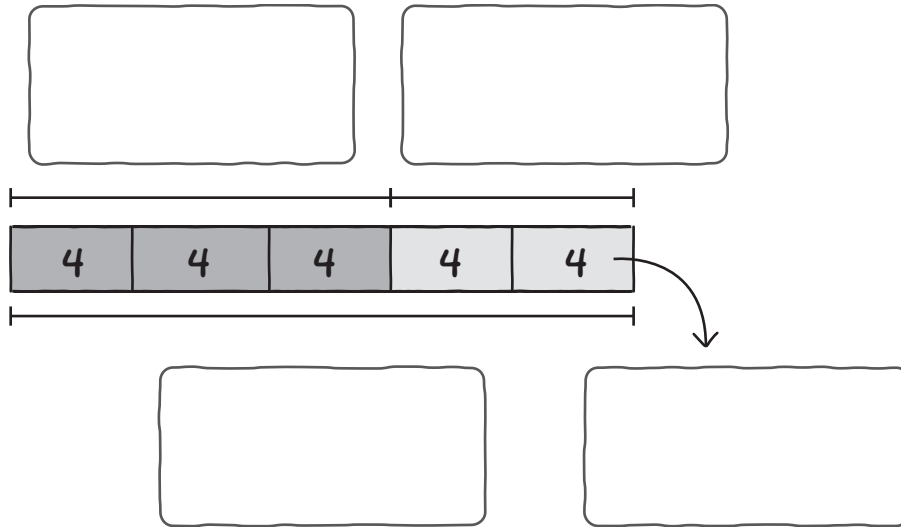
Answer each of the following questions for each problem card to determine if it's a ratio relationship.

Problem	What quantities are given in the problem?	What words indicate a ratio relationship?
A		
B		
C		
D		
E		
F		

Word bank						
English	compost	flashlight	hospital	minimum wage	population	worms
Español	compost	linterna	hospital	salario mínimo	población	gusanos

Name: _____ Date: _____ Period: _____

How Much of Each?



Cups of yellow paint

Cups of green paint

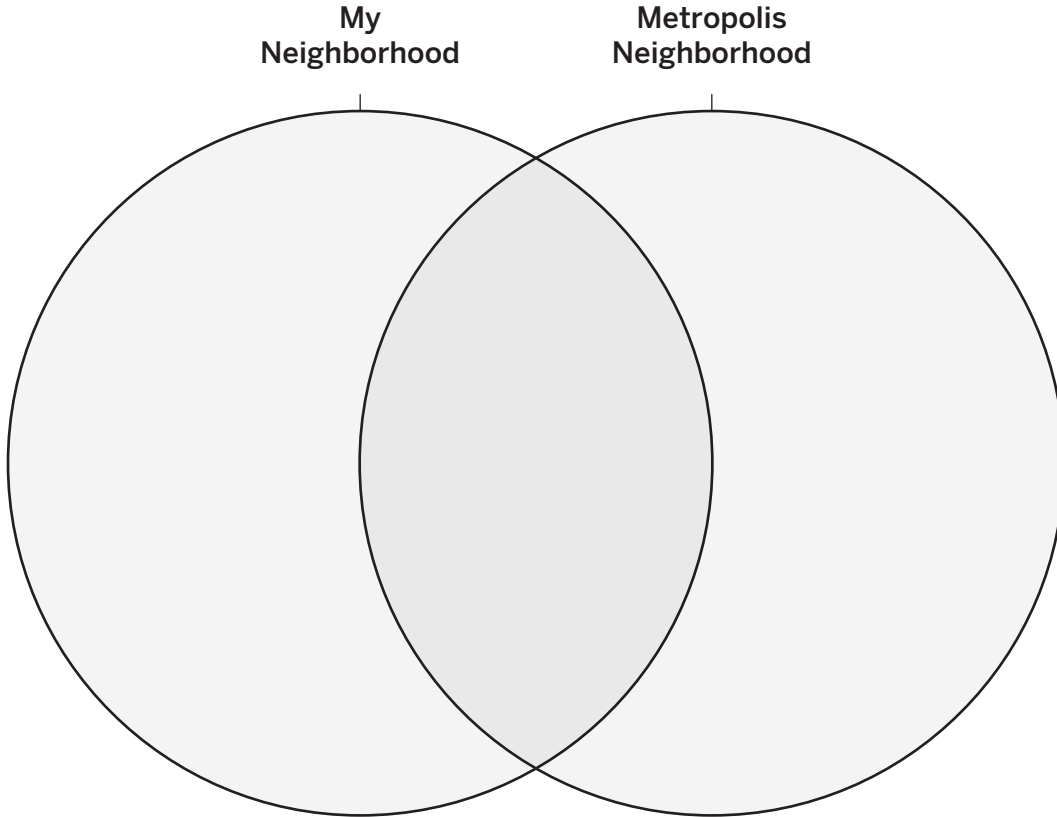
Cups of blue paint

Word bank		
English	equivalent ratio	tape diagram
Español	razón equivalente	diagrama de cinta

Name: _____ Date: _____ Period: _____

Affordable and Market-Rate Housing

Use the Venn diagram to compare your neighborhood to Metropolis neighborhood.



Word bank			
English	affordable	market-rate	neighborhood
Español	asequible	precio de mercado	barrio

Name: _____ Date: _____ Period: _____

Cutting Waste

Composting is another way to reduce food trash. Maria and Hoang want to cut the amount of food that gets thrown away each year by 5,000 pounds.

How many students need to compost their food trash at lunch every day to meet this goal?

To reduce food trash by _____ in a year, they will need to _____ pounds of food trash every _____. Each student produces _____ pounds of food trash a day, so they will need to convince _____ students to _____ their food trash each _____.

About _____ students need to compost their food trash every day.

Word bank				
English	compost	day	reduce	waste
Español	compostar	día	reducir	desperdiciar

Math Habits of Mind: Hábitos mentales matemáticos

I can slow down and first make sense of a challenging problem before trying to solve it.

Puedo ir más despacio y primero comprender un problema difícil antes de intentar resolverlo.

I can represent real-world problems and interpret their solutions within the context of the problem.

Puedo representar problemas del mundo real e interpretar sus soluciones dentro del contexto del problema.

I can justify my thinking and ask questions to help me understand the thinking of others.

Puedo justificar mi razonamiento y hacer preguntas que me ayuden a comprender el razonamiento de los demás.

I can apply the math that I know to solve real-world problems, make assumptions and revise my thinking as needed.

Puedo poner en práctica mis conocimientos matemáticos para resolver problemas del mundo real, formulando hipótesis y modificando mi razonamiento según sea necesario.

I can select an appropriate tool to help me solve problems.

Puedo seleccionar una herramienta adecuada que me ayude a resolver problemas.

I can communicate my thinking and solutions clearly to others.

Puedo comunicar mi razonamiento y soluciones claramente a los demás.

I can look for structure or patterns to help me solve problems.

Puedo buscar estructuras o patrones que me ayuden a resolver problemas.

I can look for repeated calculations and other repeated steps to make generalizations.

Puedo buscar cálculos y otros pasos repetidos para hacer generalizaciones.

Name: _____ Date: _____ Period: _____

Questions and Sentence Frames

Why did you choose this habit of mind?

Did you choose any others? Why or why not?

What part of the Activity reminded you of this habit of mind?

Can you tell me more?

I chose this habit of mind because . . .

I also chose _____ because . . .

In the Activity, I . . .

Name: _____ Date: _____ Period: _____

Describe It

1 foot is about the same length as a . . .

1 meter is longer than _____ but shorter than . . .

1 pound is like the weight of a . . .

1 cup is enough to fill a . . .

1 gallon is like the amount of liquid in a . . .

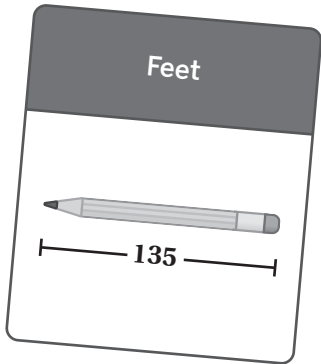
1 square foot takes up as much space as a . . .

Word bank						
English	area	complicated	cup	foot	gallon	length
Español	área	complicado	taza	pie	galón	longitud
English	meter	measurement	pound	volume	weight	yard
Español	metro	medida	libra	volumen	peso	yarda

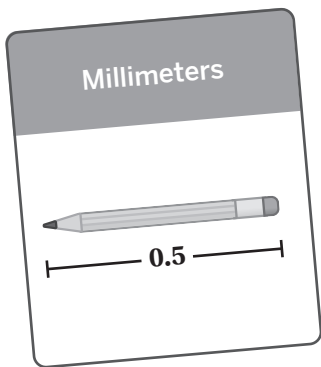
Name: _____ Date: _____ Period: _____

Classroom Lengths

Explain why Amara's matches are incorrect.



This length does not match this unit because . . .

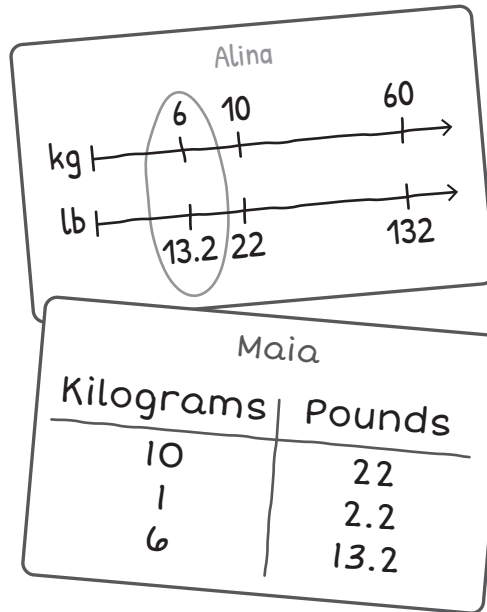


This length does not match this unit because . . .

Word bank			
English	feet	millimeter	ruler
Español	pies	milímetro	regla

Name: _____ Date: _____ Period: _____

Weighing Strategies



Compare: How are these strategies different?
Comparar: ¿En qué se diferencian estas estrategias?

Connect: How are these strategies alike?
Conectar: ¿En qué se parecen estas estrategias?

Blank space for student responses to the Compare and Connect questions.

Word bank				
English	hay	horse	kilogram	pounds
Español	heno	caballo	kilogramo	libras

Name: _____ Date: _____ Period: _____

World Records

Write your speed estimates for each athlete.

Athlete	Danyil Boldyrev	Keni Harrison	Cesar Cielo
Approximate Speed (meters per second m/s)			



Discuss:

- Which athlete is the fastest?

_____ is the fastest because his/her speed is greater than the speed of . . .

- Which athlete is the slowest?

_____ is the slowest because his/her is less than the speed of . . .

- Where do you think you fall in the order?

My speed is greater than the speed of _____ but less than the speed of

_____ so I am the _____ fastest/slowest.
(1st / 2nd / 3rd / 4th)

- Did your order change from Problem 5?

My original order was . . .

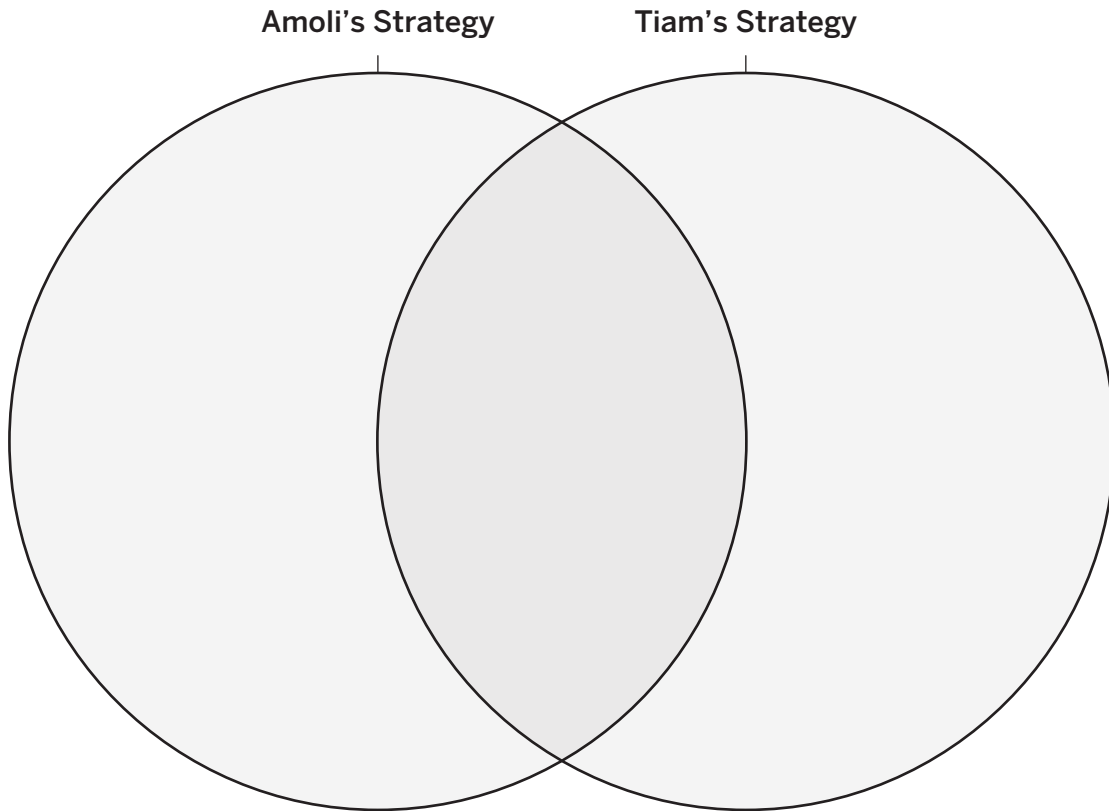
My new order is . . .

Word bank			
English	rate	speed	unit rate
Español	tasa	velocidad	tasa unitaria

Name: _____ Date: _____ Period: _____

How Fast?

Compare and connect Amoli's and Tiam's strategies using the Venn diagram.



Word bank			
English	equivalent ratio	unit	unit rate
Español	razón equivalente	unidad	tasa unitaria

Name: _____ Date: _____ Period: _____

New Flavors

unit price/precio unitario

Dollar per Ounce

How much does swirl cost per ounce?

Dollar	Ounce
5	4
	1

The swirl costs _____ per ounce.



\$5.00
4 oz

Ounce per Dollar

How many ounces can you get per dollar?

Dollar	Ounce
5	4
1	

You can get _____ ounces per dollar.

_____ means the amount of money you pay to buy 1 ounce of swirl.
(Dollar per ounce / Ounce per dollar)

_____ means the amount of swirl you can buy for 1 dollar.
(Dollar per ounce / Ounce per dollar)

Word bank

English	ounce	per	soft serve	swirl	unit rate
Español	onza	por	helado soft	helado en espiral	tasa unitaria

Name: _____ Date: _____ Period: _____

Arms and Fingers

Arms	Fingers
_____	_____

Select a question to answer.

<input type="checkbox"/> If you know the number of fingers, how can you determine the number of arms?	I can determine the number of arms by _____ by _____. <i>(dividing / multiplying)</i>
<input type="checkbox"/> If you know the number of arms, how can you determine the number of fingers?	I can determine the number of fingers by _____ by _____. <i>(dividing / multiplying)</i>

Word bank				
English	arm	divide	finger	multiply
Español	brazo	dividir	dedo	multiplicar

Name: _____ Date: _____ Period: _____

Missing Orders



Shop A		Shop B		Shop C	
Weight (oz)	Cost (\$)	Weight (oz)	Cost (\$)	Weight (oz)	Cost (\$)
5	2.00	6	1.50	4	1.20

Shop _____ is the best deal because . . .

Word bank					
English	best deal	cost	price per ounce	ounce per dollar	weight
Español	mejor oferta	costo	precio por onza	onza por dólar	peso

Name: _____ Date: _____ Period: _____

Warm-Up

Definition (in your own words)

Facts

**percent
(percentage)**

Examples

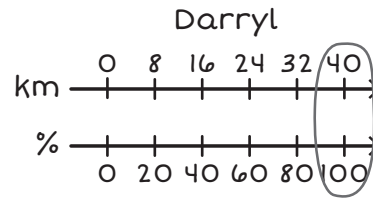
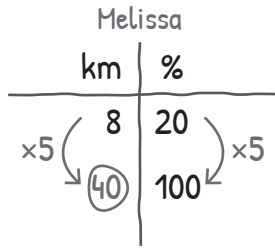
Non-examples

Word bank				
English	discount	percent	represent	whole
Español	descuento	por ciento	representar	entero

Name: _____ Date: _____ Period: _____

Bicycle Goals

Here are two different strategies for calculating the goal when 20% of the goal is 8 kilometers.



<p>Compare: How are these strategies different? <i>Comparar:</i> ¿En qué se diferencian estas estrategias?</p>	<p>Connect: How are these strategies alike? <i>Conectar:</i> ¿En qué se parecen estas estrategias?</p>

Word bank				
English	added	double number line	multiplied	percentage
Español	agregado	recta numérica doble	multiplicar	porcentaje

Name: _____ Date: _____ Period: _____

Sale Price and Original Price

Here are two percentage questions.

<p>The original price of a hat is \$18.</p> <p>If the sale price is \$11.70, what percent of the original price did I pay</p>	<p>A discount card lets you pay 70% of the price of all items in a store.</p> <p>If I use the card to buy a pair of sunglasses for \$63, what was the original price?</p>
---	---

How are they alike?

- Both are about . . .
- Both tell the _____ price.

How are they different?

- In one question, we know . . .
- In the other question, we know . . .
- The questions are asking for _____ information.
(the same / different)

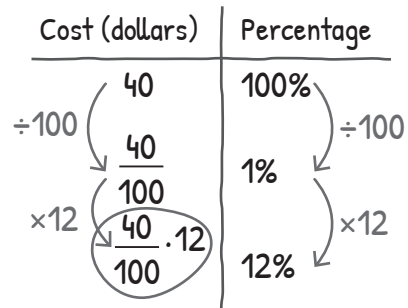
Word bank				
English	discount	paid	percentage	price
Español	descuento	pagar pagada	porcentaje	precio

Name: _____ Date: _____ Period: _____

Break It Down

This is Bao's strategy for finding 12% of 40.

Explain how you could use Bao's strategy to calculate how much of the price of each shirt goes to inventory cost (58% of \$40).



First, I would _____ by _____ text.

I would get _____ which is _____ %.

Then I would _____ by _____ instead of 12.

Word bank				
English	calculate	divide	multiply	price
Español	calcular	dividir	multiplicar	precio

Name: _____ Date: _____ Period: _____

Reaching Goals

1. Decide whose expression is correct.
2. Use the questions, word bank, and sentence frames to support your thinking.
3. Be prepared to defend your thinking.

Alejandro

$$\frac{100}{30} \cdot 36$$

Basheera

$$\frac{36}{30} \cdot 100$$

Decide: Is _____'s expression correct?
Decide: Decide: ¿Es correcta la expresión de _____?

Defend: Explain your thinking.
Defender: Explica tu pensamiento.

Alejandro's expression _____ correct.
(is / is not)
because . . .

Basheera's expression _____ correct.
(is / is not)
because . . .

Word bank

Word bank				
English	divide	expression	multiply	percentage
Español	dividir	expresión	multiplicar	porcentaje

Name: _____ Date: _____ Period: _____

A Country as a Village

If this country were a village of 100 people, how many of them would have each of these characteristics?

- If _____ were a village of 100 people, then _____ of them would own a car.
- If _____ were a village of 100 people, then _____ of them would be under 15 years old.
- If _____ were a village of 100 people, then _____ of them would have access to the internet.
- If _____ were a village of 100 people, then _____ of them would speak the native language.

At least two other characteristics of this country you are interested in learning about.

- I am interested in learning more about . . .

Math Habits of Mind: Hábitos mentales matemáticos

I can slow down and first make sense of a challenging problem before trying to solve it.

Puedo ir más despacio y primero comprender un problema difícil antes de intentar resolverlo.

I can represent real-world problems using equations and inequalities and interpret their solutions within the context of the problem.

Puedo representar problemas del mundo real usando ecuaciones y desigualdades e interpretar sus soluciones dentro del contexto del problema.

I can justify my thinking and ask questions to help me understand the thinking of others.

Puedo justificar mi razonamiento y hacer preguntas que me ayuden a comprender el razonamiento de los demás.

I can apply the math that I know to solve real-world problems, make assumptions and revise my thinking as needed.

Puedo poner en práctica mis conocimientos matemáticos para resolver problemas del mundo real, formulando hipótesis y modificando mi razonamiento según sea necesario.

I can select an appropriate tool to help me solve problems.

Puedo seleccionar una herramienta adecuada que me ayude a resolver problemas.

I can communicate my thinking and solutions clearly to others.

Puedo comunicar mi razonamiento y soluciones claramente a los demás.

I can look for structure or patterns to help me solve problems.

Puedo buscar estructuras o patrones que me ayuden a resolver problemas.

I can look for repeated calculations and other repeated steps to make generalizations.

Puedo buscar cálculos y otros pasos repetidos para hacer generalizaciones.

Name: Date: Period:

Questions and Sentence Frames

Why did you choose this habit of mind?

Did you choose any others? Why or why not?

What part of the Activity reminded you of this habit of mind?

Can you tell me more?

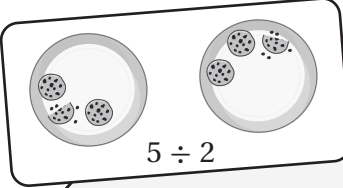
I chose this habit of mind because . . .

I also chose _____ because . . .

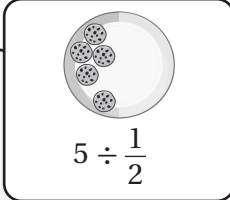
In the Activity, I . . .

Name: _____ Date: _____ Period: _____

Crumbly Cookie Quotients



$5 \div 2$



$5 \div \frac{1}{2}$

- You have ___ plates.
- The result of $5 \div 2$ is not a _____.

- Both have ___ cookies.
- Both divide the cookies _____ onto plates.

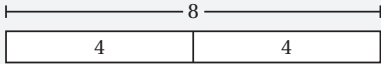
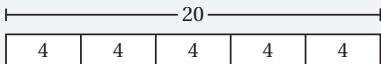
- You have _____ plates.
- The result of $5 \div \frac{1}{2}$ is a _____.

- When you divide a number by $\frac{1}{2}$ the result is _____ than you started with.
- When you divide a number by 2, the result is _____ than you started with.

Word bank				
English	equally	less	more	whole number
Español	equitativamente	menos	más	numero entero

Name: _____ Date: _____ Period: _____

Connecting Tape Diagrams

Tape Diagram	Situation	Solution
 <p>A horizontal line with a bracket above it labeled '8'. Below the line is a rectangle divided into two equal sections, each labeled '4'.</p>	<p>Niko has _____ grapes that he wants to share equally between _____ friends. How many grapes will each friend get?</p>	<p>$8 \div 2 = 4$ Each friend gets 4 _____</p>
 <p>A horizontal line with a bracket above it labeled '20'. Below the line is a rectangle divided into five equal sections, each labeled '4'.</p>	<p>Ariel paid \$ _____ for burgers. Each burger cost \$ _____. How many burgers did she buy?</p>	<p>$20 \div 4 = 5$ Ariel bought 5 _____.</p>
<p>Your Tape diagram:</p>		

Name: _____ Date: _____ Period: _____

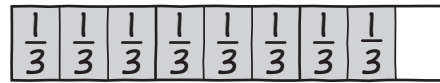
A Bigger Scoop

$$2\frac{2}{3} \div \frac{1}{3}$$

Vicente



Yona



Each cup is made up of _____ layers.

That means three _____ scoops make up one full cup.

So _____ scoops are needed in total.

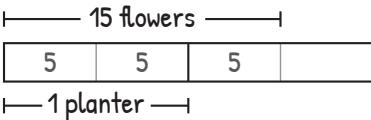
There are _____ sections in the tape diagram, so _____ scoops are needed.

Word bank

English	cup	scoop	section	tape diagram
Español	taza	cucharada	sección	diagrama de cinta

Name: _____ Date: _____ Period: _____

Practicing With Planters

Problem	Tape Diagram	Division Equation				
<p>Brianna has 15 flowers to put in her planters.</p> <p>The flowers fill $1\frac{1}{2}$ planters. How many flowers fill 1 planter?</p>	 <p style="text-align: center;"> $\overbrace{\hspace{10em}}^{15 \text{ flowers}}$ <table border="1" style="margin: auto;"> <tr> <td style="width: 25px; text-align: center;">5</td> <td style="width: 25px; text-align: center;">5</td> <td style="width: 25px; text-align: center;">5</td> <td style="width: 25px;"></td> </tr> </table> $\underbrace{\hspace{10em}}_{1 \text{ planter}}$ </p>	5	5	5		$15 \div 1\frac{1}{2} = ?$
5	5	5				

Brianna must have thought $1\frac{1}{2}$ as _____ $\frac{1}{2}$ sections. ($1\frac{1}{2} = \frac{3}{2}$)

Then she determined that there were _____ in each ____ of a _____.

Because there are _____ $\frac{1}{2}$ s in 1 planter, that means there are _____ flowers in 1 planter.

Word bank			
English	flower	half	planter
Español	flor	mitad	plantador

Name: _____ Date: _____ Period: _____

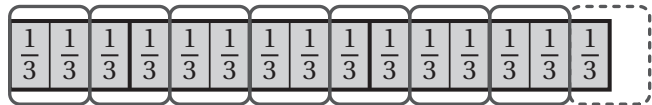
How Many Bricks?

$$5 \div \frac{2}{3}$$

Deja

$$5 \div \frac{2}{3}$$

Emma



"I need less than 5 bricks because I am dividing 5 by $\frac{2}{3}$, the result must be less than 5."

"Necesito menos de 5 ladrillos porque estoy dividiendo 5 entre $\frac{2}{3}$, el resultado debe ser inferior a 5."

"I need more than 7 bricks because there are 7 groups of $\frac{2}{3}$ and some left over."

"Necesito más de 7 ladrillos porque quedan 7 grupos de $\frac{2}{3}$ y sobra alguno."

I agree with _____. The quotient of $5 \div \frac{2}{3}$ must be _____ than _____ because ...
(less / more)

Word bank

Word bank							
English	cover	dividend	divisor	gap	leftover	remainder	quotient
Español	cubrir	dividendo	divisor	espacio	quedar	resto	cociente

Name: _____ Date: _____ Period: _____

More or Less Than One Group

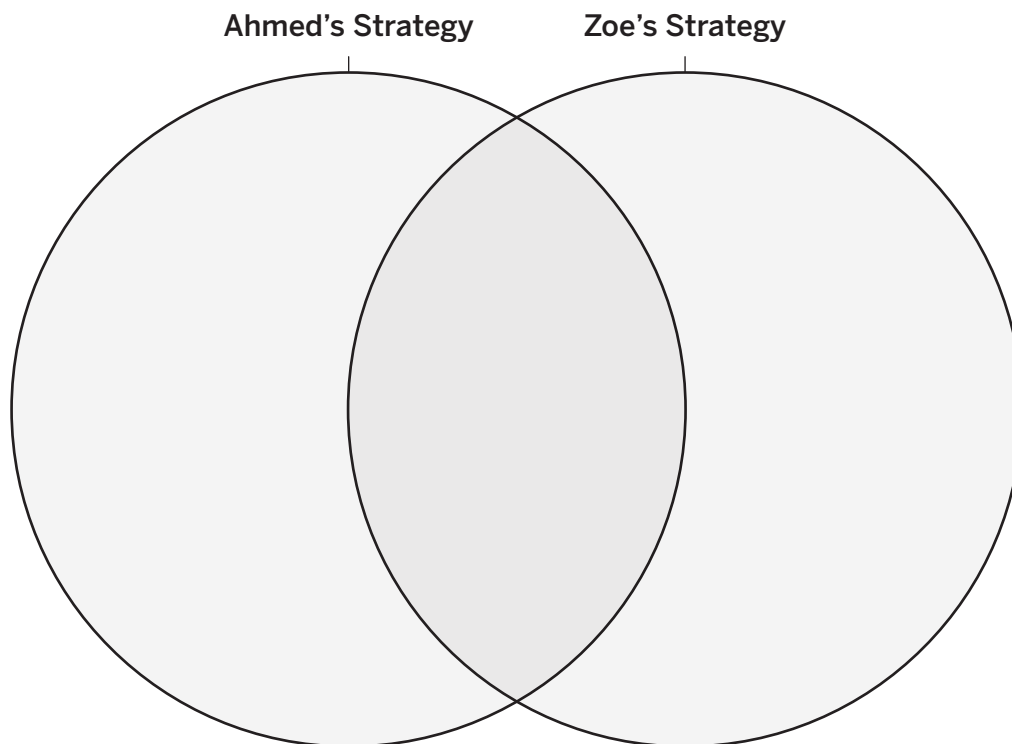
Deja's Strategy	Explanation of Steps
$1\frac{1}{2} \div \frac{1}{2}$	
$\frac{3}{2} \div \frac{1}{2}$	
$3 \div 1$	
3	

Word bank					
English	denominator	divide	improper fraction	mixed number	numerator
Español	denominador	dividir	fracción impropia	número mixto	numerador

Name: _____ Date: _____ Period: _____

Common Denominators

Compare the strategies of Ahmed and Zoe using the Venn diagram.

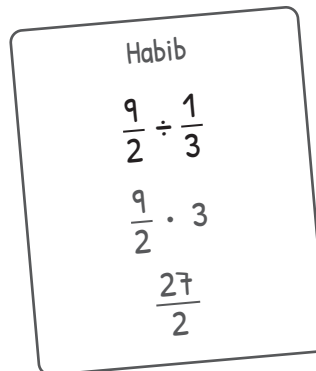


Word bank				
English	common denominator	fraction	numerator	quotient
Español	denominador común	fracción	numerador	cociente

Name: _____ Date: _____ Period: _____

Different Operation, Same Value

Sketch a tape diagram that represents Habib's strategy.



The tape diagram shows Habib's strategy because . . .

Word bank			
English	divide	multiply	whole
Español	dividir	multiplicar	entero

Name: _____ Date: _____ Period: _____

Two Strategies Revisited

Jalen

$$\frac{4}{3} \div \frac{2}{5}$$

$$\frac{20}{15} \div \frac{6}{15}$$

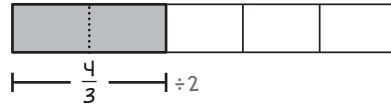
$$20 \div 6$$

$$\frac{10}{3}$$

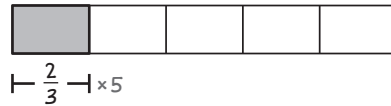
Katie



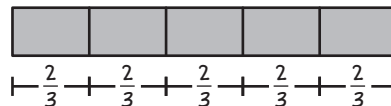
$$\frac{4}{3} \div \frac{2}{5}$$



$$\frac{4}{3} \div \frac{2}{5}$$



$$\frac{2}{3} \div \frac{1}{5}$$



$$\frac{10}{3}$$

Compare: How are these strategies different?

Comparar: ¿En qué se diferencian estas estrategias?

Connect: How are these strategies alike?

Conectar: ¿En qué se parecen estas estrategias?

Word bank

English	denominator	dividend	divisor	numerator	unit fraction
Español	denominador	dividendo	divisor	numerador	fracción unitaria

Name: _____ Date: _____ Period: _____

Creating New Strategies

Nia is _____ because . . .
(correct / incorrect)

Nia

The steps Nia used match what happens when . . .

$$\frac{2}{3} \div \frac{3}{5}$$

When I checked Nia's work, I found . . .

$$\frac{2}{3} \cdot \frac{5}{3}$$

To check if Nia's work is correct, I would . . .

$$\frac{10}{9}$$

I think Nia's strategy can work on all division expressions because . . .

This strategy might not work if . . .

For this strategy to work every time, you need to make sure that . . .

Word bank					
English	denominator	dividend	divisor	numerator	fraction
Español	denominador	dividendo	divisor	numerador	fracción

Name: _____ Date: _____ Period: _____

Write, Trade, Solve!

Expression	Question	Expression	Value of Expression
$4\frac{1}{2} \div \frac{1}{3}$	Ariel has _____ cups of blueberries. She wants to put _____ cups in each muffin she is making. How many muffins can she make?	$4\frac{1}{2} \div \frac{1}{3}$	She can make _____ _____ blueberry muffins.
$5 \div \frac{3}{4}$	A gardener has enough potting soil to cover a planter with an area of _____ square meters. If one side of the planter is _____ meters, how long is the other side?	$5 \div \frac{3}{4}$	The other side of the planter is _____ meters long
Pick your own expression:			

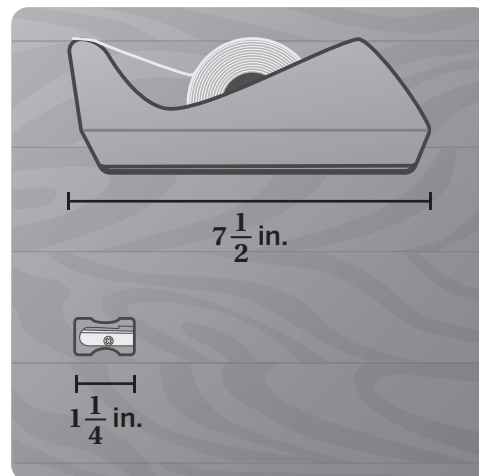
Name: _____ Date: _____ Period: _____

Comparing Classroom Objects

1. Decide whose statement is correct.
2. Use the questions, word bank, and sentence frames to support your thinking.
3. Be prepared to defend your thinking.

Ava says: *The tape dispenser is 6 times the length of the pencil sharpener.*

Haru says: *The pencil sharpener is $\frac{1}{6}$ of the length of the tape dispenser.*

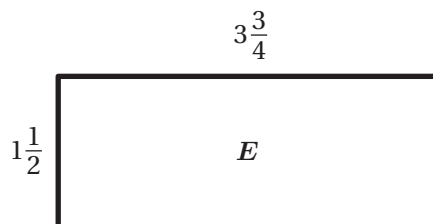


Decide: Is _____'s statement correct?	Defend: Explain your thinking.
Ava's statement _____ correct because . . . <i>(is / is not)</i>	
Haru's statement _____ correct not because . . . <i>(is / is not)</i>	

Word bank						
English	less than	longer	more than	pencil sharpener	shorter	tape dispenser
Español	menos que	más largo	más que	sacapuntas	más corto	dispensador de cinta

Name: _____ Date: _____ Period: _____

Areas



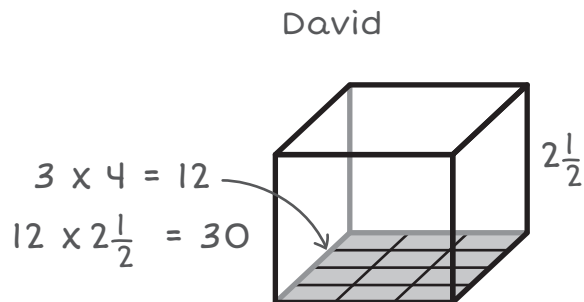
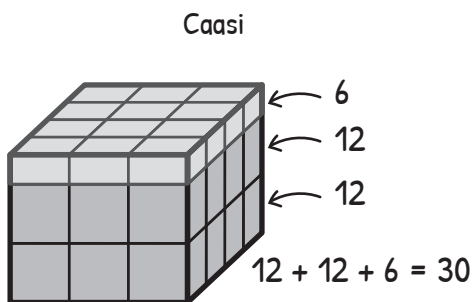
The area of the rectangle is: _____ square units.

Explain your strategy for determining the area of the rectangle.

Word bank				
English	area	divide	multiply	rectangle
Español	área	dividir	multiplicar	rectángulo

Name: _____ Date: _____ Period: _____

Volume Strategies



Compare: How are these strategies different?

Comparar: ¿En qué se diferencian estas estrategias?

_____ counted the number of cubes in (Caasi / David)

each layer and then added them together.

_____ calculated the area of the base (Caasi / David)

and then multiplied it by the height of the prism.

Compare: How are these strategies alike?

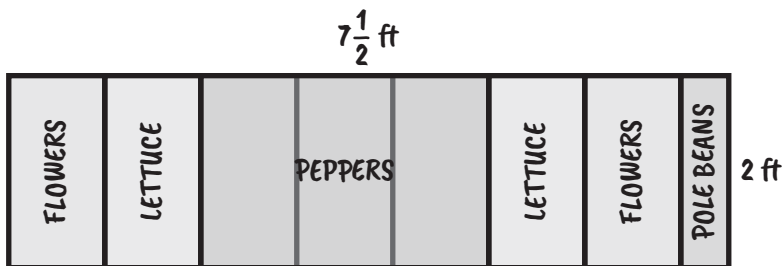
Comparar: ¿En qué se parecen estas estrategias?

Word bank

English	added	base	cubes	layer	multiplied	units
Español	sumar	base	cubos	capa	multiplicar	unidades

Name: _____ Date: _____ Period: _____

Warm-Up



Jin says 8 lettuce plants will fit in each lettuce section of the planter. Do you agree? Why or why not?

I _____ with Jin.
(agree / disagree)

Each lettuce section is _____ square feet. Lettuce requires _____ square feet per plant.

_____ \div _____ = _____

Jin can plant _____ total lettuce plants or _____ lettuce plants per square foot.

Word bank					
English	lettuce	plant	planter	section	square foot
Español	lechuga	planta	jardinera	sección	pie cuadrado

Math Habits of Mind: Hábitos mentales matemáticos

I can slow down and first make sense of a challenging problem before trying to solve it.

Puedo ir más despacio y primero comprender un problema difícil antes de intentar resolverlo.

I can represent real-world problems using equations and inequalities and interpret their solutions within the context of the problem.

Puedo representar problemas del mundo real usando ecuaciones y desigualdades e interpretar sus soluciones dentro del contexto del problema.

I can justify my thinking and ask questions to help me understand the thinking of others.

Puedo justificar mi razonamiento y hacer preguntas que me ayuden a comprender el razonamiento de los demás.

I can apply the math that I know to solve real-world problems, make assumptions and revise my thinking as needed.

Puedo poner en práctica mis conocimientos matemáticos para resolver problemas del mundo real, formulando hipótesis y modificando mi razonamiento según sea necesario.

I can select an appropriate tool to help me solve problems.

Puedo seleccionar una herramienta adecuada que me ayude a resolver problemas.

I can communicate my thinking and solutions clearly to others.

Puedo comunicar mi razonamiento y soluciones claramente a los demás.

I can look for structure or patterns to help me solve problems.

Puedo buscar estructuras o patrones que me ayuden a resolver problemas.

I can look for repeated calculations and other repeated steps to make generalizations.

Puedo buscar cálculos y otros pasos repetidos para hacer generalizaciones.

Name: Date: Period:

Questions and Sentence Frames

Why did you choose this habit of mind?

Did you choose any others? Why or why not?

What part of the Activity reminded you of this habit of mind?

Can you tell me more?

I chose this habit of mind because . . .

I also chose _____ because . . .

In the Activity, I . . .

Name: _____ Date: _____ Period: _____

Cooking Challenge

Use these sentence frames to help you respond to Problems 2 and 3.



- I calculated the total cost by _____.
- Fatima (can / cannot) make her recipe for less than \$20.00 because _____.
- The total cost of the ingredients is _____, which is (less than / more than / equal to) \$20.00.
- To determine if Fatima can make her recipe for less than \$20.00, I added the cost of _____, _____, and _____.
- I used estimation by rounding _____ to _____ and _____ to _____.
- From my estimation, I know Fatima’s recipe costs about _____ which is (less than / more than / equal to) \$20.00.
- I rounded the price of each ingredient to the nearest _____ and added them together to get _____, which is (less than / more than / equal to) \$20.00.

Word bank				
English	brown rice	chicken thighs	dish	head of broccoli
Español	arroz integral	muslos de pollo	plato	cabeza de brócoli
English	ingredient	jalepeño	recipe	tuna
Español	ingrediente	jalapeño	receta	atún

Name: _____ Date: _____ Period: _____

Fruit Challenges

Rafael says: *56 plus 44 is 100, so the pomegranate and the lychee make a whole pound.*

	
0.56 lb	0.044 lb

Identify any correct thinking.	
Identify any incorrect or unclear thinking.	
Write a question to help Rafael revise his response.	

Word bank					
English	hundredth	lychee	pomegranate	pound	thousandth
Español	centésima	lichi	granada	libra	milésima

Name: _____ Date: _____ Period: _____

Vertical Calculations

Consider Kayleen's work to calculate $13.9 - 1.12$.

$$\begin{array}{r} 13.9 \\ -1.12 \\ \hline 2.7 \end{array}$$

Identify any correct thinking.	Kayleen correctly . . .
Identify any incorrect or unclear thinking.	
Create a correct and clear solution.	I would tell Kayleen . . .

Word bank

Word bank			
English	hundredth	place value	tenth
Español	centésima	valor posicional	décima

Name: _____ Date: _____ Period: _____

Keeping It One Hundredth

- Study Jayden's strategy.
- Use Jayden's strategy to multiply $0.02 \cdot 0.9$.

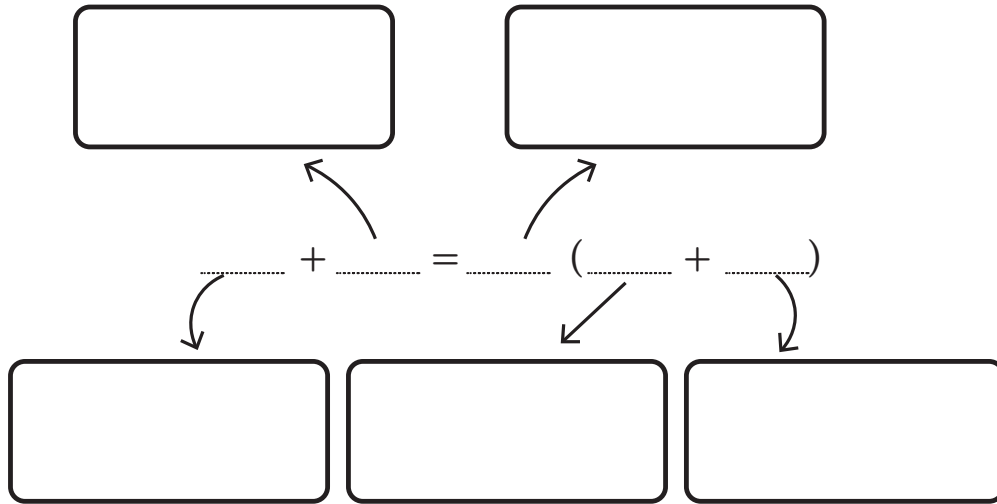
Jayden's Work	Your Work
$0.3 \cdot 0.08$ $\frac{3}{10} \cdot \frac{8}{100}$ $\frac{24}{1000} = 0.024$	

Describe the steps you took to multiply $0.02 \cdot 0.9$

Word bank			
English	decimal	equivalent	fraction
Español	decimal	equivalente	fracción

Name: _____ Date: _____ Period: _____

Garden Arrangements



Number of rows

Total number of
cornstalks

Total number of
pepper plants

Number of
cornstalks per row

Number of pepper
plants per row

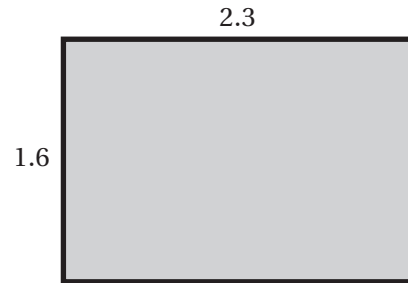
Name: _____ Date: _____ Period: _____

Calculating With an Area Model

Diego wonders if area models could also help him multiply decimals like $2.3 \cdot 1.6$.

a Show how you would split the rectangle into smaller parts to multiply $2.3 \cdot 1.6$.

b Explain why you split it that way.



Use the sentence frame that best supports your strategy.

- I split the rectangle so that the _____ were separate from the _____.
- I split _____ so that I could . . .
- I split the rectangle into . . .

Word bank							
English	area	half	ones	rectangle	separate	split	tenths
Español	área	mitad	unidades	rectángulo	separado	dividir	décimas

Name: _____ Date: _____ Period: _____

Multiple Methods

Kwame and Tiara use different strategies to multiply $8.4 \cdot 1.3$

Kwame

	8	0.4
1	8	0.4
0.3	2.4	0.12

$8 + 0.4 + 2.4 + 0.12 = 10.92$

Tiara

$$8.4 \cdot 1.3$$

$$84 \cdot 13 \cdot \frac{1}{10} \cdot \frac{1}{10}$$

$$\begin{array}{r} 84 \\ \times 13 \\ \hline 12 \\ 240 \\ 40 \\ + 800 \\ \hline 1092 \end{array} \cdot \frac{1}{100}$$

10.92

 Discuss:

Compare: How are these strategies different?
Comparar: ¿En qué se diferencian estas estrategias?

Connect: How are these strategies alike?
Conectar: ¿En qué se parecen estas estrategias?

Word bank					
English	decimal	fraction	multiply	parts	whole
Español	decimal	fracción	multiplicar	partes	entero

Name: _____ Date: _____ Period: _____

Partial Quotients

Matias is trying to determine $365 \div 5$, but he thinks the quotient is too large.

$$\begin{array}{r}
 \boxed{730} \\
 30 \\
 700 \\
 \hline
 5 \overline{)365} \\
 \underline{-350} \\
 15 \\
 \underline{-15} \\
 0
 \end{array}$$

<p>Identify any correct thinking.</p>	<p>Matias correctly determined that . . .</p>
<p>Identify any incorrect or unclear thinking.</p>	<p>Matias was incorrect when he . . .</p>
<p>Create a correct and clear solution.</p>	<p>I would tell Matias . . .</p>

Word bank				
English	equal	groups	larger/largest	multiply
Español	igual	grupos	más grande	multiplicar

Name: _____ Date: _____ Period: _____


Warm-Up

Peter	Alina
$ \begin{array}{r} 6 \\ 40 \\ \underline{100} \\ 4 \overline{) 584} \\ \underline{-400} \leftarrow 4 \text{ groups of } 100 \\ 184 \\ \underline{-160} \leftarrow 4 \text{ groups of } 40 \\ 24 \\ \underline{-24} \leftarrow 4 \text{ groups of } 6 \\ 0 \end{array} $	$ \begin{array}{r} 146 \\ 4 \overline{) 584} \\ \underline{-4} \\ 184 \\ \underline{-16} \\ 24 \\ \underline{-24} \\ 0 \end{array} $

Use the sentence frames that best support your discussion.

- First, Alina _____. Next, Alina _____. Finally, Alina _____.
- Alina's strategy was to _____.
- I see _____ in both strategies.
- What is clear to me is _____. What is unclear to me is _____.

Decimal Division Strategies

 **Directions:** Make copies and pre-cut. Give each student the appropriate support for justifying their choice by choosing one or more of the explanations for the bulleted list. **Note:** The top portion offers emerging language supports, the middle portion offers expanding language supports, and the bottom portion offers bridging language supports.

Describe Arjun's strategy.

Arjun wrote 6 and 3 as _____.

Then, Arjun found a common _____.

Lastly, he _____ the numerators.

Word bank				
English	denominator	divide	fraction	numerator
Español	denominador	dividir	fracción	numerador

Describe Arjun's strategy.

Arjun wrote _____ as _____.

Then, Arjun found a _____.

Lastly, he _____ the _____.

Describe Arjun's strategy.

Arjun wrote . . .

Then, Arjun . . .

Lastly, he . . .

Name: _____ Date: _____ Period: _____

Ali's and Camila's Strategies

<p>Ali</p> $\begin{array}{r} 5.3 \\ 5 \overline{) 26.5} \\ \underline{-25} \quad \leftarrow (5 \text{ groups of } 5) \\ 1.5 \\ \underline{-1.5} \quad \leftarrow (5 \text{ groups of } 0.3) \\ 0 \end{array}$ <p>$15 \text{ tenths} \div 5 = 3 \text{ tenths}$</p> <p style="text-align: center;">↑ 0.3</p>	<p>Camila</p> $\begin{array}{r} 5.3 \\ 5 \overline{) 26.5} \\ \underline{-25} \\ 15 \\ \underline{-15} \\ 0 \end{array}$
--	--

Alike:	<ul style="list-style-type: none"> • Ali and Camila both started by dividing _____ by _____. • Ali and Camila both used the _____ method.
Different:	<ul style="list-style-type: none"> • Ali kept the decimal point and . . . • Camila started to divide without considering the decimal point and . . .

Word bank						
English	decimal point	dividend	divisor	long division	remainder	quotient
Español	coma decimal	dividendo	divisor	división larga	resto	cociente

Name: _____ Date: _____ Period: _____

Speedy Cinema

Speed	Duration
0.5x	24
1x	12
2x	6
4x	3

I notice . . .

- Playback speeds greater than 1 go faster, and less than 1 go _____.
(*slower/faster*)
- The higher the playback speed, the _____ the duration.
(*shorter/longer*)
- The playback speed multiplied by the duration is always _____.



I wonder . . .

- Why is the _____ always 12?

Word bank					
English	duration	movie	playback speed	shorter/longer	slower/faster
Español	duración	película	velocidad de reproducción	más corto/más largo	más lento/ más rápido

Name: _____ Date: _____ Period: _____

Do Hybrid Cars Save Money?

<p>Gas-powered DesWagon / DesWagon de gasolina (Price: \$28,100)</p> 	<p>Hybrid DesMobile / DesMobile híbrido (Price: \$32,650)</p> 
<p>DesWagon's gas tank capacity is 16.8 gallons. If gas costs \$3.50 per gallon, then filling its tank will cost _____.</p>	<p>DesMobile's gas tank capacity is 11.5 gallons. If gas costs \$3.50 per gallon, then filling its tank will cost _____.</p>
<p>DesWagon can travel 490 miles on a full tank. If a full tank costs _____, the cost to drive 1 mile is _____.</p>	<p>DesMobile's can travel 575 miles on a full tank. If a full tank costs _____, the cost to drive 1 mile is _____.</p>
<p>The cost to drive 1 mile is _____. If Brielle's family drove about 15,000 miles a year, each year they will spend _____.</p>	<p>The cost to drive 1 mile is _____. If Brielle's family drove about 15,000 miles a year, each year they will spend _____.</p>

If Brielle's family plans on driving the car for 5 years, I would recommend them to buy _____
(DesWagon / DesMobile)

Because . . .

Word bank				
English	cost	gas tank capacity	full tank	range
Español	costo	capacidad del tanque de gasolina	tanque lleno	rango

Name: _____ Date: _____ Period: _____

Resale Value

<p>Ada</p> $12\% \cdot 40$ $0.12 \cdot 40$ 40 <p>\$4.8</p>	<p>Bao</p> $12\% \cdot 40$ $\frac{12}{100} \cdot 40$ $\frac{12}{100} \cdot 40$ $\frac{48}{10}$ <p>\$4.80</p>
--	--

Alike:	<ul style="list-style-type: none"> Both Ada and Bao ...
Different:	<ul style="list-style-type: none"> Ada rewrote 12% as a _____. Then Ada _____ to calculate the product. Bao rewrote 12% as a _____. Then Bao _____ to calculate the product.

Word bank				
English	area model	decimal	fraction	percent
Español	modelo de área	decimal	fracción	por ciento

Name: Date: Period:

Grocery Prices



Discuss:

- a** Why do you think the cost of these groceries is different in different places? / Por qué crees que el costo de estos alimentos es diferente en diferentes lugares?
- The cost of living in certain cities is more expensive than in other cities. / El coste de vida en determinadas ciudades es más caro que en otras ciudades.
 - Local stores might raise their prices in cities where there is a higher average income. / Las tiendas locales podrían aumentar sus precios en ciudades donde hay un ingreso promedio más alto.
- b** What do you think the impact might be on families who spend more than 2.2% of their weekly income on these groceries? / Cuál cree que podría ser el impacto en las familias que gastan más del 2,2% de sus ingresos semanales en estos alimentos?
- They'll have less money for other things, like housing, education, or even fun stuff. / Tendrán menos dinero para otras cosas, como vivienda, educación o incluso cosas divertidas.
 - They also might not buy as many healthy food options for their families. / También es posible que no compren tantas opciones de alimentos saludables para sus familias.

Name: _____ Date: _____ Period: _____

Words With Multiple Meanings

Draw a picture or write in words to show one or more math meanings and another meaning of the term.

Math meaning(s)

base

Another meaning

Math Habits of Mind: Hábitos mentales matemáticos

I can slow down and first make sense of a challenging problem before trying to solve it.

Puedo ir más despacio y primero comprender un problema difícil antes de intentar resolverlo.

I can represent real-world problems using equations and inequalities and interpret their solutions within the context of the problem.

Puedo representar problemas del mundo real usando ecuaciones y desigualdades e interpretar sus soluciones dentro del contexto del problema.

I can justify my thinking and ask questions to help me understand the thinking of others.

Puedo justificar mi razonamiento y hacer preguntas que me ayuden a comprender el razonamiento de los demás.

I can apply the math that I know to solve real-world problems, make assumptions and revise my thinking as needed.

Puedo poner en práctica mis conocimientos matemáticos para resolver problemas del mundo real, formulando hipótesis y modificando mi razonamiento según sea necesario.

I can select an appropriate tool to help me solve problems.

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I can communicate my thinking and solutions clearly to others.

Puedo comunicar mi razonamiento y soluciones claramente a los demás.

I can look for structure or patterns to help me solve problems.

Puedo buscar estructuras o patrones que me ayuden a resolver problemas.

I can look for repeated calculations and other repeated steps to make generalizations.

Puedo buscar cálculos y otros pasos repetidos para hacer generalizaciones.

Name: Date: Period:

Questions and Sentence Frames

Why did you choose this habit of mind?

Did you choose any others? Why or why not?

What part of the Activity reminded you of this habit of mind?

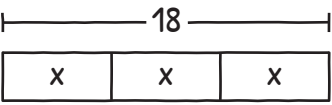
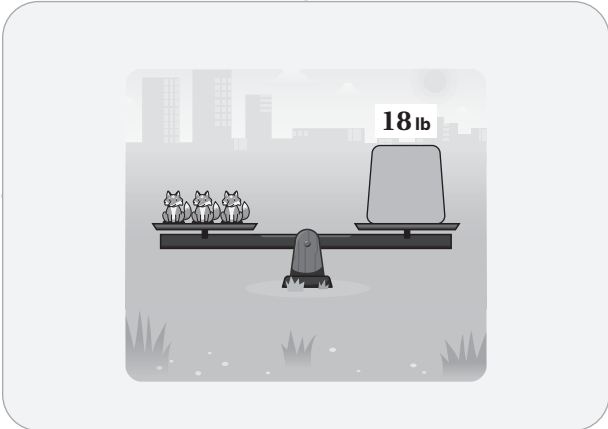
Can you tell me more?

I chose this habit of mind because . . .

I also chose _____ because . . .

In the Activity, I . . .

Equations and Tape Diagrams

Situation	Tape diagram
<p>These 3 foxes balance with an 18-pound weight. Each fox weighs the same amount.</p>	
	
$3 \cdot x = 18$	$x + x + x = 18$
Equation 1	Equation 2

The _____, x , represents . . .

The _____ is like the left side of the equation. There are 3 x 's, so . . .

The _____ in the tape diagram, 18, is like the right side of the equations.

Word bank					
English	equation	tape diagram	total	unknown	weight
Español	ecuación	diagrama de cinta	total	Incógnita o desconocido	peso

Name: _____ Date: _____ Period: _____

Which Equation?


For each card, select the equation that represents the situation. Use the sentence frame to help you determine which part of the equation relates to each part of the situation.

Card 6: Rebecca has \$22 to spend on day passes to ride the subway. Each day pass costs \$9. She can buy x day passes.

$x - 9 = 22$

$9x = 22$

$9 + x = 22$


- a** In this equation, _____ represents how much money Rebecca has to spend on day passes, _____ represents the cost of each day pass, and _____ represents how many day passes Rebecca can buy.
- b** The solution to this equation is:
- $x =$ _____ which means . . .
- c**  **Discuss:** Does this solution make sense?

Card 4: Mohamed made x dollars from mowing lawns. He spent \$9 on a new video game and has \$22 left.

$x - 9 = 22$

$9x = 22$

$9 + x = 22$

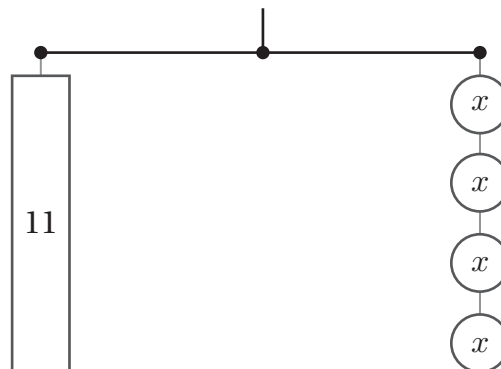
- a** In this equation, _____ represents how much money Mohamed made mowing lawns, _____ represents how much he spent on a new video game, and _____ represents how much money Mohamed has left.
- b** The solution to this equation is:
- $x =$ _____ which means . . .
- c**  **Discuss:** Does this solution make sense? Explain your thinking.

Name: _____ Date: _____ Period: _____

Make it, Solve it

Select an equation that represents this hanger.

- A. $11 + x = 4$
- B. $11 = 4x$
- C. $11 = x + 4$
- D. $11 = x + x + x + x$



Equation(s) _____ represents this hanger because there is _____ on the left side of the hanger and _____ on the right side of the hanger.

Name: _____ Date: _____ Period: _____

Solving and Solutions

$$\frac{c}{4} = 1.2$$

Fabiana

$$\begin{array}{r} \frac{c}{4} = 1.2 \\ \times 4 \quad \times 4 \\ \hline c = 4.8 \end{array}$$

Alejandro

$$\begin{array}{r} \frac{c}{4} = 1.2 \\ \frac{4}{4} = 1 \\ \text{so } \dots \\ \frac{4.8}{4} = 1.2 \end{array}$$

Fabiana multiplied _____ of the equation with 4 to leave the _____ alone on one side of the equation.

Fabiana found the value of c by using _____.

Alejandro _____ 4 for the variable to write $\frac{4}{4} = 1$.

Using number sense, Alejandro concluded the value of the variable must be 1.2 to make the equation _____.

Both Fabiana and Alejandro found the same _____.

Word bank						
English	both sides	inverse operations	solution to the equation	substitute	true	variable
Español	ambos lados	operaciones inversas	solución a la ecuación	sustituto	verdadero	variable

Name: _____ Date: _____ Period: _____

Trade and Solve

Complete the sentence frames to describe a situation to match each equation. Then pick another equation from the equation bank to write your own situation.

	Situation	The variable represents . . .
$x + \frac{3}{4} = 6$	<p>I worked for _____ hours.</p> <p>Then I worked for _____ of an hour. I worked _____ hours total.</p>	x represents . . .
$0.25x = 20$	<p>A plant in Ada's garden grows _____ inches taller each week.</p> <p>After _____ weeks, the plant has grown _____ inches.</p>	x represents . . .
Equation:		

Name: _____ Date: _____ Period: _____

Intro to Variable Expressions

1. Decide which expression you think is correct.
2. Show or describe your thinking in writing.
Use pictures, diagrams, words, and/or numbers to support your thinking.
3. Be prepared to defend your position.

Rudra's Expression: $p + 1.50$
Sai's Expression: $1.50p$

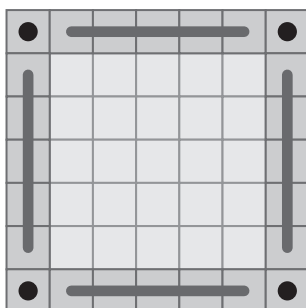
<p>Rudra's expression, $p + 1.50$, is _____ (correct / incorrect) because . . .</p>	<p>Rudra's expression _____ work for every amount of (does / does not) apples in the table. For example:</p>
<p>Sai's expression, $1.50p$, is _____ (correct / incorrect) because . . .</p>	<p>Sai's expression _____ work for every amount of (does / does not) apples in the table. For example:</p>

Name: _____ Date: _____ Period: _____

Border Tiles

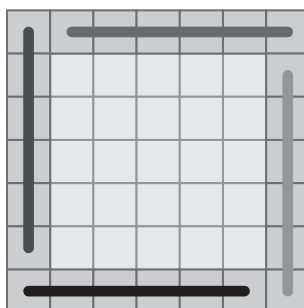
Lucia

$$5 + 5 + 5 + 5 + 4$$



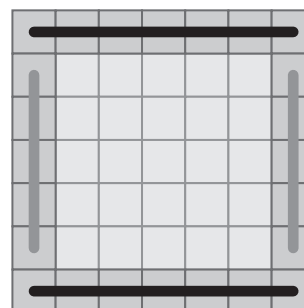
Kyrie

$$4(5 + 1)$$



Manuel

$$7 + 7 + 5 + 5$$



1. Lucia's and Kyrie's work are alike because they both . . .
2. Kyrie's and Manuel's work are alike because they both . . .
3. Lucia's and Manuel's work are alike because they both . . .
4. All three students' work are alike because they all . . .

Word bank				
English	adding	bottom	corner	perimeter
Español	sumando	abajo	esquina	perímetro
English	same	sides	top	total
Español	mismo / igual	lados	arriba	total

Name: _____ Date: _____ Period: _____

Rectangles and Equivalent Expressions

Product Expression	$4(2x + 2)$	$2(2x + 1)$	$1(3x + 5)$	$5(x + 3)$
Sum Expression	$8x + 8$	$4x + 2$	$3x + 5$	$5x + 15$

Product Expression

I notice that the width of the rectangle relates to the . . .

I notice that the length of the rectangle relates to the . . .

Sum Expression

I notice the tiles on the left relate to the . . .

I notice the tiles on the right relate to the . . .

Word bank					
English	area	expression	factor	length	multiply
Español	área	expresión	factor	longitud	multiplicar
English	parentheses	rectangle	relate	term	width
Español	paréntesis	rectángulo	relacionar	término	ancho

Name: _____ Date: _____ Period: _____

Two Truths and a Lie


A	B	C
$7(x + 2)$	$3x + 4(x + 2)$	$7x + 8$
$7x + 14$	$3x + 4x + 8$	
	$7x + 8$	

In Problem 16, I know that _____ is not equivalent to the other two expressions
(A / B / C)

because when I use the _____ property to rewrite each problem, expressions _____
(A / B / C)

and _____ are the same.
(A / B / C)

Powers of 2

 **Directions:** Make copies and pre-cut. Give each student the appropriate support.

Note: The top portion offers emerging language supports, the middle portion offers expanding language supports, and the bottom portion offers bridging language supports.

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Decide who you think is correct, Miriam or Kira.

a. I think Miriam is _____ because she _____ 2 ones to get _____.
(correct / incorrect) (multiplied / added)

b. I think Kira is _____ because she _____ 5 ones to get _____ and
(correct / incorrect) (multiplied / added)
_____ 2 ones to get _____.
(multiplied / added)

Decide who you think is correct, Miriam or Kira.

a. I think Miriam is _____ because she _____ 5 ones to get _____.
(correct / incorrect) (multiplied / added)

_____ 2 ones to get _____.
(multiplied / added)

b. I think Kira is _____ because she _____ 5 ones to get _____ and
_____ 2 ones to get _____.

Word bank

added

correct

incorrect

multiplied

Decide who you think is correct, Miriam or Kira.

a. I think Miriam is _____ because she _____ 5 ones to get _____ and
_____ 2 ones to get _____.

b. I think Kira is . . .

Word bank

added

correct

incorrect

multiplied

Name: _____ Date: _____ Period: _____

Evaluating Expressions

1. Look at how Latifa and Nicolas determined the value of $2 + 10^2$.
2. Choose your position and decide which students' work you agree with.
3. Be prepared to defend your position.

Latifa
$2 + 10^2$
12^2
144

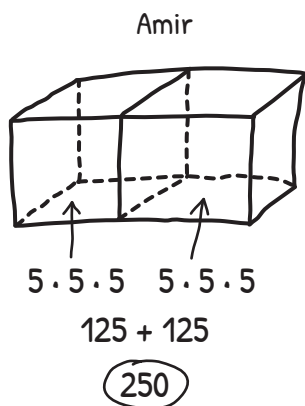
Nicolas
$2 + 10^2$
$2 + 100$
102

<p>Nicolas is _____ (correct / incorrect)</p> <p>because . . .</p>	<p>His answer _____ match the total area (does / does not)</p> <p>represented in Problem 3.</p> <p>First, he _____ the _____ and _____ to (multiplied / added)</p> <p>get _____. Then he _____ the _____ to get (multiplied / added)</p> <p>_____.</p>
<p>Latifa is _____ (correct / incorrect)</p> <p>because . . .</p>	<p>Her answer _____ match the total area (does / does not)</p> <p>represented in Problem 3.</p> <p>First, she _____ the _____ and _____ to (multiplied / added)</p> <p>get _____. Then she _____ the (multiplied / added)</p> <p>_____ to get _____.</p>

Name: _____ Date: _____ Period: _____

Cubes and Squares

Evaluating $2x^3$ when $x = 5$



Chloe

$$2x^3 \text{ when } x=5$$

$$2(5)^3 = 2(5 \cdot 5 \cdot 5)$$

$$= 2 \cdot 125$$

$$= 250$$

Amir drew two _____.

Each cube has the side length of _____ units.

Amir calculated the _____ of each cube by . . .

He determined the final answer as 250 by . . .

Chloe wrote the expression and _____ 5 for x .

By following the _____, Chloe first calculated 5^3 by . . .

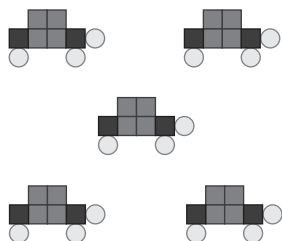
She determined the final answer as 250 by . . .

Both Amir and Chloe . . .

Name: _____ Date: _____ Period: _____

Turtles, Turtles, Turtles

t = number of turtles
 g = number of green circles



Number of Turtles, t	Number of Green Circles, g
1	3
2	6
3	9
4	12
5	15

Saavni and Kadeem wrote equations to represent the relationship between t and g . Whose equation is correct?

Saavni's equation: $g = 3t$

Kadeem's equation: $t = 3g$

Saavni's equation is _____ because the equation says that the number of _____
(correct / incorrect)

_____ is 3 times the number of _____.

In the equation, when $t = 1$, $g =$ _____. And when $t = 2$, $g =$ _____.

This _____ make sense with the description.
(does / does not)

Kadeem's equation is _____ because the equation says that the number of _____
(correct / incorrect)

_____ is 3 times the number of _____.

In the equation, when $t = 3$, $g =$ _____.

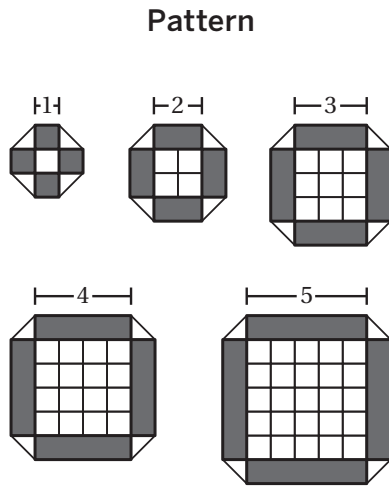
This _____ make sense with the description.
(does / does not)

Name: _____ Date: _____ Period: _____

Introducing Graphs

The *independent variable* is n , the side length of the purple rectangles.

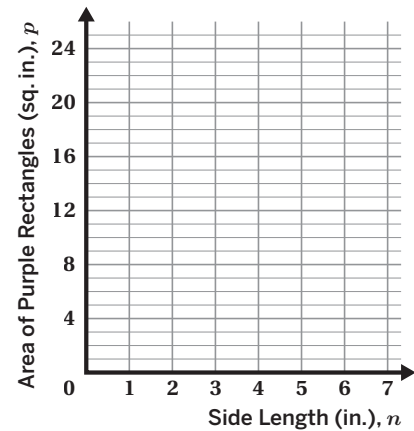
The *dependent variable* is p , total area of the purple rectangles.



Jayden's table

n	p
1	4
2	8
3	12
4	16
5	20

Rebecca's graph



Each _____ on the graph matches one of the images.

Both the graph and the table represent the same relationship in different ways.

- For example, I can see the row with $n = 2$ and $p = 8$ in the graph represented by a point (_____, _____)

The 2 represents _____ and the 8 represents ...

Name: _____ Date: _____ Period: _____

What's Missing?

Situation	Closer Look	Unit rate
<p>Amanda sells paletas, p, for \$2 each.</p> <p>What is the total amount of money, m, she can earn?</p>	<p>Each paleta costs \$_____.</p> <p>Five paletas cost \$_____.</p> <p>Ten paletas cost \$_____.</p> <p>$p$ paletas cost \$_____.</p>	<p>_____ per paleta</p>
<p>Tameeka sells paletas, p, for \$2.50 each.</p> <p>What is the total amount of money, m, she can earn?</p>	<p>Each paleta costs \$_____.</p> <p>Two paletas cost \$_____.</p> <p>Four paletas cost \$_____.</p> <p>$p$ paletas cost \$_____.</p>	
<p>Esteban sells piraguas, p, for \$3.50 each.</p> <p>What is the total amount of money, m, he can earn?</p>	<p>Each piragua costs \$_____.</p> <p>Two piraguas cost \$_____.</p> <p>Four piraguas cost \$_____.</p> <p>$p$ piraguas cost \$_____.</p>	

- The table in Card _____ has the unit rate of _____.
- The graph in Card _____ has the unit rate of _____.
- The equation in Card _____ has the unit rate of _____.

Word bank				
English	equation	graph	table	unit rate
Español	ecuación	gráfico	tabla	tasa unitaria

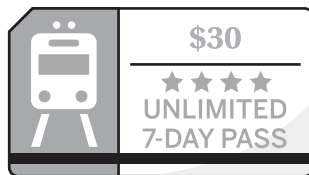
Name: _____ Date: _____ Period: _____

Helping Customers

Option 1
Regular Fare
Tarifa regular



Option 2
Unlimited 7-Day Pass
Pase ilimitado de 7 días



Option 3
Reduced Fare
Tarifa reducida



For people who have low income, are 65 or older, or who have a qualifying disability.

Option 1 costs _____ per ride.

Option 2 costs _____ for 7 days.

Option 3 costs _____ per ride.

Eliza is 70. She rides the subway between 2–8 times per week. I think she should choose Option _____ because ...

Nikhil is 23. He uses a wheelchair. He rides the subway 5 times per week. I think he should choose Option _____ because ...

Sydney is 20. She rides between 15–20 times per week. I think she should choose Option _____ because ...

Bao is 16. He rides the subway 2 times per week. I think he should choose Option _____ because ...

Word bank					
English	customer	fare	subway	ticket	wheelchair
Español	cliente	tarifa	metro	boleto	silla de ruedas

Name: Date: Period:

Words With Multiple Meanings

Draw a picture or write in words to show one or more math meanings and another meaning of the term.

Math meaning(s)

opposite

Another meaning

Math Habits of Mind: Hábitos Mentales Matemáticos

I can slow down and first make sense of a challenging problem before trying to solve it.

Puedo ir más despacio primero y comprender un problema difícil antes de intentar resolverlo.

I can represent real-world problems using equations and inequalities and interpret their solutions within the context of the problem.

Puedo representar problemas del mundo real mediante ecuaciones y desigualdades e interpretar sus soluciones dentro del contexto del problema.

I can justify my thinking and ask questions to help me understand the thinking of others.

Puedo justificar mi razonamiento y hacer preguntas que me ayuden a comprender el razonamiento de los demás.

I can apply the math that I know to solve real-world problems, make assumptions and revise my thinking as needed.

Puedo poner en práctica mis conocimientos matemáticos para resolver problemas del mundo real, formulando hipótesis y modificando mi razonamiento cuando sea necesario.

I can select an appropriate tool to help me solve problems.

Puedo seleccionar una herramienta adecuada que me ayude a resolver problemas.

I can communicate my thinking and solutions clearly to others.

Puedo comunicar mi razonamiento y soluciones claramente a los demás.

I can look for structure or patterns to help me solve problems.

Puedo buscar estructuras o patrones que me ayuden a resolver problemas.

I can look for repeated calculations and other repeated steps to make generalizations.

Puedo buscar cálculos y otros pasos repetidos para hacer generalizaciones.

Name: Date: Period:

Questions and Sentence Frames

Why did you choose this habit of mind?

Did you choose any others? Why or why not?

What part of the Activity reminded you of this habit of mind?

Can you tell me more?

I chose this habit of mind because . . .

I also chose _____ because . . .

In the Activity, I . . .

Name: _____ Date: _____ Period: _____

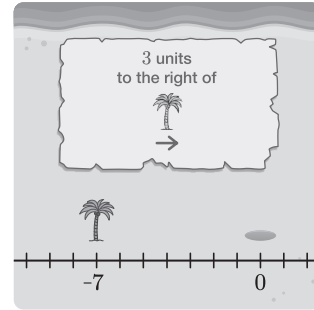
Sand Dollar Challenges

Juliana and Kai made mistakes on the problem.



Juliana said the sand dollar is at -5.

Kai said the sand dollar is at -10.

Circle your favorite mistake.



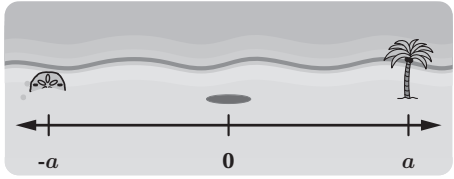
<p>Identify any correct thinking.</p>	<p>_____ correctly determined that . . . (Juliana / Kai)</p>
<p>Identify any incorrect or unclear thinking.</p>	
<p>Create a correct and clear solution.</p>	<p>I would tell _____ . . . (Juliana / Kai)</p>

Word bank						
left	negative	number line	palm tree	positive	right	sand dollar
←	-	↔		+	→	

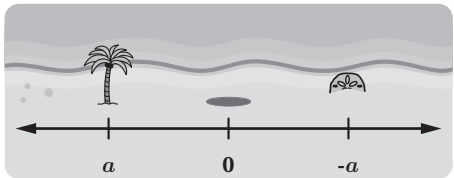
Name: _____ Date: _____ Period: _____

Rational Numbers and Their Opposites

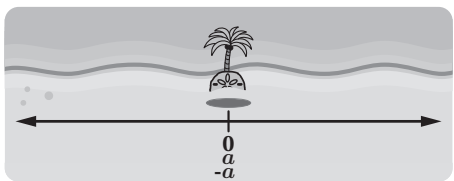
When a is in different locations, what do you notice about the opposite of a , $(-a)$?



When a is positive, . . .



When a is negative, . . .



When a is zero, . . .

- a and $-a$ are opposites because . . .
- No matter whether a is positive or negative, $-a$. . .
- The opposite of 0 is . . .
- _____ has an opposite.

Word bank

English	negative number	number line	opposite	positive number	zero
Español	número negativo	recta numérica	opuesto	número positivo	cero

Name: _____ Date: _____ Period: _____

Warm-Up

Elevation is the vertical distance and direction from sea level to a location.
Draw arrows to match each card with the correct elevation.

↓ Below sea level

↔ Sea level

↑ Above sea level

🐧 Penguin

🦀 Crab

🐙 Octopus

🏊 Swimming

🧑 Hiking

🤿 Diving

- + 20 inches represents ...
- -10 inches represents ...
- 0 inches represents ...

Name: Date: Period:

Warm-Up

Definition (in your own words)	Facts
<u>sign</u>	
Examples	Non-examples

Name: _____ Date: _____ Period: _____

What Is Absolute Value?

1. Decide which statement you think is correct.
2. Show or describe your thinking in writing. Use pictures, diagrams, words, and/or numbers to support your thinking.
3. Be prepared to defend your position.

Prisha

Rafael

" $|x|$ means "the opposite of x ."

" $|x|$ means "how far x is from zero."

<p>Prisha is _____ (correct / incorrect) because ...</p>	<ul style="list-style-type: none"> • The absolute value of _____ is _____ which means x _____ the opposite of x. (is / is not) • For example:
<p>Rafael is _____ (correct / incorrect) because ...</p>	<ul style="list-style-type: none"> • The absolute value of _____ is _____ which means x _____ the distance from zero. (is / is not) • For example:
<p>Use this space to draw a picture if it helps with your explanation.</p>	

Name: _____ Date: _____ Period: _____

We've Got Game(s)

An *account balance* tells someone how much money they have in the bank.
El saldo de una cuenta le dice a alguien cuánto dinero tiene en el banco.

A *debt* is an amount of money that is owed to someone.
Una deuda es una cantidad de dinero que se le debe a alguien.

If the account has a *negative account balance* it means there is a *debt*.
Si la cuenta tiene un saldo negativo significa que hay una deuda.

Here is their account balance in July. Two students described it in different ways.

Alma: *They had an account balance of -\$100.*
Miko: *They had a debt of \$100.*

Month	Account Balance (\$)
July	-100

1. Decide whether you agree with Alma, Miko, or both.
2. Show or describe your thinking in writing. Use pictures, diagrams, words, and/or numbers to support your thinking.
3. Be prepared to defend your position.

Decide (<i>decidir</i>)	Defend (<i>defender</i>)
I agree with . . .	The claim makes sense because . . .

Name: _____ Date: _____ Period: _____

Inequalities in Context

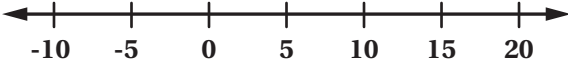
What I Notice	When I select either side of the line . . .	When I slide the point . . .
What I Wonder	Use what you noticed to help your thinking.	

Use these sentence frames if it helps you with your thinking.

- When I select to the left of the point, _____ changes on the number line.
- When I select to the right of the point, _____ changes on the number line.
- When I slide the point to the left, _____ changes on the number line.
- When I slide the point to the right, _____ changes on the number line.
- How do I . . . ?
- What happens when . . . ?
- Is it always true that . . . ?

Name: _____ Date: _____ Period: _____

Solutions to an Inequality

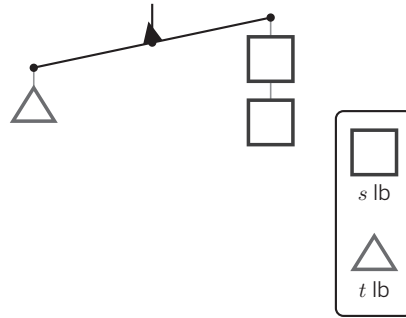
Inequality	Meaning (in your own words)
	
<div data-bbox="618 877 1000 1024" style="border: 1px solid gray; border-radius: 15px; padding: 10px; display: inline-block;"> <p>solution to the inequality</p> </div>	
Examples	Non-Examples

Name: _____ Date: _____ Period: _____

Many-Variable Inequalities

Which inequality represents this hanger?

- A. $t < s$
- B. $t < 2s$
- C. $t > 2s$
- D. $t = 2s$



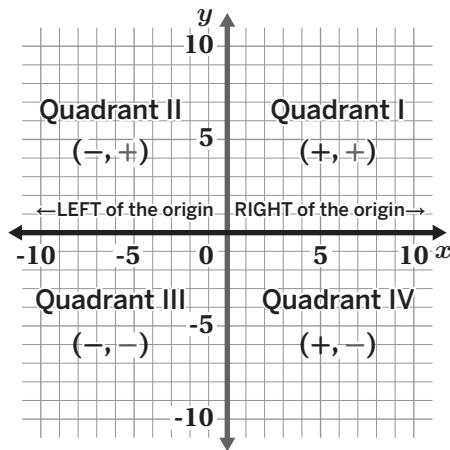
The _____ of the hanger has _____ so I can represent it with ____.

The _____ of the hanger has _____, so I can represent it with _____.

Because the _____ is heavier, I can use the inequality _____ to represent this hanger.

Name: _____ Date: _____ Period: _____

Find That Sand Dollar



(x, y)

+ means positive
- means negative

The sand dollar is to the _____ of the origin, so the x -coordinate is _____.
(right / left) (positive / negative)

The sand dollar is _____ the origin, so the y -coordinate is _____.
(above / below) (positive / negative)

The sand dollar is in Quadrant _____ because . . .
(I / II / III / IV)

Word bank	
English	Español
coordinate plane	plano de coordenadas
left	izquierdo/a
negative	negativo/a
positive	positivo/a
right	derecho/a
quadrant	cuadrante
ordered pair	par ordenado
origin	el origen
x -coordinate	coordenada x
y -coordinate	coordenada y

Name: _____ Date: _____ Period: _____

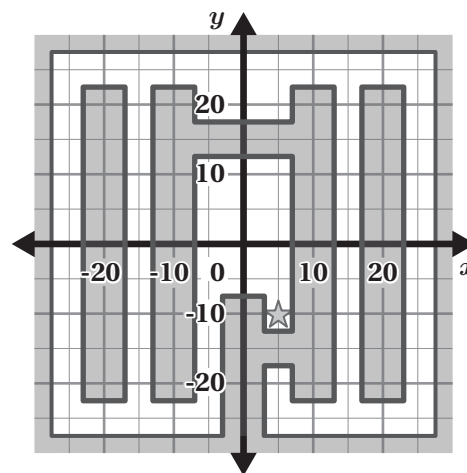
More Mazes

1. Decide whether each statement is correct or incorrect.
2. Justify your thinking.
3. Be prepared to defend your position.

Felipe

Annika

The *star's* coordinates are (1, -2). The *coordinates* are (1, -10)



<p>Felipe is _____ (correct / incorrect) because . . .</p>	
<p>Annika is _____ (correct / incorrect) because . . .</p>	

Use these sentence frames if it helps with your thinking.

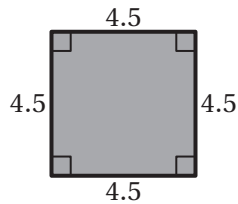
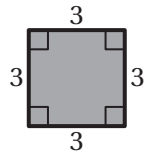
- The graph goes by _____ so . . .
- The scale of the graph is . . .

Name: _____ Date: _____ Period: _____

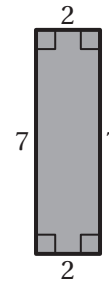
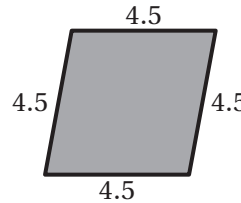
A Polygon

Squares (cuadrícula)

Examples



Non-examples



Did Vicente make a square?

Vicente _____ make a square. I know this because...
(*did / did not*)

Word bank

Word bank							
English	horizontal	polygon	sides	square	straight	unit	vertical
Español	horizontal	polígono	lados	cuadrado	recto	unidad	vertical

Warm-Up



Directions: Make copies and pre-cut. Give each student the appropriate support.

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Fill in the blanks or circle the correct word to write a story about the temperature over the course of the day.

When Imani woke up, the temperature was ____ degrees outside. The temperature decreased/increased for ____ hours when it reached a minimum/maximum of ____ degrees at _____. Then it rose/dropped sharply for the next ____ hours.

Fill in the blanks to write a story about the temperature over the course of the day.

When Imani woke up, the _____ was ____ degrees outside. The temperature _____ for ____ hours when it reached a _____ of ____ degrees at _____. Then it _____ sharply for the next ____ hours.

Word bank				
English	dropped	increased	maximum	temperature
Español	bajó	incrementó	máximo	temperatura

Fill in the blanks to write a story about the temperature over the course of the day.

When Imani woke up, the _____. The temperature _____ when it reached a _____ degrees at _____. Then it _____ for the next ____ hours.

Word bank				
English	dropped	decreased	increased	maximum
Español	bajó	decreció	incrementó	máximo

Name: Date: Period:

Words With Multiple Meanings

Draw a picture or write in words to show one or more math meanings and another meaning of the term.

Math meaning(s)

center

Another meaning

Name: Date: Period:

Words With Multiple Meanings

Draw a picture or write in words to show one or more math meanings and another meaning of the term.

Math meaning(s)

mean

Another meaning

Name: Date: Period:

Words With Multiple Meanings

Draw a picture or write in words to show one or more math meanings and another meaning of the term.

Math meaning(s)

median

Another meaning

Math Habits of Mind: Hábitos mentales matemáticos

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I can apply the math that I know to solve real-world problems, make assumptions and revise my thinking as needed.

Puedo poner en práctica mis conocimientos matemáticos para resolver problemas del mundo real, formulando hipótesis y modificando mi razonamiento según sea necesario.

I can select an appropriate tool to help me solve problems.

Puedo seleccionar una herramienta adecuada que me ayude a resolver problemas.

I can communicate my thinking and solutions clearly to others.

Puedo comunicar mi razonamiento y soluciones claramente a los demás.

I can look for structure or patterns to help me solve problems.

Puedo buscar estructuras o patrones que me ayuden a resolver problemas.

I can look for repeated calculations and other repeated steps to make generalizations.

Puedo buscar cálculos y otros pasos repetidos para hacer generalizaciones.

Questions and Sentence Frames

Why did you choose this habit of mind?

Did you choose any others? Why or why not?

What part of the Activity reminded you of this habit of mind?

Can you tell me more?

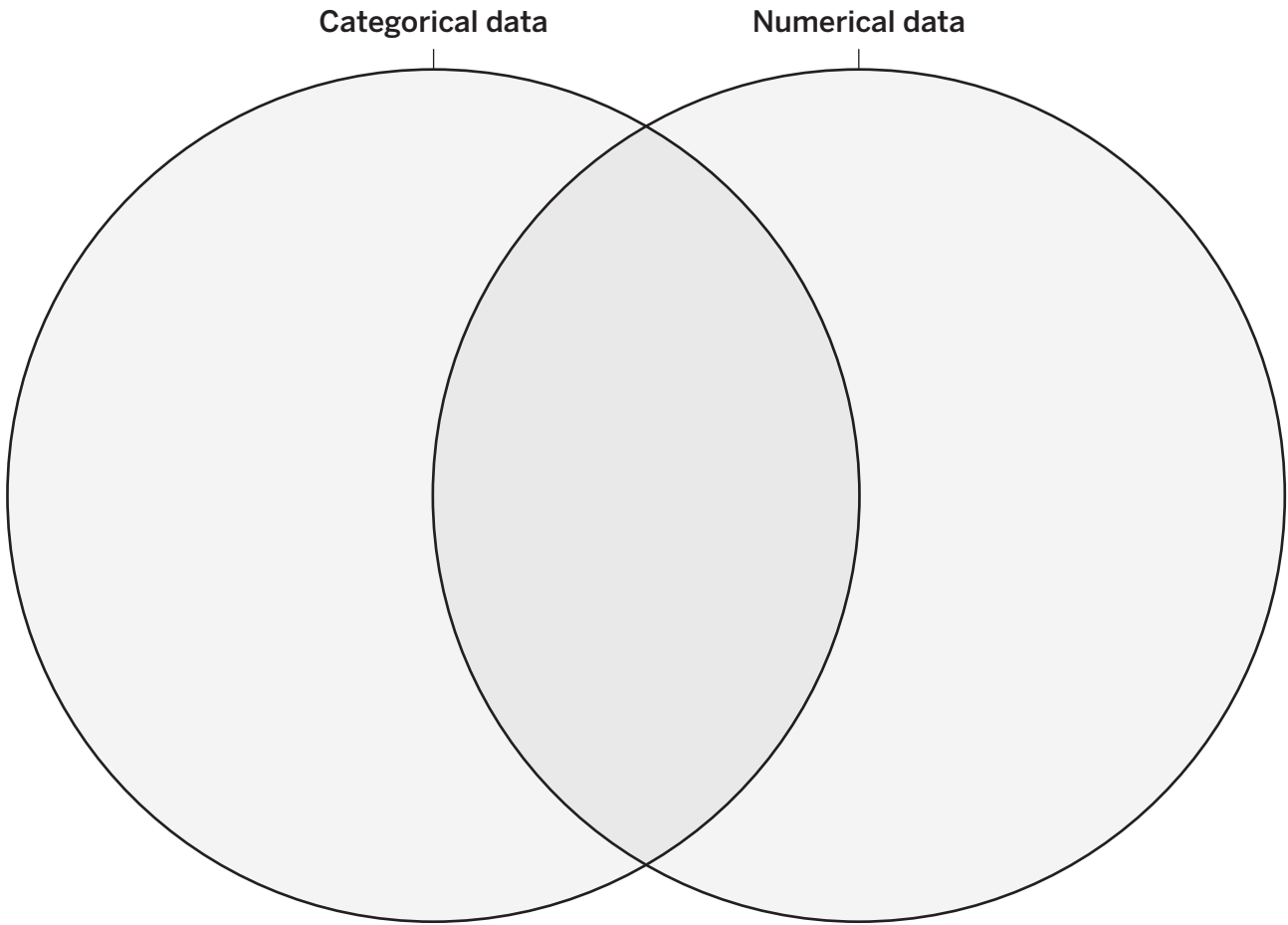
I chose this habit of mind because . . .

I also chose _____ because . . .

In the Activity, I . . .

Name: Date: Period:

Categorical and Numerical Data



Compare your Venn diagram with a partner and update your responses to be stronger and clearer.

Word bank				
English	category	gather	number	question
Español	categoría	recolectar	número	pregunta

Name: Date: Period:

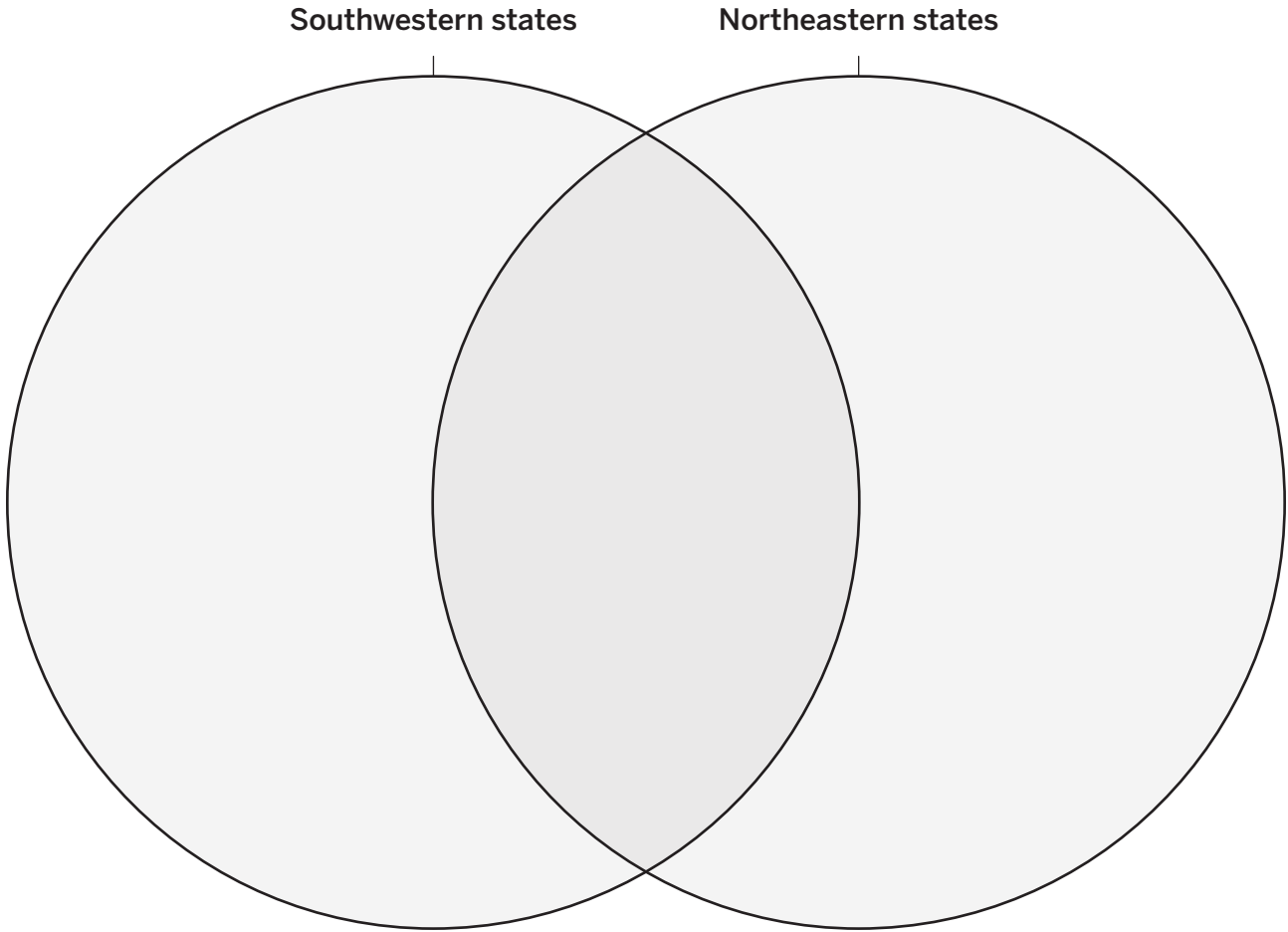
Dot Plots

<p>Definition (in your own words)</p>	<p>Characteristics</p>
<div style="border: 1px solid gray; border-radius: 15px; padding: 10px; display: inline-block; background-color: #f0f0f0;"> <p><u>dot plot</u></p> </div>	
<p>Examples</p>	<p>Non-examples</p>

Word bank				
English	data	dots	gaps	groups
Español	datos	puntos	espacios	grupos

Name: Date: Period:

Minimum Hourly Wage



Word bank				
English	greater than	less	maximum	minimum
Español	mayor que	menor que	máximo	mínimo

Name: _____ Date: _____ Period: _____

Comparing Dot Plots

1. Decide who you think is correct.
2. Show or describe your thinking in writing. Use pictures, diagrams, words, and/or numbers to support your thinking.
3. Be prepared to defend your choice.



Axel

“I think \$7.25 is the center because it represents the most number of states.”

Zoe

“I think \$7.25 is too low because some states have a higher minimum wage.”

I _____ with (agree / disagree) Axel because . . .	
I _____ with (agree / disagree) Zoe because . . .	

Word bank				
English	center	high	low	spread
Español	centro	alto	bajo	dispersión

Comparing Regions

1. Read Tyrone and Mayra's arguments.
2. Choose your position and decide which students' work you agree with more.
3. Be prepared to defend your position.

Tyrone

Wages would be more fair in the future if both histograms had the same center.

Mayra

Wages would be more fair in the future if both histograms had the same spread.

I _____ with (agree / disagree) Tyrone because . . .	If the histograms have the same center . . .
I _____ with (agree / disagree) Mayra because . . .	If the histograms have the same spread . . .

Word bank					
English	Español	English	Español	English	Español
higher	más alto	lower	más bajo	rent	alquiler
hourly	cada hora	minimum	mínimo	wage	salario

Mean as a Statistic

Mean Number of Tickets	The <u>mean</u> , or average, is the number of tickets each friend gets if the tickets are distributed equally.
Mean Number of Brownies	The <u>mean</u> , or average, is the number of . . .

Consider Omari’s work.

- Identify any correct thinking.
- Identify any incorrect or unclear thinking.
- Write a question to help Omari see how the work can be improved, or create a revised response.

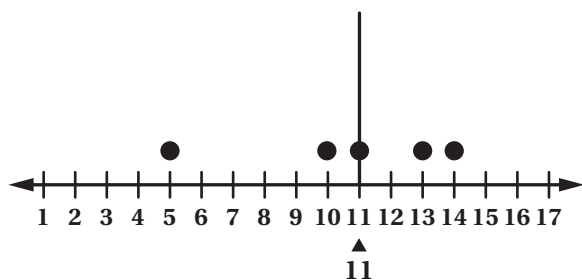
Correct thinking	
Incorrect / Unclear thinking	
Create correct and clear solution	I would tell Omari . . .

Name: _____ Date: _____ Period: _____

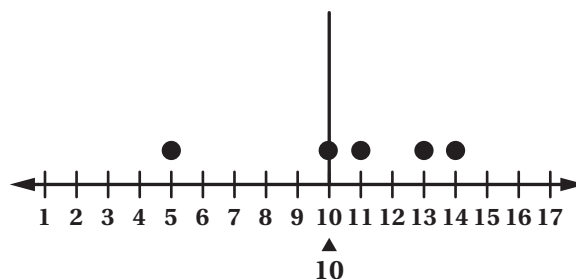
Put This Property to Work

1. Decide whether each student's mean is correct or incorrect.
2. Justify your thinking.
3. Be prepared to defend your position.

Demetrius



Josiah



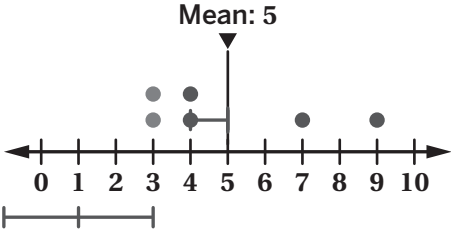
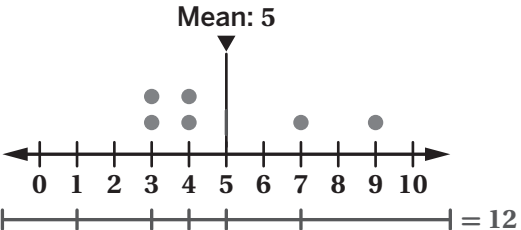
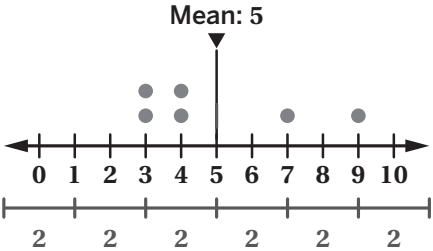
Demetrius is _____ (correct / incorrect) because ...	
Josiah is _____ (correct / incorrect) because ...	

Use these sentence frames if it helps with your thinking.

- The sum of the absolute deviations to the _____ of the mean is ...
 (left / right)
- The sums _____ equal so ...
 (are / are not)

Name: _____ Date: _____ Period: _____

Calculating MAD

<p>Step 1:</p>	<p>The first thing Polina did was . . .</p>	 <p>Mean: 5</p>
<p>Step 2:</p>	<p>The next thing Polina did was . . .</p>	 <p>Mean: 5</p> <p>= 12</p>
<p>Step 3:</p>	<p>Finally, Polina . . .</p>	 <p>Mean: 5</p>

Word bank			
English	absolute deviation	mean (average)	mean absolute deviation (MAD)
Español	desviación absoluta	media (promedio)	desviación media absoluta (DMA)

Actor Salaries

Tay

Pay in acting is unequal because the highest paid women are paid less than the highest paid men.

Cho

Pay in acting is not unequal because Charlotte Johnson made more than Will Myth in 2019.

Review the statistics you calculated. Write them in the table provided.

Highest Paid Women		Highest Paid Men	
Mean	MAD	Mean	MAD
_____ million	_____ million	_____ million	_____ million

- The mean of women actors is _____ than the mean of men actors.
(greater / less)
- The MAD of women actors is _____ than the MAD of men actors.
(greater / less)

Word bank			
English	Español	English	Español
consistent	consistente	measure of spread (or variability)	medidas de dispersión (o variabilidad)
mean absolute deviation (MAD)	desviación media absoluta (DMA)	statistic	estadística
mean (average)	media (promedio)	typical	típico
measure of center	medidas de centro		

Name: Date: Period:

Many Medians

Yona launched her car 7 times and recorded the distances.

She calculated the median but made a mistake.

Yona

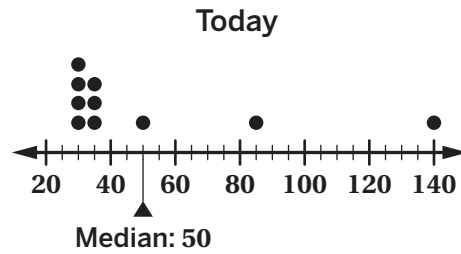
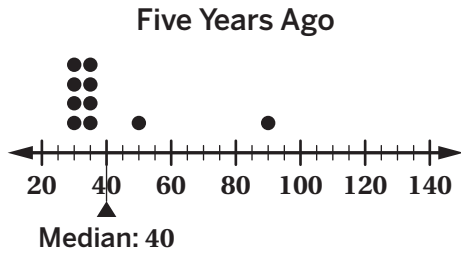
~~19~~, ~~14~~, 18, **28**, 21, ~~12~~, ~~14~~

Critique	Explain Yona's strategy.	Yona found . . .
Correct	What would you recommend Yona change in her work?	I would . . .
Clarify	What is the median distance of this data set?	

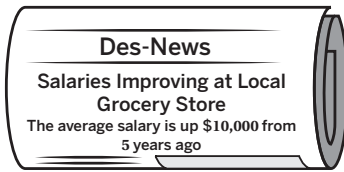
Word bank			
English	Español	English	Español
increasing order	orden creciente	middle	medio
median	mediana		

Which Would You Report?

Employee Salaries (thousands of dollars)



Headline 1



Headline 1 is more accurate because it compares the _____ value of the salaries . . .
(*mean / median*)

Headline 2



Headline 2 is more accurate because it compares the _____ salaries . . .
(*mean / median*)

Word bank

English	Español	English	Español
headline	titular	median	mediana
mean	media	salary	salario

Name: _____ Date: _____ Period: _____

Introduction to Quartiles

Meaning

Q1, Q2, Q3

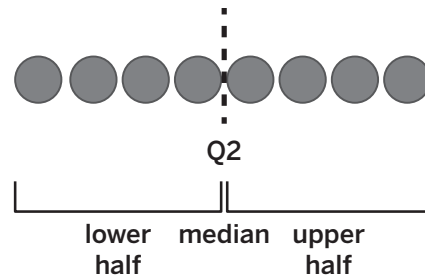
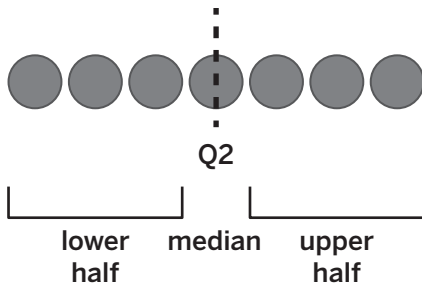
Q1:

Q2:

Q3:

quartiles

cuartiles

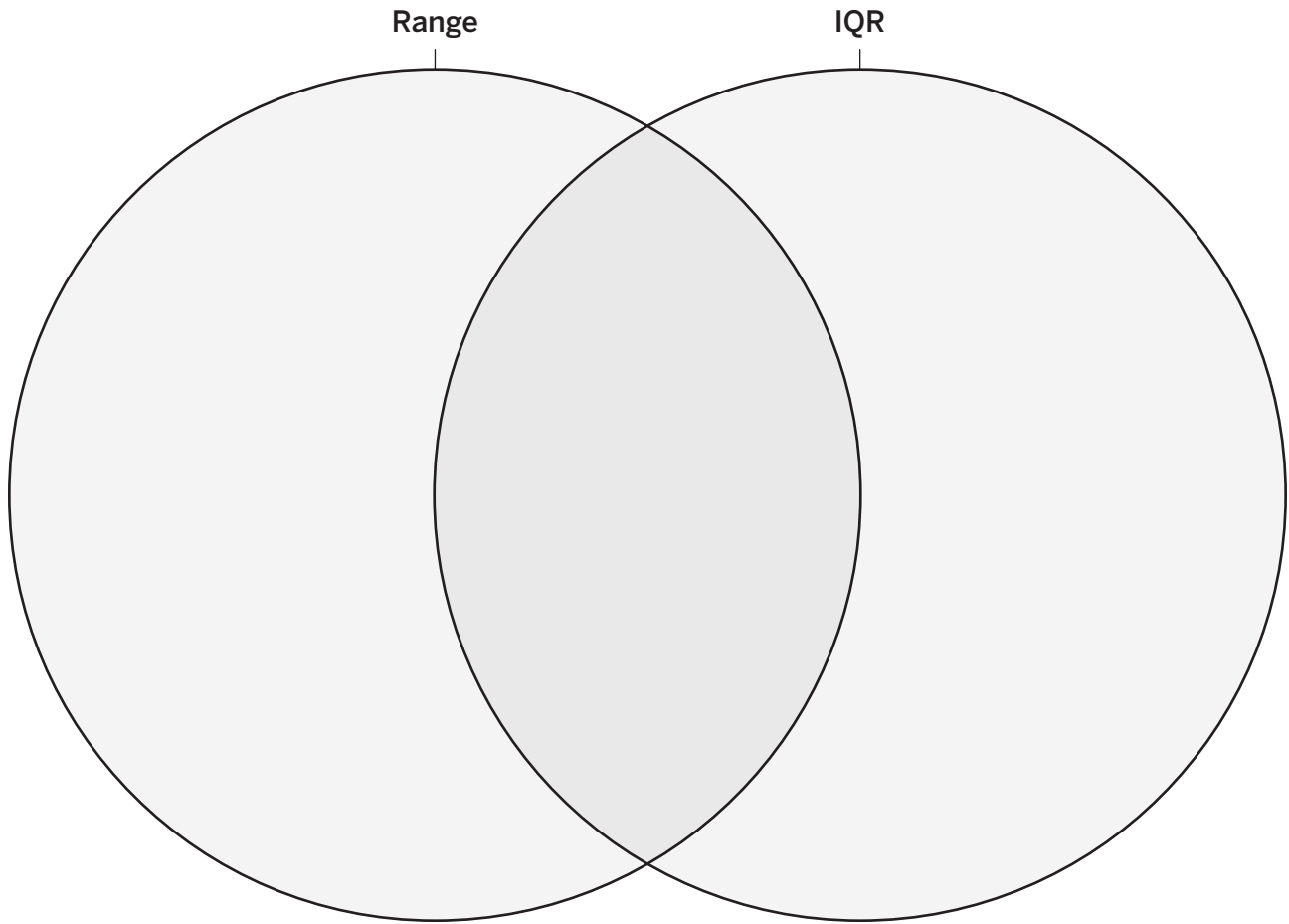


Odd Number of Data Points

Even Number of Data Points

Name: _____ Date: _____ Period: _____

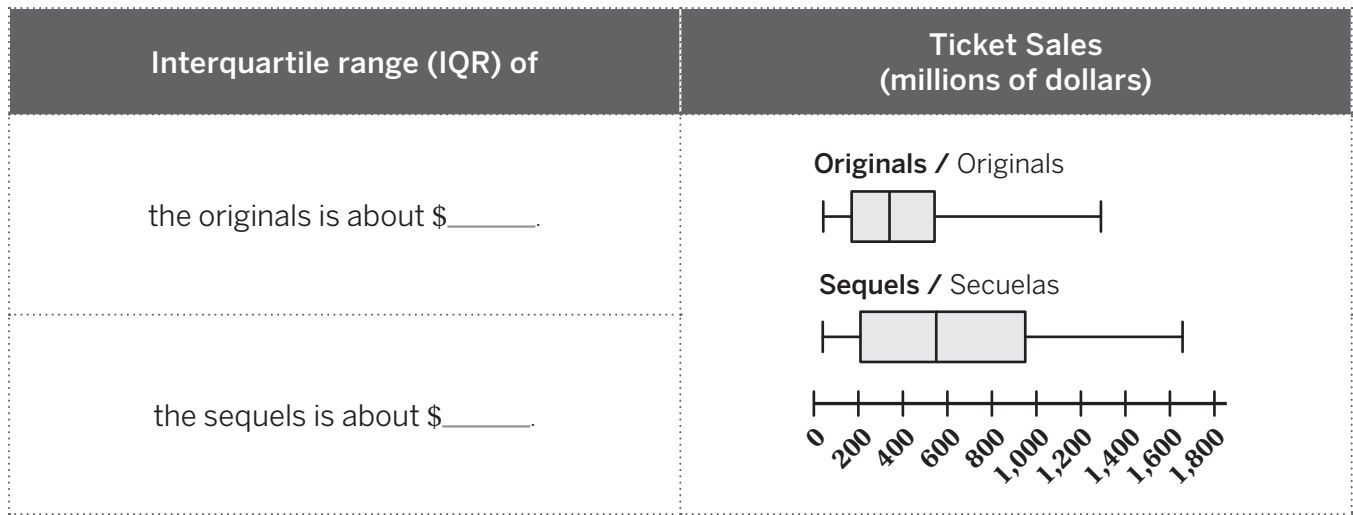
Measures of Spread



Word bank					
English	Español	English	Español	English	Español
Interquartile range	rango intercuartílico (RQ)	quartile	cuartil	variability	variabilidad
maximum	máximo	range	rango		
minimum	mínimo	spread	dispersión		

Name: _____ Date: _____ Period: _____

Movie Reviews and Ticket Sales



IQRs tell me about the _____ of the data.

The middle of ticket sales for _____ is more spread out than the middle of ticket sales for _____
(sequels / originals)

_____ (sequels / originals)

This tells me that the ticket sales for _____ are more consistent than the ticket sales for _____
(sequels / originals)

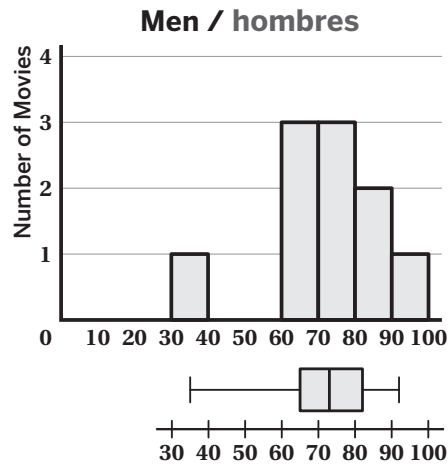
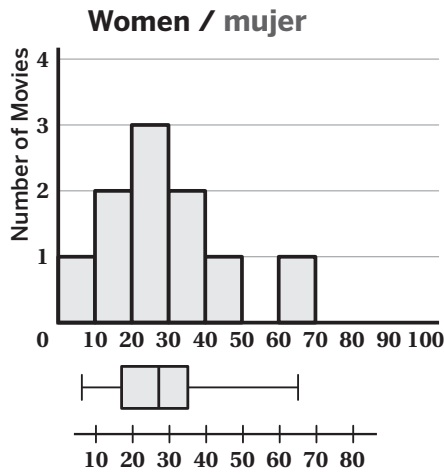
_____ (sequels / originals)

Word bank					
English	Español	English	Español	English	Español
consistent	consistente	originals	originales	spread	dispersión
interquartile range	rango intercuartil	quartile	cuartil		
middle	medio	sequels	secuelas		

Name: _____ Date: _____ Period: _____

2010 Movies

Percent of Words: / Porcentaje de Palabras:



Men speak more in these movies than women!

Cho

Men don't speak more because 65% of the words in Alice's Whimsical Realm were spoken by women. That's more than half!

Tay

I agree with _____
(Cho / Tay)

Because . . .

They can measure _____ of each data set to settle their dispute.
(mean / median)

Calculate the median percentages.
men: _____ women: _____

Justify your answer using statistics:

Word bank					
English	dispute	median	percentages	speak	top grossing movies
Español	disputar	mediana	porcentajes	hablar	películas más taquilleras