desmos **Science Mom Lesson 1**

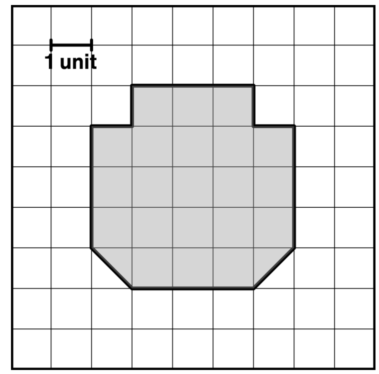
Unit 6.1, Lesson 1: Notes Name ____________________________

My Notes

1. Explain what the *area* of a shape is.

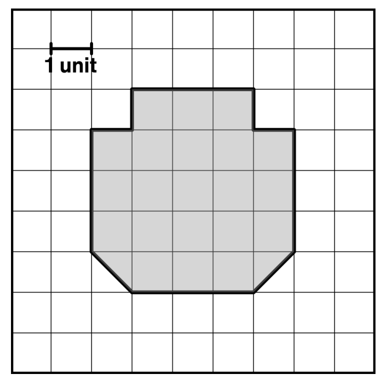
2.1 Determine the area of the shape.

Show or describe your thinking.

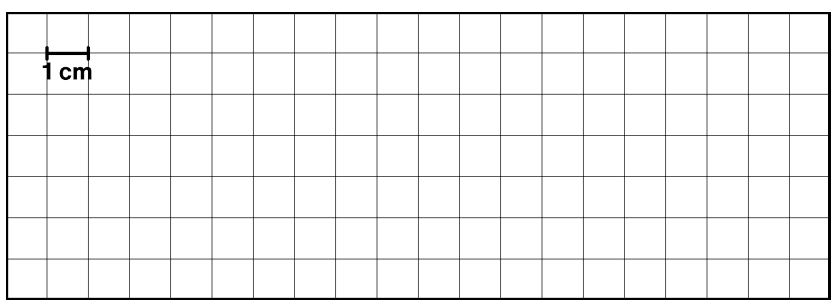


2.2 Determine the area of the same shape in a different way.

Show or describe your thinking.



3. Draw a shape that has an area of 17 square centimeters.



Summary

- [ ] I can explain what *area* is.
- [ ] I can describe strategies for determining the area of a non-rectangular shape.

Science Mom Lesson 2

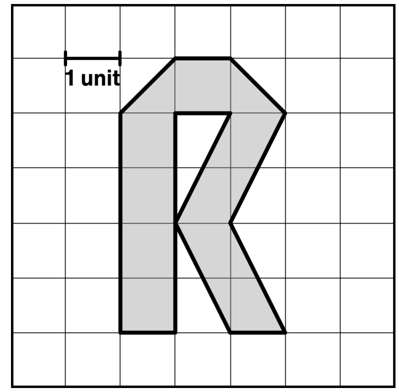
Unit 6.1, Lesson 2: Notes

Name ________________________________

My Notes

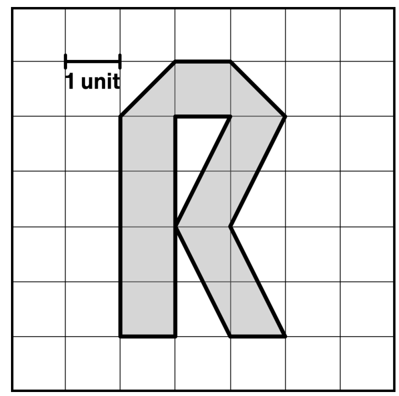
1.1 Determine the area of the letter.

Show or describe your thinking.



1.2 Determine the area of the same letter in a different way.

Show or describe your thinking.



2. Describe your favorite strategy so far. If you learned this strategy from another student, write that student's name.

Summary

☐ I can determine the area of a non-rectangular shape using a variety of strategies.

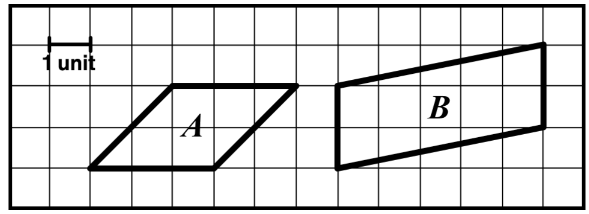
☐ I know that decomposing a shape and rearranging the pieces keeps the area the same.

desmos Science Mom Lesson 3

Unit 6.1, Lesson 3: Notes Name ______________________________

My Notes

1. Determine the base, height, and area of each parallelogram.



Parallelogram	Base (units)	Height (units)	Area (sq. units)
A			
B			

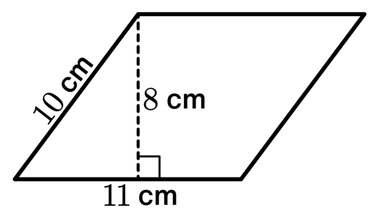
2. Write a formula that can be used to determine the area of any parallelogram. Show what each part of the formula means.

3. Determine the base, height, and area of the parallelogram.

Base: ______ centimeters

Height: ______ centimeters

Area: ______ square centimeters



Summary

- ☐ I can use different strategies to determine the area of a parallelogram.
- ☐ I can identify the base and height of a parallelogram on a grid.
- ☐ I can explain how to calculate the area of any parallelogram using its base and height.

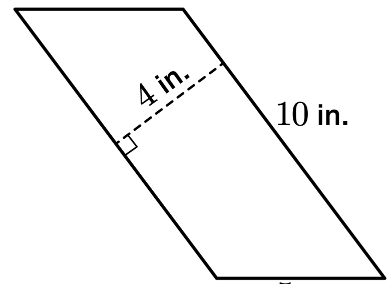
desmos Science Mom Lesson 4

Unit 6.1, Lesson 4: Notes Name ______________________

My Notes

1. Draw a parallelogram. Then draw and label segments showing a base and a height for your parallelogram.

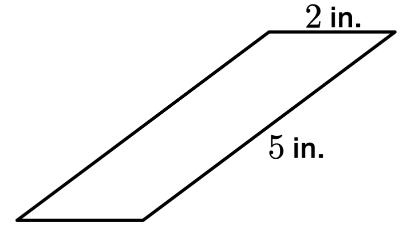
2. Calculate the area of the parallelogram.
Use appropriate units.



The area of this parallelogram is 6 square inches.

3.1 Draw a height of the parallelogram on the diagram.

3.2 Calculate the length of the height you drew.



Summary

- ☐ I can identify a base and height of a parallelogram without a grid.
- ☐ I can calculate the area of a parallelogram or the length of a missing base or height.

desmos Science Mom Lesson 5

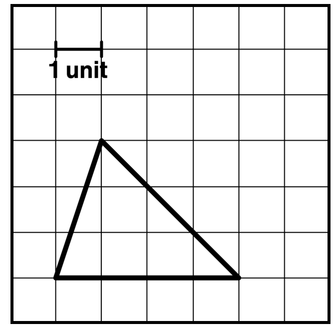
Unit 6.1, Lesson 5: Notes

Name ______________________________

My Notes

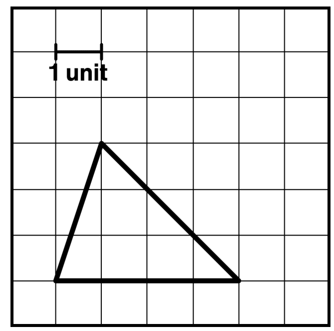
1.1 Determine the area of the triangle.

Show or describe your thinking.



1.2 Determine the area of the triangle in a different way.

Show or describe your thinking.



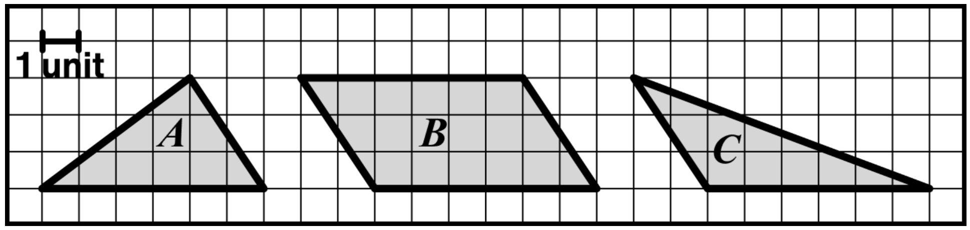
2. What are some things to keep in mind when determining the area of a triangle?

Summary

☐ I can use different strategies to determine the area of a triangle.

Unit 6.1, Lesson 6: Notes Name ______________________________

My Notes



1. Write the base, height, and area of each shape in the table.

Shape	Base (units)	Height (units)	Area (sq. units)
A			
B			
C			

2. Write a formula that can be used to determine the area of any triangle.

3. How is determining the area of a triangle similar to determining the area of a parallelogram? How is it different?
   - Similar:
   - Different:

Summary

- [ ] I can connect the area of a triangle and a parallelogram with the same base and height.
- [ ] I can explain how to calculate the area of any triangle using its base and height.

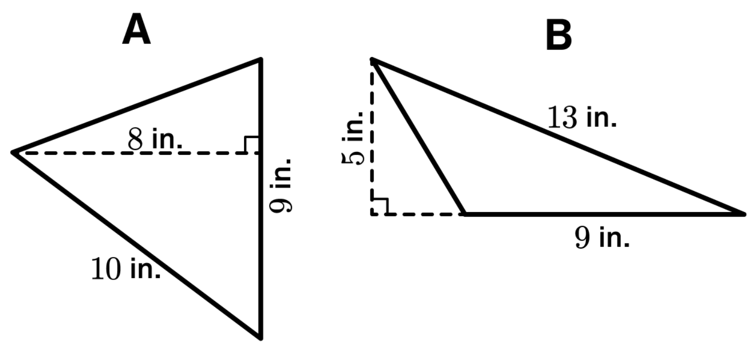
desmos Science Mom Lesson 7

Unit 6.1, Lesson 7: Notes Name ____________________

My Notes

1. Draw a triangle. Label its base and height.

2. Write the base, height, and area of each triangle in the table.



Triangle	Base (in.)	Height (in.)	Area (sq. in.)
A			
B			

3. Write some advice for someone to keep in mind when they are finding the area of a triangle.

Summary

☐ I can identify a base and height of a triangle without a grid.

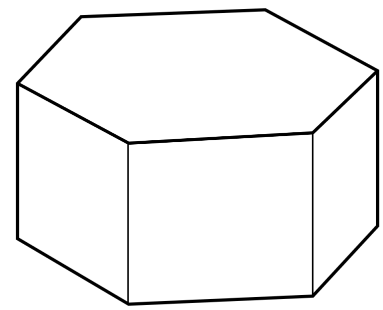
☐ I can calculate the area of any triangle.

Unit 6.1, Lesson 10: Notes Name ______________________________

My Notes

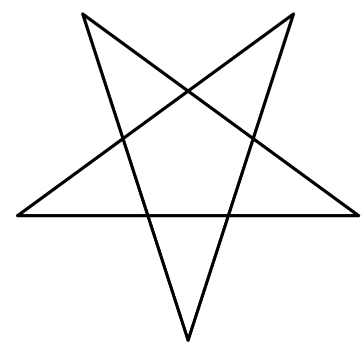
1.1 What is the name of this polyhedron?

1.2 Describe the faces of this polyhedron.



2. If this net were folded, would it make a pyramid, prism, or neither?

Explain your thinking.



3. What are some things to keep in mind when determining whether a net will fold into a prism, pyramid, or neither?

Summary

- ☐ I can describe the faces of a polyhedron.
- ☐ I can compare and contrast prisms and pyramids.
- ☐ I know what a net is and how it is related to a polyhedron.

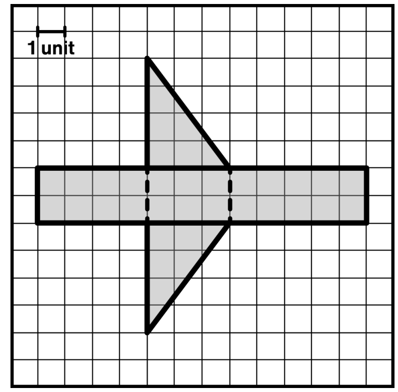
desmos Science Mom Lesson 9

Unit 6.1, Lesson 11: Notes Name ______________________________

My Notes

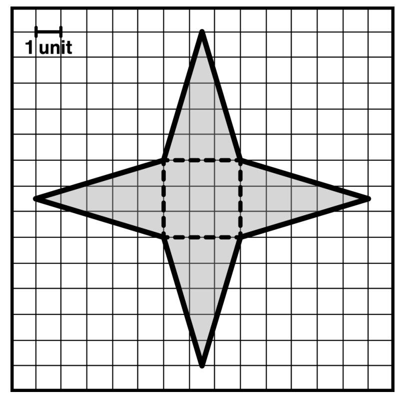
1.1 What polyhedron will this net create when folded?

1.2 What is its surface area?



2.1 What polyhedron will this net create when folded?

2.2 What is its surface area?



3. What are some things to keep in mind when calculating the surface area of a polyhedron?

Summary

- ☐ I can name a polyhedron.
- ☐ I can identify what kind of polyhedron will be created when a net is folded.
- ☐ I can calculate the surface area of a prism or pyramid using a net on a grid.

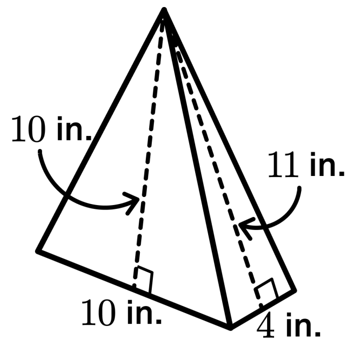
desmos Science Mom Lesson 10

Unit 6.1, Lesson 12: Notes Name ____________________

My Notes

Here is a rectangular pyramid and its net.

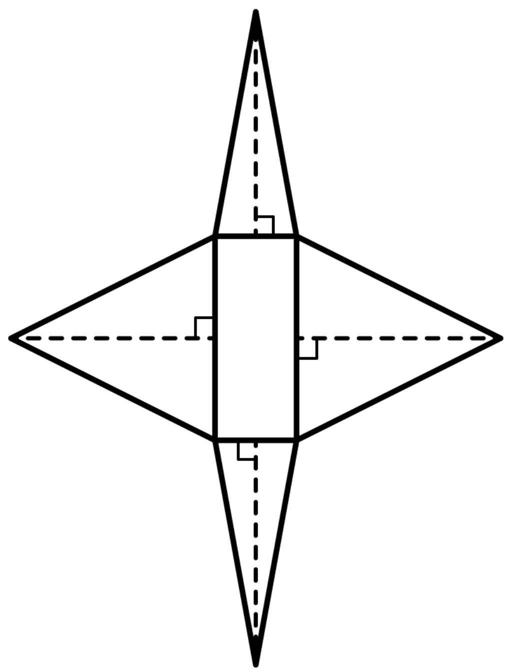
Rectangular Pyramid



1.1 Label the net with the measurements of each face.

1.2 Calculate the surface area.

Net



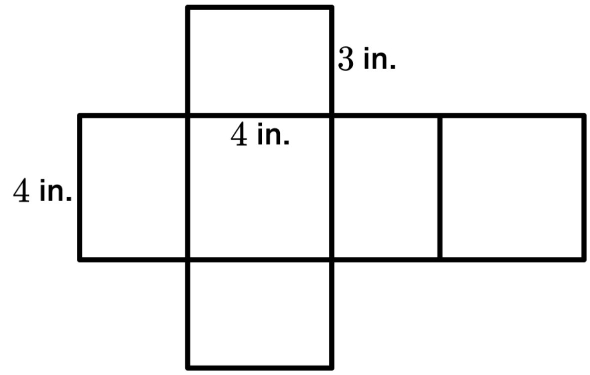
Summary

- ☐ I can match a polyhedron with its net.
- ☐ I can calculate the surface area of a prism or pyramid from a drawing and describe my strategy.

Unit 6.1, Lesson 13: Notes Name ______________________________

My Notes

1. What do you need to know when designing a take-out container?



2. Describe a food that might fit in this container.

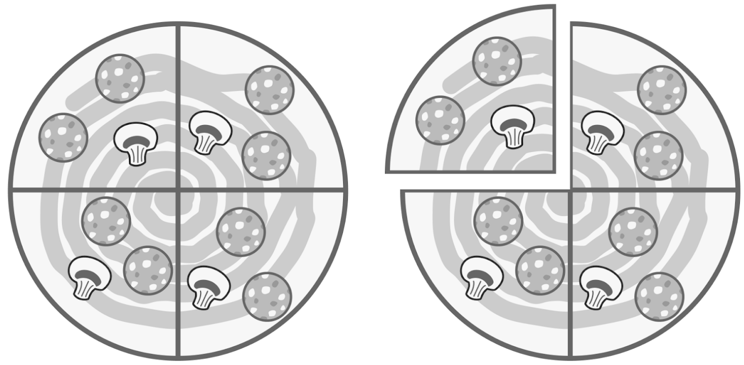
3. Calculate how much material you'll need to make the container.

Summary

- ☐ I can design a net for a three-dimensional object.
- ☐ I can calculate surface area to answer problems in context.

Unit 6.2, Lesson 2: Notes Name ______________________________

My Notes



1. Fill in the blanks based on the ratios you see above.

- For every ____ mushrooms, there are ____ ________________.
- The ratio of pepperoni to mushrooms is _____ to _____.
- The ratio of mushrooms to pepperoni is _____ : _____.
- pizzas : mushrooms

  _____ : _____

2. Circle the false statement.

   A. The ratio of mushrooms to pepperoni is $1 : 2$.

   B. There are 8 pepperoni for every 1 pizza.

   C. For every 4 mushrooms, there are 2 pizzas.

   Edit the false statement to make it true.

Summary

☐ I can explain what a ratio is.

☐ I can describe ratios in many different ways.

Unit 6.2, Lesson 3: Notes Name ______________________________

My Notes

1. Explain what *equivalent ratios* are in your own words.
   Give at least one example.

Rice and Peas

Rice and peas is a popular side dish from the Caribbean.

2. What do you need to make this dish for 12 people?

Ingredients
Serves 4 people

- 1 cup of long-grain rice
- 14 ounces coconut milk
- 15 ounces of kidney beans
- 3 pinches of thyme
- $\frac{1}{2}$ teaspoon of ground allspice

____ cups of long-grain rice

____ ounces coconut milk

____ ounces of kidney beans

____ pinches of thyme

____ teaspoons of ground allspice

3. Mio is making rice and peas for 8 people. She says she needs 18 ounces of coconut milk. Do you agree?

   Explain your reasoning.

Summary

☐ I can explain what equivalent ratios are.

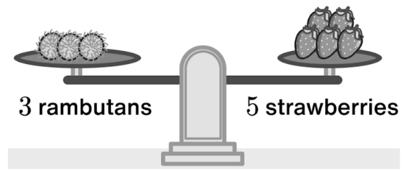
☐ I can create equivalent ratios by doubling, tripling, and halving in context.

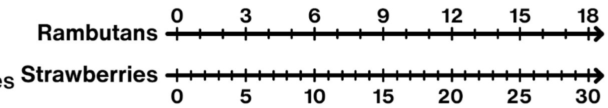
desmos Science Mom Lesson 14

Unit 6.2, Lesson 5: Notes Name ______________________________

My Notes

The scale balances with a ratio of 3 rambutans to 5 strawberries.





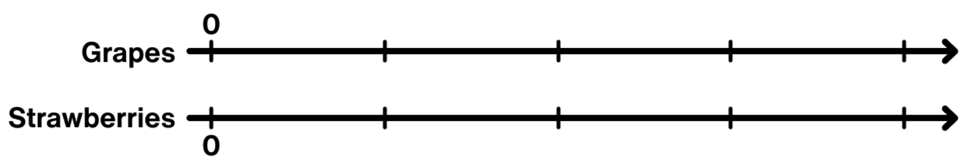
1.1 List several other equivalent ratios.

1.2 How many rambutans balance with 15 strawberries?

Circle where this is on the double number line.

A ratio of 12 grapes : 8 strawberries balances the scale.

2.1 Complete the double number line to represent this situation.



2.2 Use the double number line to complete the table.

Grapes	Strawberries
12	8
	24
18	

Summary

☐ I can explain how to use a double number line diagram to find equivalent ratios.

☐ I can use double number line diagrams to solve problems.

Science Mom Lesson 15

Unit 6.2, Lesson 6: Notes

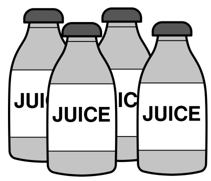
Name ____________________________________

My Notes

1. Explain what *unit price* means in your own words. Give at least one example.

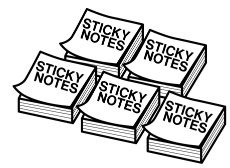
Calculate the unit price of each item.

2.1



$6

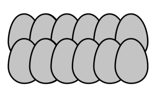
2.2



$4

Answer each question. Show or explain your thinking.

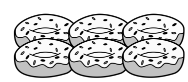
3.1



$3

How much for 8?

3.2



$9

How much for 5?

Summary

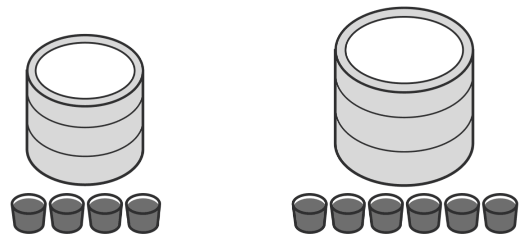
- ☐ I can use a double number line diagram or table to calculate a unit price.
- ☐ I can use unit prices to solve problems.

Unit 6.2, Lesson 7: Notes

Name ________________________________

My Notes

Mayra and Nicolas each made a shade of teal paint.



Mayra's Ratio
4 ounces teal
2 gallons white

Nicholas's Ratio
6 ounces teal
4 gallons white

1. Which ratio will make a darker teal? Explain your reasoning.

2. List several strategies for comparing ratios like the ones in Problem 1.

3. Mayra said, "They would be the same shade of teal because $4 + 2 = 6$ and $2 + 2 = 4$." What would you say to Mayra to help her see her mistake?

Summary

☐ I can use strategies to compare ratios in context.

Unit 6.2, Lesson 8: Notes

Name ____________________

My Notes

1. Explain what *unit rate* means in your own words. Give at least one example.

Zhang Shuang walked 50 meters on his hands with a soccer ball between his legs in about 25 seconds. Christopher Irmscher ran 100-meter hurdles in about 15 seconds while wearing flippers.

2.1 Who was moving faster: Zhang or Christopher? Explain your reasoning.

2.2 Terrance can run 3 meters per second. Does he move faster than Zhang? Faster than Christopher?

Show or explain your thinking.

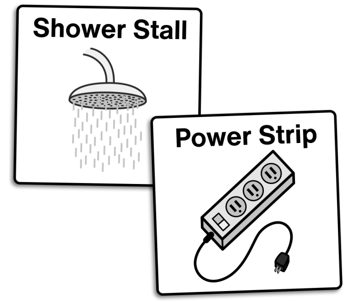
Summary

- ▢ I can calculate the speed of an object.
- ▢ I can determine which object is moving faster and explain how I know.

Unit 6.2, Lesson 9: Notes Name ____________________

My Notes

FEMA (Federal Emergency Management Agency) has a list of items that cities should prepare in case of a disaster.



For a town of 600 people, FEMA recommends 24 shower stalls and 30 power strips.

1. At this rate, what would FEMA recommend for each city?

City	Population	Shower Stalls	Power Strips
Blue Ridge, Georgia	600	24	30
Charlestown, Utah	300		
Whitney, Texas	2 000		
Burlington, Vermont	50 000		

2. Show or describe a strategy for determining the number of power strips recommended for Burlington, Vermont.

3. Show or describe a different strategy for the same problem.

Summary

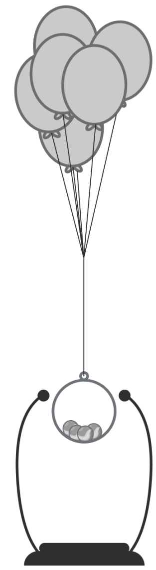
▢ I can use tables to determine missing values in a situation that involves large numbers.

desmos Science Mom Lesson 19

Unit 6.2, Lesson 10: Notes Name ____________________

My Notes

Red balloons float orange marbles at a ratio of $6:4$.

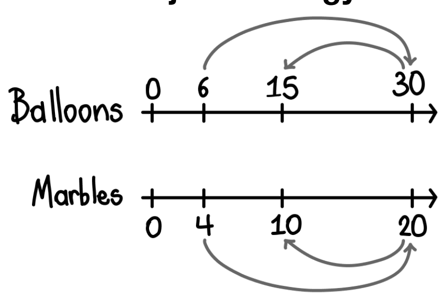


1. How many marbles can 24 balloons float?

2. How many balloons are needed to float 10 marbles?

3. Here are two students' work for Problem 2. Describe each strategy.

Daeja's Strategy



Charlie's Strategy

Balloons	Marbles
6	4
1.5	1
15	10

Summary

☐ I can solve problems using tables and double number line diagrams.

☐ I can compare different strategies for determining missing values.

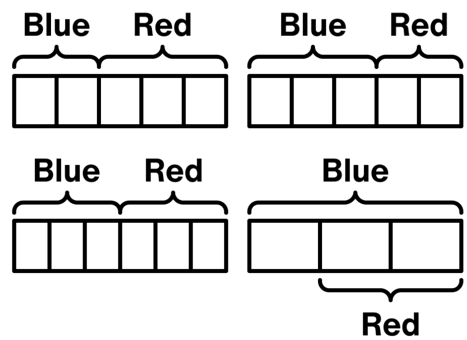
desmos Science Mom Lesson 20

Unit 6.2, Lesson 12: Notes Name ____________________

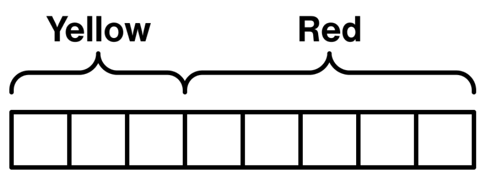
My Notes

Students are painting the lockers at their school. They are using a purple paint that has 3 parts blue paint for every 2 parts red paint.

1. Which tape diagram represents this paint mixture ratio? Explain how you know.



Faith is curious how much yellow and red paint she needs to make 40 cups of orange paint for her room. Here's how she started:



2.1 Fill in the numbers in each part of the tape diagram.

2.2 How much yellow and red paint does Faith need?

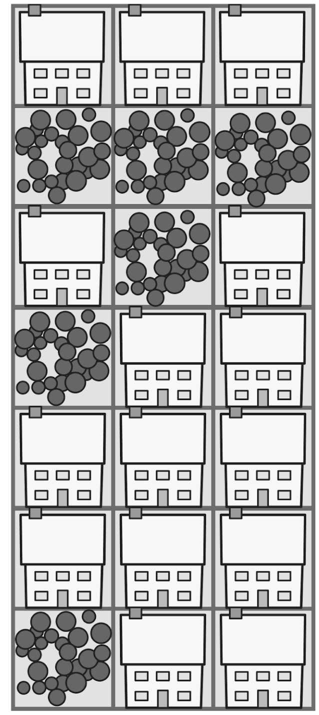
Summary

☐ I can use and interpret tape diagrams to solve problems involving part-part-whole ratios.

Unit 6.2, Lesson 13: Notes Name ____________________

My Notes

Here is one neighborhood in Metropolis. Metropolis's requirement for green space is 2 units of green space for every 5 units of building space.



1. Draw a tape diagram to represent this situation.

2. A new development has 35 units of land. How many units of building space can they build?

3. Brianna thinks a ratio of $3 : 4$ instead of $2 : 5$ would be better. If we use Brianna's ratio, how many units of the new development would be:

   - Building space?

   - Green space?

Summary

☐ I can create and use tape diagrams to solve problems involving part-part-whole ratios.

Unit 6.3, Lesson 1: Notes Name ______________________________

My Notes

1. Describe what each unit measures.

   Use “L” for length, “V” for volume, and “M” for mass or weight.

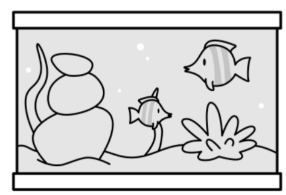
____ meters	____ liters	____ feet	____ pounds
____ gallons	____ inches	____ grams	____ cups
____ miles	____ tons	____ kilograms	____ quarts

2. Four of the units above measure length. Order them from smallest to largest.

Smallest __________, __________, __________, __________ **Largest**

3. Circle the units of measure you would use to measure the following fish tank.

Volume:	milliliters	gallons
Mass/Weight:	pounds	grams
Height:	inches	millimeters



Summary

- ☐ I can determine whether units measure length, area, mass/weight, or volume.
- ☐ I can compare different units of measure of length, volume, and mass/weight.
- ☐ I can connect units of measurement and measurements of everyday objects

Unit 6.3, Lesson 3: Notes Name ______________________________

My Notes

1 kg = $1\,000$ g	200 g ≈ 7 oz.	10 kg ≈ 22 lb.

Fill in each blank.

1.1 35 ounces is approximately _________ grams.

1.2 2500 grams is approximately _________ kilograms.

1.3 60 kilograms is approximately _________ pounds.

2. Binta's bird eats 3 pounds of bird food per month. Will this bag of bird food be enough for one month?

   Explain your thinking.

3. A macaw at a zoo eats 6 kilograms of food per month.

   About how many pounds is that?

Summary

☐ I can convert measurements from one unit to another in different measurement systems.

desmos Science Mom Lesson 24

Unit 6.3, Lesson 4: Notes Name ______________________________

My Notes

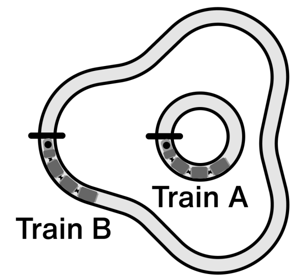
Here are two different ways to express the speed of a model train:

150 centimeters in 5 seconds 30 centimeters per second

1. Which of the speeds above is a *unit rate*?

2. Explain how you know the trains are going the same speed.

Train A	**Train B**
300 centimeters in 20 seconds	810 centimeters in 54 seconds



3. Which train is going faster? __________

Train C	**Train D**
90 centimeters in 15 seconds	3 meters in 1 minute

Explain your thinking.

Summary

☐ I can use the word *per* to describe unit rates.

☐ I can compare rates that are written in different units.

desmos Science Mom Lesson 25

Unit 6.3, Lesson 5: Notes Name ____________________

My Notes

A new flavor of soft serve costs 4 dollars for 10 ounces.

1. Complete the table.

2. Explain the meaning of each of the numbers you found.

Cost (dollars)	Weight (ounces)
4	10
1	
	1

3. How much does 6 ounces of soft serve cost?

4. How many ounces of soft serve can you buy with $\$5.00$?

Summary

☐ I can calculate and interpret the two unit rates for the same relationship.

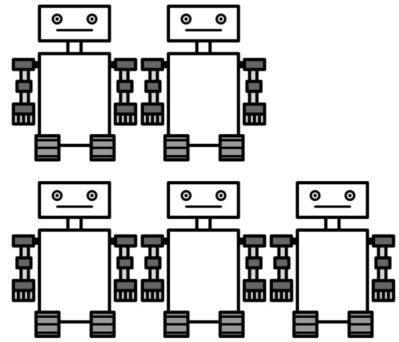
☐ I can choose which unit rate to use to solve a problem and explain my choice.

My Notes

It takes 40 ounces of paint to paint 5 tiny robots.

1. Complete the table.

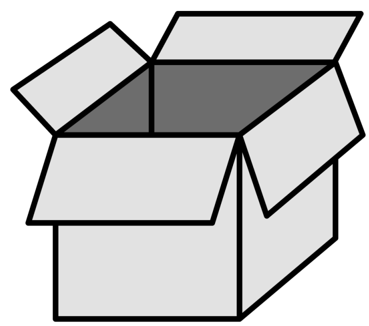
Robots	Paint (oz.)
5	40
3	
	72



2. If you know the number of ounces of paint you have, how would you determine the number of robots you can paint?

3. A factory can make 12 boxes in 3 minutes.
Complete the table for different numbers of boxes.

Boxes	Time (min.)
12	3
	5
40	
	1



Summary

☐ I know that you can multiply by a unit rate to go from one column to another in a table of equivalent ratios.

☐ I can use unit rates to complete a table of equivalent ratios.

Unit 6.4, Lesson 3: Notes Name ______________________________

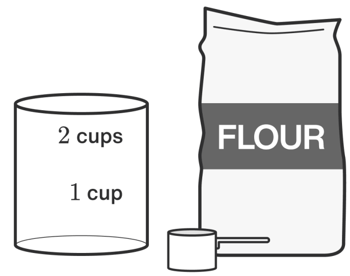
My Notes

1. Ali needs 2 cups of flour.

   They have a $\frac{1}{4}$-cup measuring scoop.

   How many scoops does Ali need?

   Make a drawing if it helps you with your thinking.



Maneli drew a diagram to represent "how many $\frac{1}{3}$s make 4."

$$\overbrace{\boxed{\tfrac{1}{3} \,\vdots\, \tfrac{1}{3} \,\vdots\, \tfrac{1}{3}}\boxed{\tfrac{1}{3} \,\vdots\, \tfrac{1}{3} \,\vdots\, \tfrac{1}{3}}\boxed{\tfrac{1}{3} \,\vdots\, \tfrac{1}{3} \,\vdots\, \tfrac{1}{3}}\boxed{\tfrac{1}{3} \,\vdots\, \tfrac{1}{3} \,\vdots\, \tfrac{1}{3}}}^{4}$$

2.1 Write at least one equation to represent Maneli's diagram.

2.2 Answer Maneli's question.

Summary

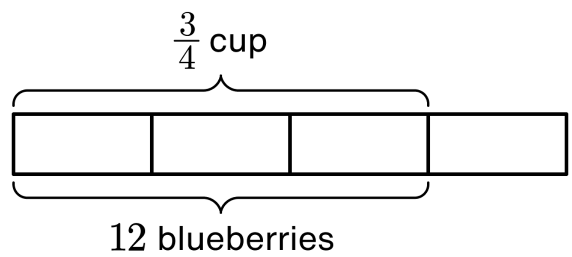
- [ ] I can connect situations, diagrams, and expressions that represent "how many groups?"
- [ ] I can use diagrams to represent and solve division problems asking "how many groups?" and explain my strategy.

Unit 6.4, Lesson 4: Notes Name ____________________

My Notes

1. Caasi picked 12 blueberries, which filled $\frac{3}{4}$ of a cup.

   How many blueberries fill 1 cup?



Imani is planting flowers to fill big and small planters.

2.1 6 flowers fill $\frac{2}{3}$ of a big planter. How many flowers fill 1 big planter?

Show or explain your thinking.

2.2 6 flowers fill $1\frac{1}{2}$ small planters. How many flowers fill 1 small planter?

Show or explain your thinking.

Summary

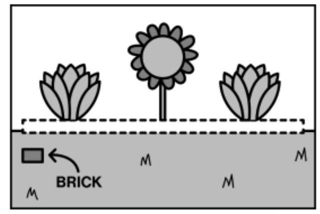
- ☐ I can connect situations, expressions, and tape diagrams that represent the same situation.
- ☐ I can use tape diagrams to represent and solve division problems when the answer is a fraction.

Unit 6.4, Lesson 5: Notes Name ________________________________

My Notes

1.1 You are lining a 3-foot-long garden with $\frac{2}{3}$-foot-long bricks.

Draw a tape diagram to represent $3 \div \frac{2}{3}$.

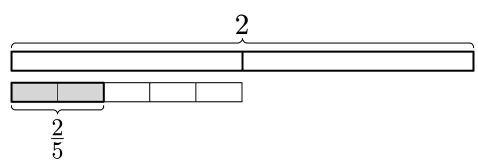
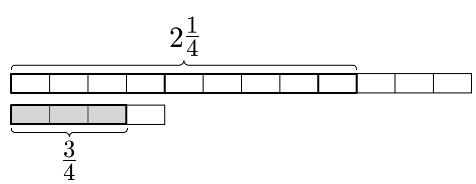


1.2 Yasmine says that you will need $4\frac{1}{3}$ bricks.

Explain why her answer is incorrect.

1.3 How many bricks will you need? ____________

Complete each row in the table.

Division Sentence	Tape Diagram	Answer
2.1 $2 \div \frac{2}{5}$		
2.2 ____ ÷ ____		

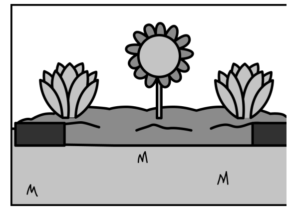
Summary

- ☐ I can connect situations and expressions that represent "how many in 1 group?"
- ☐ I can use diagrams to represent and solve division problems asking "how many in 1 group?" and explain my strategy.

Unit 6.4, Lesson 6: Notes Name ______________________

My Notes

Isabella is filling gaps along the outside of a garden with $\frac{1}{2}$ -foot bricks.



How many bricks does Isabella need to fill each gap?

1.1	1 -foot gap	
1.2	$\frac{1}{4}$ -foot gap	
1.3	$\frac{3}{4}$ -foot gap	

2. Determine if the value of $\frac{1}{3} \div \frac{3}{4}$ is greater than or less than 1. Use the tape diagrams if they help you with your thinking.

Circle One	Less than 1	Greater than 1

Summary

- ☐ I can decide if the number of groups in a division problem is greater than or less than 1.
- ☐ I can use tape diagrams with common denominators to solve division problems.

Unit 6.4, Lesson 7: Notes Name ______________________

My Notes

1. Here is Santino's work for calculating $\frac{1}{2} \div \frac{4}{5}$. Explain what you think Santino did at each step.

   Step 1:

   Step 2:

$\frac{1}{2} \div \frac{4}{5}$

Step 1: $\frac{5}{10} \div \frac{8}{10}$

Step 2: $\frac{5}{8}$

Calculate the value of each expression.

2.1 $\frac{1}{4} \div \frac{7}{2}$	2.2 $5 \div \frac{2}{5}$
2.3 $\frac{8}{3} \div \frac{3}{4}$	2.4 $1\frac{1}{3} \div \frac{3}{5}$

Summary

- ☐ I can explain why $\frac{12}{5} \div \frac{3}{5}$ is equivalent to $12 \div 3$.
- ☐ I can use common denominators to divide fractions.

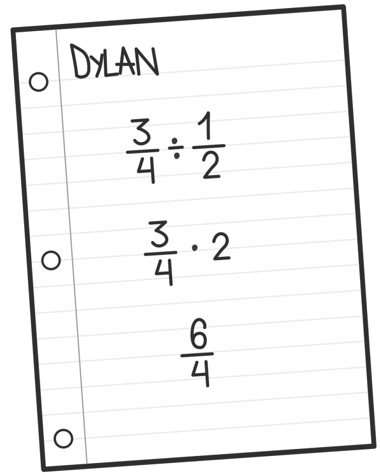
desmos Science Mom Lesson 32

Unit 6.4, Lesson 8: Notes Name ____________________

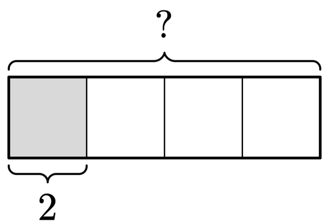
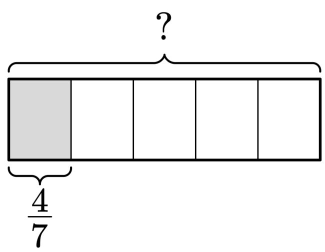
My Notes

1. Dylan used the following strategy to determine $\frac{3}{4} \div \frac{1}{2}$.

   Explain his strategy.



Complete each row in the table.

	Tape Diagram	Expression	Answer
2.1		$2 \div \frac{1}{4}$	
2.2			

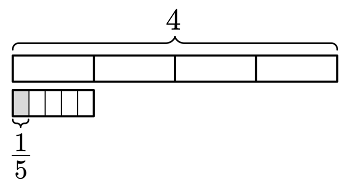
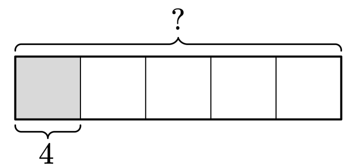
Summary

- ☐ I can make connections between tape diagrams and expressions when the amount in each group is unknown.
- ☐ I can explain why dividing by a unit fraction like $\frac{1}{3}$ has the same value as multiplying by a whole number, like 3.

Unit 6.4, Lesson 9: Notes Name ____________________

My Notes

Alina and Darryl drew diagrams to calculate $4 \div \frac{1}{5}$.

Alina's Diagram	**Darryl's Diagram**
	

1.1 Which diagram do you find more helpful? Explain your thinking.

1.2 Which diagram would you find more helpful to calculate $\frac{3}{2} \div \frac{4}{5}$? Explain your thinking.

1.3 Calculate $4 \div \frac{1}{5}$.	1.4 Calculate $\frac{3}{2} \div \frac{4}{5}$.

Summary

- ☐ I can calculate the quotient of two fractions and explain my strategy.
- ☐ I can compare and contrast two strategies for dividing fractions.

Unit 6.4, Lesson 10: Notes Name ______________________

My Notes

Marquis walked $\frac{3}{4}$ of a mile, which is $\frac{2}{5}$ of the distance between his home and school.

1.1 Write an expression to represent the total distance between Marquis's home and school.

1.2 Calculate the total distance.

Write your own question that can be represented by the expressions in the table.

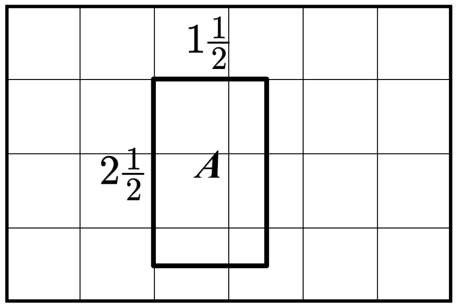
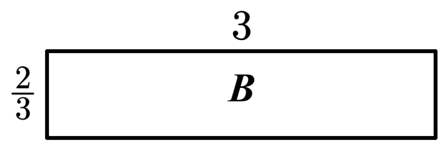
Expression	Question
2.1 $6 \div \frac{2}{3}$	
2.2 $2\frac{1}{2} \div \frac{1}{4}$	

Summary

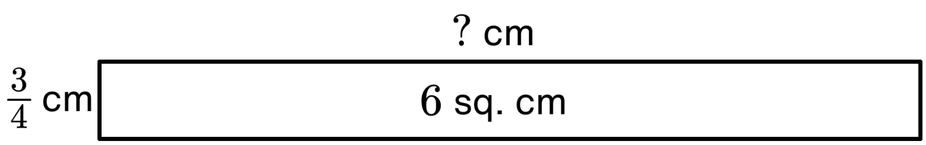
- ☐ I can solve problems involving division of fractions by fractions in context.
- ☐ I can write my own problem to represent a division expression.

My Notes

Determine the areas of rectangle A and rectangle B.

1.1 Rectangle A Area (sq. units)	1.2 Rectangle B Area (sq. units)
	

2. Use any strategy to determine the value of the "?".



Summary

- ☐ I can calculate the area of a rectangle with lengths that are fractions.
- ☐ I can use division and multiplication to solve problems about areas of rectangles with lengths that are fractions.

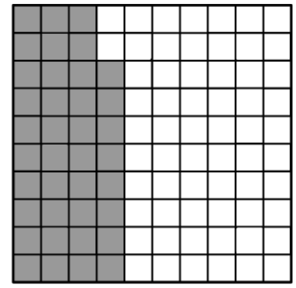
Unit 6.5, Lesson 2: Notes

Name ______________________________

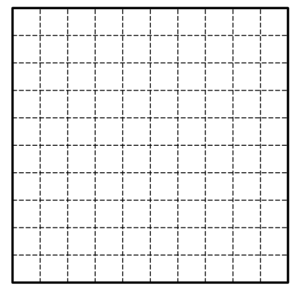
My Notes

1. Select **all** the descriptions that represent the diagram.

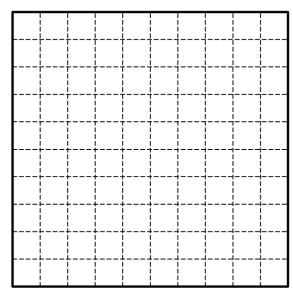
- ☐ 38 tenths
- ☐ 38 hundredths
- ☐ 8 tenths, 3 hundredths
- ☐ 3 tenths, 8 hundredths
- ☐ 2 tenths, 18 hundredths



2. Determine the value of $0.2 + 0.43$. Use the diagram if it helps you with your thinking.



3. Determine the value of $0.6 - 0.21$. Use the diagram if it helps you with your thinking.



Summary

- ☐ I can represent decimals using tenths, hundredths, and thousandths.
- ☐ I can use diagrams to add and subtract decimals.

Unit 6.5, Lesson 4: Notes

Name ______________________________

My Notes

Here is how Natalia calculated $1.58 - 1.2$.

$$\begin{array}{r} 1.58 \\ -\ \ 1.2 \\ \hline 4.6 \end{array}$$

1.1 Explain why Natalia's answer does not make sense.

1.2 Calculate $1.58 - 1.2$.

Determine the missing digits in each number puzzle.

2.1

$$\begin{array}{r} 3.8 \\ +\ \square.5 \\ \hline 8.\square \end{array}$$

2.2

$$\begin{array}{r} 6.2 \\ -\ \square.5 \\ \hline 3.\square \end{array}$$

2.3

$$\begin{array}{r} 8.8 \\ -\ \square.2\square \\ \hline 4.\square 4 \end{array}$$

Summary

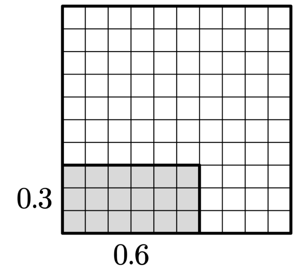
☐ I can add and subtract decimals using different strategies.

desmos Science Mom Lesson 38

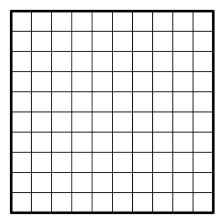
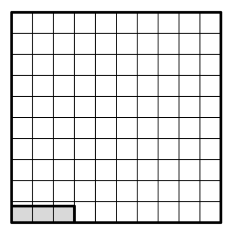
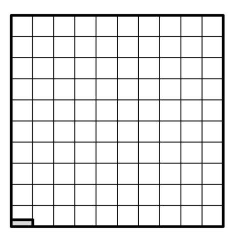
Unit 6.5, Lesson 5: Notes Name ____________________

My Notes

1. Explain why $0.6 \cdot 0.3 = 0.18$.



Use the given information to complete each row.

	Decimals	Area	Fractions	Product
2.1	$0.8 \cdot 0.5$		$\frac{8}{10} \cdot \frac{5}{10}$	
2.2	$0.3 \cdot 0.08$			
2.3			$\frac{9}{100} \cdot \frac{3}{100}$	

Summary

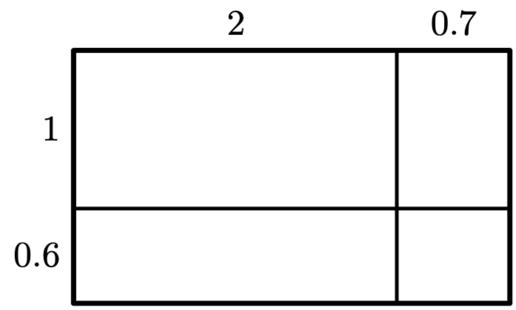
- [ ] I can use area to reason about decimal multiplication.
- [ ] I can use fractions to multiply decimals.

Unit 6.5, Lesson 6: Notes

Name ______________________________

My Notes

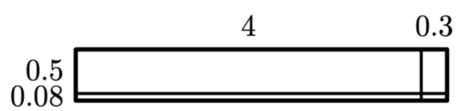
1.1 An area model for $2.7 \cdot 1.6$ has been split into parts. Calculate the area of each part.



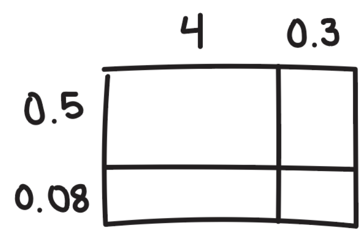
1.2 Use your work above to calculate $2.7 \cdot 1.6$.

Jasmine drew two area models to multiply $4.3 \cdot 0.58$.

To Scale



Not to Scale



2.1 Use either drawing to calculate $4.3 \cdot 0.58$.

Summary

☐ I can use area models to represent and calculate products of decimals.

Unit 6.5, Lesson 7: Notes

Name ____________________

1. Miko wrote this expression to calculate $7.2 \cdot 0.19$.

$$72 \cdot 19 \cdot \frac{1}{10} \cdot \frac{1}{100}$$

If $72 \cdot 19 = 1368$, then what is $7.2 \cdot 0.19$?

A. 0.1368 B. 1.368 C. 13.68 D. 136.8

Explain your thinking.

2. $16 \cdot 12 = 192$.
Select **all** of the expressions that equal 0.192.

- ☐ $1.6 \cdot 1.2$
- ☐ $0.16 \cdot 1.2$
- ☐ $1.6 \cdot 0.12$
- ☐ $0.16 \cdot 0.12$
- ☐ $16 \cdot 0.012$

3. Calculate $0.15 \cdot 0.23$.

Summary

☐ I can use the product of whole numbers to calculate the product of decimals.

☐ I can multiply decimals using different strategies.

Science Mom Lesson 41

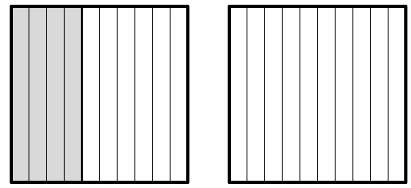
Unit 6.5, Lesson 8: Notes

Name ______________________________

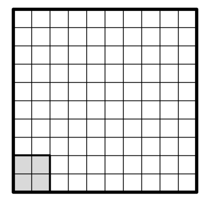
My Notes

1. The large square is 1.

   Explain how we can use this diagram to help us determine the value of $2 \div 0.4$.



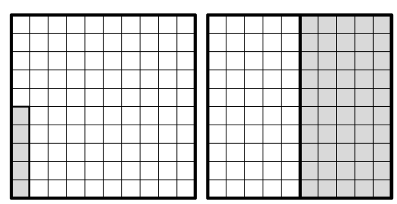
2. Juan claims that $1 \div 0.04$ has the same value as $100 \div 4$. Explain why this makes sense.



3. Select **all** of the expressions that have the same value as $1.5 \div 0.05$.

- ☐ $\frac{15}{10} \div \frac{5}{10}$
- ☐ $\frac{15}{100} \div \frac{5}{100}$
- ☐ $\frac{150}{100} \div \frac{5}{100}$
- ☐ $15 \div 5$
- ☐ $150 \div 5$

4. Determine the value of $1.5 \div 0.05$.



Summary

- ☐ I can use a hundredths chart and reasoning to divide decimals.
- ☐ I can make connections between decimal division and dividing fractions with common denominators.

desmos Science Mom Lesson 42

Unit 6.5, Lesson 9: Notes Name ______________________

My Notes

1. Marco made an error while dividing $1950 \div 15$.

   Find the error and help him fix it.

$$\begin{array}{r} 13 \\ 15\overline{)1950} \\ -15 \\ \hline 45 \\ -45 \\ \hline 0 \end{array}$$

2.1 Select **all** of the expressions that have the same value as $3.27 \div 0.03$.

- ☐ $327 \div 3$
- ☐ $327 \div 30$
- ☐ $\frac{327}{10} \div \frac{3}{100}$
- ☐ $\frac{327}{100} \div \frac{3}{100}$

2.2 Which of these expressions would you use to calculate $3.27 \div 0.03$? Explain your reasoning.

2.3 Calculate $3.27 \div 0.03$.

Summary

- ☐ I can use long division or other strategies to divide decimals with no remainders.
- ☐ I can write an equivalent division expression in order to divide decimals.

Unit 6.5, Lesson 10: Notes Name ____________________

My Notes

1. Renata made an error while calculating $9.8 \div 5$.

   Find the error and help Renata fix it.

$$
\begin{array}{r}
19.6 \\
5\,\overline{)\,9.80} \\
-5 \\
\hline
48 \\
-45 \\
\hline
30 \\
-30 \\
\hline
0
\end{array}
$$

2.1 Adrian says $9 \div 1.2$ has the same value as $90 \div 12$. Explain why this makes sense.

2.2 Calculate $9 \div 1.2$.

3.1 Circle the statement that best describes the quotient of $5.12 \div 0.05$?

Less than 1 Close to 10 Greater than 15

3.2 Calculate $5.12 \div 0.05$.

Summary

☐ I can use long division to divide two numbers and use decimals to represent remainders.

Unit 6.5, Lesson 13: Notes Name ____________________

My Notes

1.1 Select **all** of the expressions that are equal to 2% of $\$1400$.

- ☐ $0.2 \cdot 1400$
- ☐ $0.02 \cdot 1400$
- ☐ $0.2 \div 1400$
- ☐ $1400 \div 0.02$
- ☐ $\frac{2}{100} \cdot 1400$

1.2 Calculate 2% of $\$1400$.

The average cost of food per week for two people in Seattle, Washington is $\$90$.[1]

2.1 Tyler spends around $\$18$ on salad ingredients each week. What percent of the weekly food cost is this?

A. 0.02% B. 0.2% C. 2% D. 20%

2.2 Fruit makes up 6% of the weekly food cost. How much money is that?

Summary

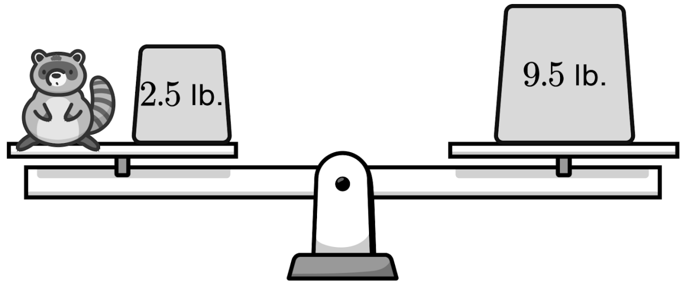
- ☐ I can make connections between percentages and decimals.
- ☐ I can use decimal operations to answer questions about grocery prices.

1 Balancingeverything.com, https://balancingeverything.com/average-food-cost-per-month/

Name ______________________________

My Notes

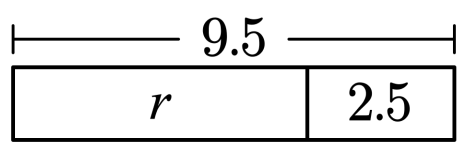
This raccoon and 2.5 pounds balance with a 9.5 lb. weight.



1.1 Nekeisha wrote $r + 2.5 = 9.5$ to represent the situation.
How is the equation like balancing the raccoon and weights?

1.2 Nekeisha also drew a tape diagram to help determine the weight of the racoon.

Explain how this tape diagram is like the equation.



1.3 How much does the racoon weigh?
Use the equation or tape diagram if it helps your thinking.

Summary

- [ ] I can make connections between tape diagrams and equations.
- [ ] I can use reasoning and tape diagrams to figure out unknown values.

Unit 6.6, Lesson 2: Notes Name ____________________

My Notes

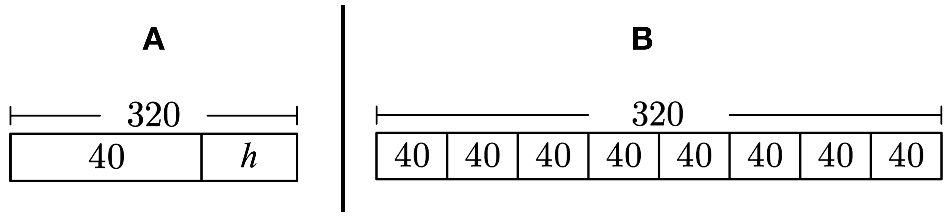
Here is a situation along with an equation that represents it.

Kiandra sold 40 hats and made $\$320$. The hats cost h dollars each.		
Equation	**Solution**	**Meaning of the Solution**
$40h = 320$		

1.1 What is the *variable* in the equation? __________

What does the variable represent in this situation?

1.2 Circle the tape diagram that represents this situation.



1.3 Determine the *solution* to the equation.

1.4 Explain what the solution means in this situation.

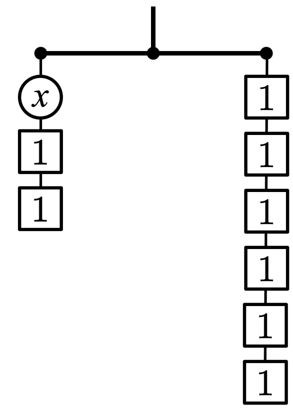
Summary

- ☐ I can make connections between tape diagrams, equations, and situations.
- ☐ I know what the terms *variable* and *solution* mean when solving equations.

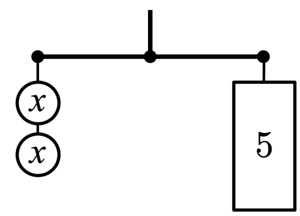
Unit 6.6, Lesson 3: Notes Name ____________________

My Notes

1. What value of x balances this hanger?



2.1 Which equation represents this hanger?



A. $2x = 5$

B. $x + 2 = 5$

C. $5 \cdot 2 = x$

D. $x + 5 = 2$

2.2 Determine the value of x that balances this hanger

Summary

☐ I can make connections between balanced hangers and true equations.

☐ I can use balanced hangers to solve equations.

Unit 6.6, Lesson 4: Notes

Name ______________________________

My Notes

1. Daeja and Juana solved this equation: $6 = \frac{1}{2}s$.

   Daeja: The solution is $s = 12$.
   Juana: The solution is $s = 3$.

   Who is correct?

   Explain how you know.

Determine the solution to each equation.

Draw a hanger or a tape diagram if it helps you with your thinking.

2.1 $y + 1.8 = 14.7$

2.2 $1.8 = 3t$

Summary

☐ I can solve equations that include whole numbers, decimals, and fractions.

Unit 6.6, Lesson 5: Notes Name ____________________

My Notes

1. You must be 3 feet tall to ride a roller coaster.

   Mauricio is $2\frac{1}{4}$ feet tall.

   Which equation represents the number of feet Mauricio must grow, f, in order to ride the roller coaster?

   A. $3 + 2\frac{1}{4} = f$

   B. $2\frac{1}{4} + f = 3$

   C. $3 + f = 2\frac{1}{4}$

   D. $2\frac{1}{4}f = 3$

Here is an equation: $0.5 \cdot 32 = x$.

2.1 Write a situation to match this equation.

2.2 Solve this equation.

2.3 Explain what the solution represents in your situation.

Summary

- ☐ I can write a situation to represent an equation.
- ☐ I can explain what the solution to an equation means in a situation.

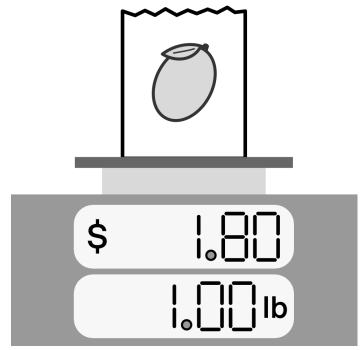
Unit 6.6, Lesson 6: Notes

Name ______________________________

My Notes

1. Mangos cost $\$1.80$ per pound. Complete the table.

Mangos (lb.)	**Total Cost ($)**
1	1.80
2	
5	
10	
p	



2.1 Adnan paid x dollars for a pizza and an extra $\$10.00$ to have it delivered. Write an expression for the total cost.

2.2 Explain how each part of your expression relates to the situation.

Summary

☐ I can write an expression with a variable to represent a situation.

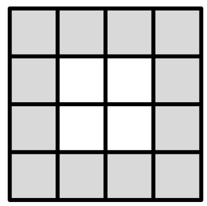
desmos Science Mom Lesson 51

Unit 6.6, Lesson 7: Notes Name ______________________

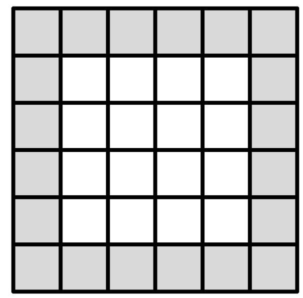
My Notes

How many gray tiles are used to make the border for each square?

1.1 2-by-2



1.2 4-by-4



1.3 10-by-10

1.4 n-by-n

2. Show or explain how you know that $2n + 2$ and $2(n + 1)$ are equivalent.

Summary

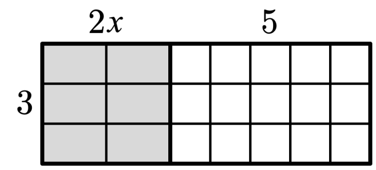
- ☐ I can explain what it means for two expressions to be equivalent.
- ☐ I can justify whether two expressions are equivalent.

Science Mom Lesson 52

Unit 6.6, Lesson 8: Notes Name ______________________________

My Notes

1. Write two equivalent expressions that could be used to represent the area of this rectangle.



Expression 1	**Expression 2**

2.1 Write an expression that is equivalent to $8x + 4$.
Draw a rectangle if it helps you with your thinking.

2.2 Show or explain how you know that $8x + 4$ and $8(x + 4)$ are **not** equivalent.

Summary

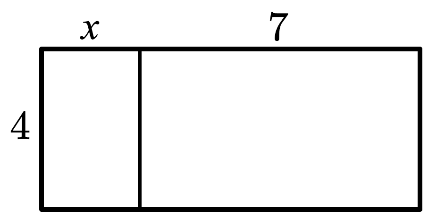
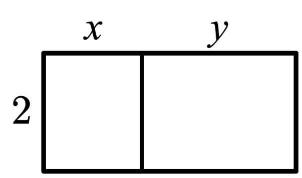
☐ I can use an area model to write equivalent expressions.

Science Mom Lesson 53

Unit 6.6, Lesson 9: Notes   Name ____________________

My Notes

1. Complete the table.

Area Model	Product	Sum
	$4(x + 7)$	
		$2x + 2y$

2.1 The expressions $2(m + 8)$ and $2m + 16$ are equivalent. Write an expression that is equivalent to $2(m - 8)$.

2.2 The expressions $3p - 18$ and $3(p - 6)$ are equivalent. Write an expression that is equivalent to $18 - 3p$.

Summary

☐ I can write equivalent expressions, including expressions that have subtraction.

Science Mom Lesson 54

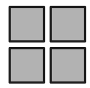
Unit 6.6, Lesson 10: Notes

Name ______________________________

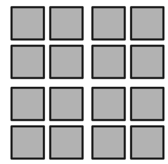
My Notes

The number of squares in each image represents a power of 4.

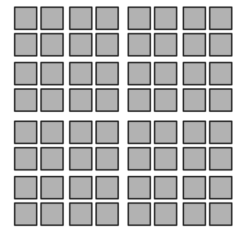
4^1



4^2



4^3



1. Explain how you could figure out the value of 4^4.

2. Complete the table.

With Exponent	Without Exponent
3^5	$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$
	$\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2}$
$(0.6)^3$	

3. Select **all** the expressions that are equal to 81.

☐ 1^{81} ☐ 81^1 ☐ 3^4 ☐ 2^9 ☐ $3^3 \cdot 3$

Summary

☐ I can explain what an expression with an exponent means (e.g., 3^5).

☐ I can decide whether two expressions that include exponents are equivalent.

Science Mom Lesson 55

Unit 6.6, Lesson 11: Notes Name ______________________________

My Notes

Here are two figures.

Figure A

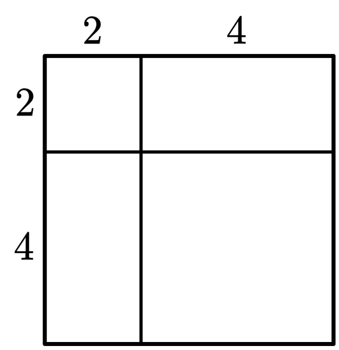
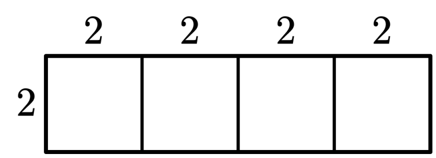


Figure B



1. Match each figure with an expression that describes its area. You will have one expression left over.

$(4 \cdot 2)^2$ $4 \cdot 2^2$ $(2 + 4)^2$

Figure _____ Figure _____ Figure _____

Calculate the value of each expression.

2.1 $(4 \cdot 2)^2$	2.2 $4 \cdot 2^2$	2.3 $(2 + 4)^2$

Summary

☐ I can determine the value of an expression that has an exponent and addition, subtraction, multiplication, or division.

Unit 6.6, Lesson 12: Notes

Name ______________________________

My Notes

Here are two figures. They are not drawn to scale.

Figure A

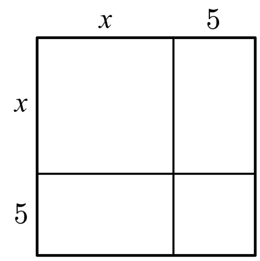
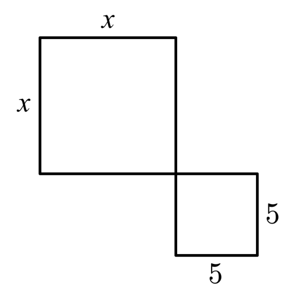


Figure B



1.1 Match each figure with an expression that describes its area. You will have one expression left over.

$x + 5^2$	$(x + 5)^2$	$x^2 + 5^2$
Figure _____	Figure _____	Figure _____

1.2 Explain why $(x + 5)^2$ and $x + 5^2$ are not equivalent.

Calculate the value of each expression when $x = 2$.

2.1 $x + 3^3$	2.2 $(x + 1)^4$	2.3 $5x^3$

Summary

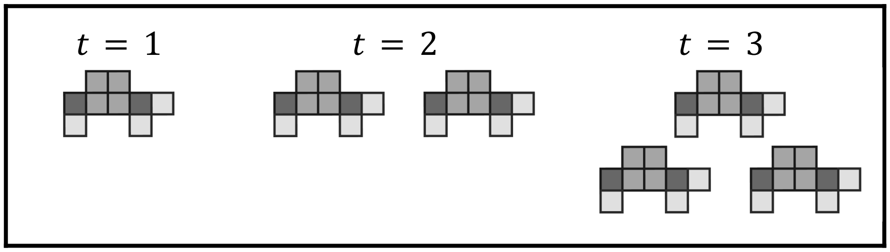
☐ I can determine the value of an expression that has a variable, an exponent, and addition, subtraction, multiplication, or division for a specific value of the variable.

Unit 6.6, Lesson 13: Notes

Name ____________________________

My Notes

Here is a pattern of turtles.



The *independent variable* is t, the number of turtles.

1.1 Explain what an *independent variable* is.

1.2 Explain what a *dependent variable* is. Give one example.

Adah made a table to represent the relationship between the number of turtles, t, and the total area, a.

2.1 What is the dependent variable?

2.2 Which equation represents this relationship?

$t = 9a$ $\qquad a = 9t$ $\qquad a = t + 9$

Explain your thinking.

t	a
1	9
2	18
3	27

Summary

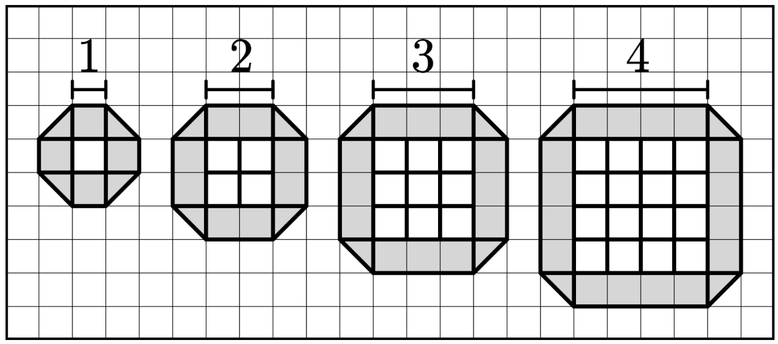
☐ I understand what the independent and dependent variables are in a relationship.

☐ I can use a table or an equation to represent a relationship.

Unit 6.6, Lesson 14: Notes Name ________________________________

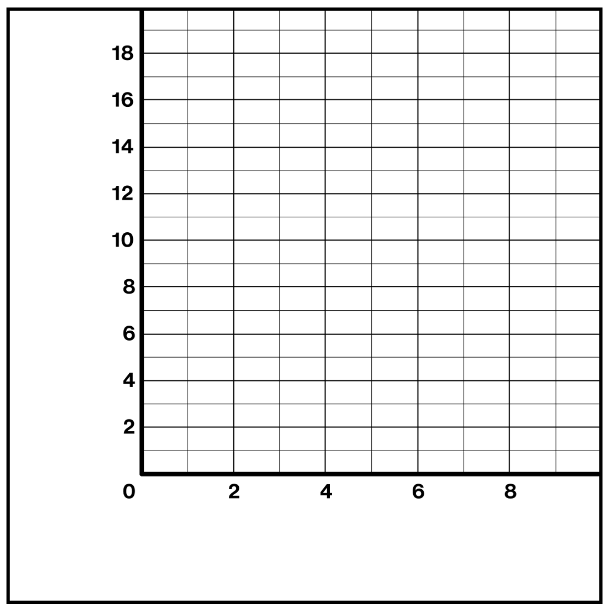
My Notes

Kanna is exploring the relationship between the side length, n, and the total area of the border, b.



1. Use Kanna's table to create a graph of the relationship. Be sure to label each axis with what it represents.

n	b
1	6
2	10
4	18



2. If the graph were larger, it would include the point $(6,\ 26)$. Describe what this point means in the situation.

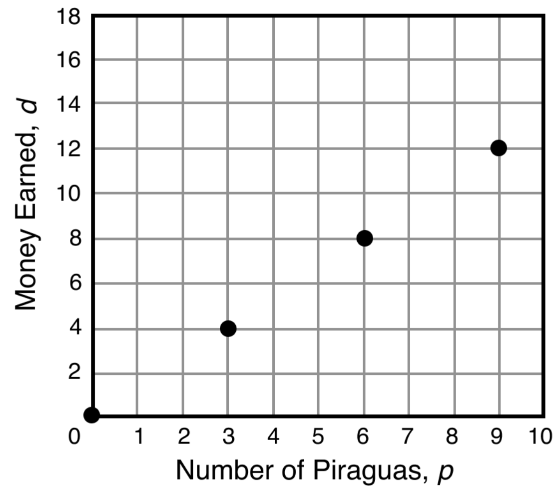
Summary

☐ I can represent relationships using tables and graphs.

Unit 6.6, Lesson 15: Notes Name ________________________________

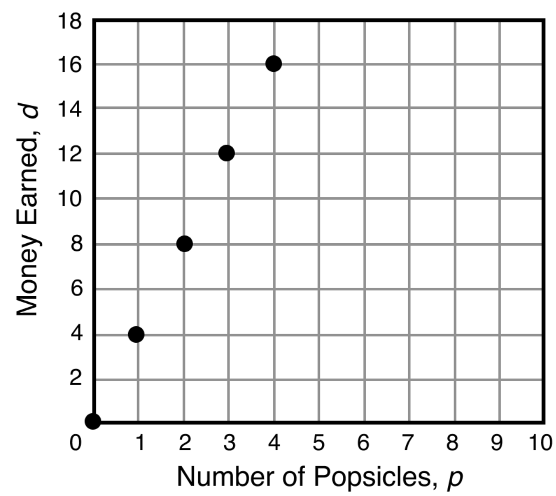
My Notes

1. Create a table that represents this graph.



p	d

2. Which equation represents this graph?



$p = 4d$

$d = 4 + p$

$d = 4p$

Explain how you know.

Summary

☐ I can connect tables, graphs, and equations that represent the same relationship.

Unit 6.6, Lesson 16: Notes Name ______________________

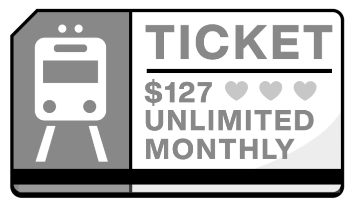
My Notes

In 2021, one regular-fare subway ride costs $\$2.75$ in New York City.

1.1 Write an equation to represent the relationship between total cost, t, and number of rides, r.

1.2 Use the equation to determine how much 15 rides would cost.

An unlimited monthly pass costs $\$127$.



2.1 Describe things to consider when buying an unlimited monthly pass.

2.2 Explain when it would be a good deal to buy the unlimited monthly pass.

Summary

☐ I can use tables, graphs, and equations to analyze an issue in society.

desmos Science Mom Lesson 61

Unit 7.2, Lesson 2: Notes

Name ______________________________

My Notes

1. What does it mean for two quantities to be in a **proportional relationship**?

2. Complete the tables so that one table shows a proportional relationship and the other does not.

Proportional Relationship

x	y
2	8
6	
	4

Not a Proportional Relationship

x	y
2	8
6	
	4

3. Show (or explain) how you know that the table on the left represents a proportional relationship.

Summary

- [ ] I can identify patterns in tables that represent proportional relationships.
- [ ] I can use a table to calculate unknown quantities in a proportional relationship.

Unit 7.2, Lesson 3: Notes

Name ______________________________

My Notes

1. What is a **constant of proportionality**? Give an example.

2. An 8-ounce glass of apple juice contains 26 grams of sugar. Complete the table to determine the amount of sugar in different sizes of apple juice.

Apple Juice		
	Volume (oz.)	Sugar (grams)
Glass	8	26
Bottle	12	
Carton	32	
Jug	128	

3. What is the constant of proportionality in this relationship? What does it tell us about the situation?

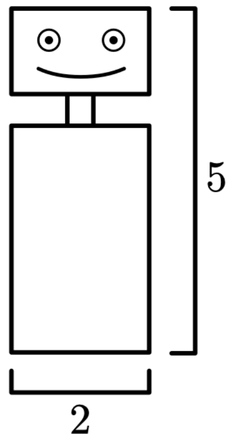
Summary

- ☐ I can determine the constant of proportionality from a table and explain what it means.
- ☐ I can use the constant of proportionality to calculate unknown information in a table.
- ☐ I can justify whether a table represents a proportional relationship or not.

Unit 7.2, Lesson 4: Notes Name ______________________

My Notes

The table shows information about three robots. The relationship between width and height is proportional.



1. Complete the table.

Robot Width in Inches (w)	Robot Height in Inches (h)
2	5
6	
11	

2. Write instructions explaining how to calculate the height of the robot given any robot width.

3. Write an equation that relates the robot height, h, to the robot width, w.

Summary

☐ I can explain where to find the constant of proportionality as a value in a table.

☐ I can write equations to represent proportional relationships.