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TALK MOVE ASSIGNMENT

When you share, expand and clarify your thinking, it helps not just the other person, but it helps YOU understand the content better. You have to be able to listen carefully to one another to be able to give good help. Anyone who has had a misunderstanding among friends or played a particularly funny game of "Telephone" knows how important it is to develop the skill of listening. And most importantly, giving help to each other lets you think with each other. That's why it's great to discuss with other students. More heads are better than one!

Understanding

The first step to giving help to your classmates is understanding what they are trying to say. Remember, when responding it's always OK to say "I need time to think."

ASK A QUESTION	SUMMARIZE
Ask for clarification. "What do you mean by that?" "Can you give an example?"	Summarize what the other person is saying. Make sure you understand the idea they are trying to get across. "Are you saying..."

Example 1: Ishrat asks, "I don't understand why this is a ratio. Aren't we just comparing some things? This looks like a fraction."
Ishrat needs some help. Do you understand what she is asking or do you need a better understanding of what she needs help with? What can you say to get more information? What talk move seems appropriate in this situation? Explain your thinking.

Challenging

Once you understand what someone else is saying, you can compare it to your understanding.

ASK FOR EVIDENCE OR REASONING	CHALLENGE	REFLECT

Have them explain their thought process “What is your evidence for that?”	“What if it had been _____ instead?”	“I respectfully disagree because ___,” “I agree with ___,” and “Are you saying the same thing as ___?”

Example 2: Shang asks, “If I have 2 apples to 3 oranges it seems like I should be able to write the ratio as both 2 to 3 and 3 to 2.”
Shang is trying to deeply understand this idea. It’s ok if you disagree with him. He needs you to compare his thinking to what you know. Do you need to challenge his idea in this situation? What talk move seems helpful in this case? Explain your thinking.

Thinking Together

Now you can dig into an idea as a group to see how you can connect all the information to build your mental model.

ADD ON	BRAINSTORM
“I would like to add on to that.”	Go further with the idea. “This is similar to what we were talking about yesterday because…”

Example 3: In a small group discussion, Tanea says, “The ratio is comparing the amount of something to another thing. In this case, it is the ratio of cars to trucks. If you simplify the ratio 100 cars to 60 trucks (written as 100:60) you will get 5:3, which means that there are 5 cars for every 3 trucks.

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Tanea has made a great start explaining how to simplify the ratio. Is there anything you can add on to their idea? Can you go further with the idea? What talk move seems appropriate in this situation? Explain your thinking.

Keep these Talk Moves in mind each time you interact with other students. Which talk move will you try to use in class next? Why do you think this is a good option?

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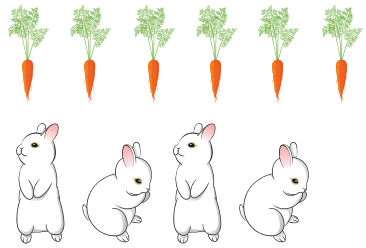
RATIO ASSIGNMENT

Finding Ratios: An Introduction
https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-ratios-intro/v/ratios-intro

A ratio compares two different quantities.

For example, those two quantities could be rabbits and carrots:



In this example there are 4 rabbits and 6 carrots.

The ways to describe the ratio of rabbits to carrots:

- There are 4 rabbits for every 6 carrots.
- The ratio of rabbits to carrots is 4 to 6.
- The ratio of rabbits to carrots is 4:6.

Remember, order matters in ratios

The ways to describe the ratio of carrots to rabbits:

- There are 6 carrots for every 4 rabbits.
- The ratio of carrots to rabbits is 6 to 4.
- The ratio of carrots to rabbits is 6:4

Problems

1. Sara loves toy cars. She has 6 red cars, 3 blue cars, 14 green cars, and 1 white car. What is the ratio of green cars to blue cars in Sara's collection?

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2. David is helping his sister Rachel pick up markers that fell on the floor. There are 12 markers left in the container and 7 markers on the floor. What is the ratio of markers in the container to markers on the floor?

3. For the perfect chicken soup, Britney uses 3 cups of chicken, 10 shredded carrots, and 8 oz of chicken broth. What is the ratio of cups of chicken to shredded carrots?

4. Sabrina has a lot of friends. She has 4 friends who live in Pennsylvania, 3 friends who live in New Jersey, and 9 friends who live in Arizona. What is the ratio of Sabrina's friends who live in Pennsylvania to her friends who live in Arizona?

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HELP NICO WITH RATIOS

Part 1

Nico wants to go swimming with friends at the pool! Sadly though Nico's body isn't waterproof so Nico needs to prepare first. The plan is to use waterproof paint to protect Nico's body but Nico isn't sure how much waterproof paint is needed! Nico knows that each fluid ounce of waterproof paint covers three square inches. Your goal will be to help Nico figure out how much waterproof paint is needed using the table below.

STEP	BODY PART	SURFACE AREA (INCHES)	VOLUME OF PAINT (FLUID OZ)
0	Feet	6	2
1	Legs	12	?
2	Torso	?	6

Solution

Step 1

STEP	BODY PART	SURFACE AREA (INCHES)	VOLUME OF PAINT (FLUID OZ)
0	Feet	6	2
1	Legs	12	**4**
2	Torso	?	6

$6 : 2$

$12 : ?$

$6 \times ?? = 12$

$6 \times 2 = 12$

So… $2 \times 2 = 4$

Write your explanation here. Remember to use the Talk Moves in order to give a good explanation that might help Nico learn how to solve the problem.

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Step 2

STEP	BODY PART	SURFACE AREA (INCHES)	VOLUME OF PAINT (FLUID OZ)
0	Feet	6	2
1	Legs	12	4
2	Torso	**18**	6

6 : 2

12 : 4

18 : 6

2 × ?? = 6

2 × 3 = 6

So… 6 × 3 = 18

Write your explanation here. Remember to use the Talk Moves in order to give a good explanation that might help Nico learn how to solve the problem.

Part 2

...Well except for Nico's arms and head! If Nico wants to go into the water all the way, Nico's hands, arms, and head must be protected also! Help Nico out fill out the following table:

STEP	BODY PART	SURFACE AREA (INCHES)	VOLUME OF PAINT (FLUID OZ)
0	Hands	6	2
1	Arms	3	?
2	Head	?	3

Solution

Step 1

STEP	BODY PART	SURFACE AREA (INCHES)	VOLUME OF PAINT (FLUID OZ)
0	Hands	6	2
1	Arms	3	**1**
2	Head	?	3

$$6 : 2$$
$$3 : ?$$

$$\frac{6}{2} = \frac{3}{?}$$

$2 \times 3 = 6$ (cross-multiply)

So… $6 \div 6 = 1$

Write your explanation here. Remember to use the Talk Moves in order to give a good explanation that might help Nico learn how to solve the problem.

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Step 2

STEP	BODY PART	SURFACE AREA (INCHES)	VOLUME OF PAINT (FLUID OZ)
0	Hands	6	2
1	Arms	3	1
2	Head	**9**	3

6 : 2

3 : 1

? : 3

$\frac{6}{2} = \frac{?}{3}$

6 × 3 = 18 (cross-multiply)

So… 18 ÷ 2 = 9

Write your explanation here. Remember to use the Talk Moves in order to give a good explanation that might help Nico learn how to solve the problem.

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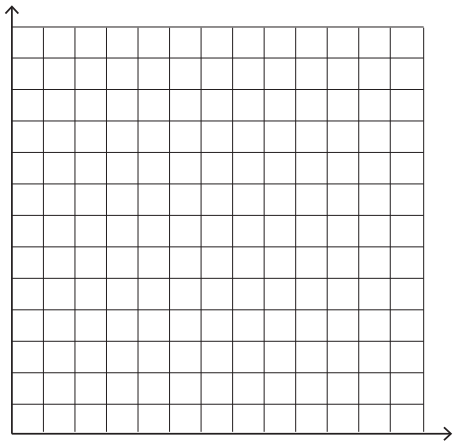
PROPORTIONAL RELATIONSHIP ASSIGNMENT

https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-ratio-proportion/7th-constant-of-proportionality/v/introduction-proportional-relationships

It is such a nice sunny day, so Dylan decides he wants to set up a lemonade stand in his yard. His family makes the best lemonade, the secret? For every 1 cup of lemonade mix he adds 3 cups of water. But he needs to know how much of each to add for bigger batches, which can be seen in the table below. After looking at the table, read and answer the following questions.

CUPS OF LEMONADE MIX	CUPS OF WATER
1	3
2	6
4	12

1. Plot the data from the table on the graph.



2. What is the ratio of Lemonade Mix to Water?
3. Describe the graph in words. .....
4. Based on this graph, Do you think this shows a proportional relationship? What do you think are the characteristics of a graph that shows a proportional relationship?

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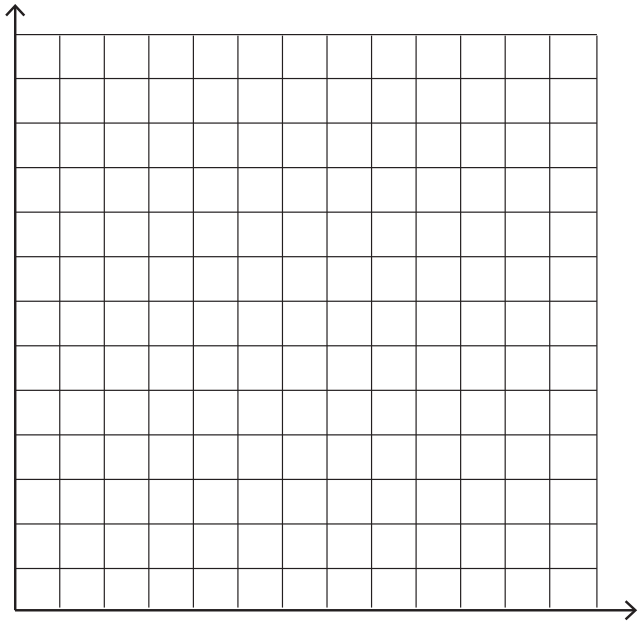
Everyone loves ice cream and what better topping to go on ice cream than pieces of candy? Cindy loves to put M&Ms on her ice cream to give it that yummy chocolate crunch! See the table below for how many M&Ms she puts on for different amounts of ice cream. Then answer the questions below.

SCOOPS OF ICE CREAM	NUMBER OF M&MS
3	4.5
5	7.5
7	10.5

1. Graph the table and sketch the graph here.



2. What is the ratio of Scoops of Ice cream to number of M&M's?

3. Describe the graph in words.

4. Is this a graph of a proportional relationship? Explain your thinking

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SOLVING PROPORTIONS ASSIGNMENT

https://www.khanacademy.org/math/algebra-basics/alg-basics-linear-equations-and-inequalities/alg-basics-write-and-solve-proportions/v/find-an-unknown-in-a-proportion

Solve the proportion using the 4 methods shown in the video. For each method, can you explain either how it is related to another method or how it is related to something we have done in class?

$$\frac{8}{36} = \frac{10}{n}$$

1. Solve this problem using the proportional relationship method.

2. Solve this problem using the simplify method.

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3. Solve this problem using the cross multiply method.

4. Solve this problem using the algebra method.

5. Which method would you like to talk about in the comments on the Khan Academy video?