FACEing MATH®

Name: _____

Lesson # 1: Persevere to solve problems. Plan, solve, and check using ratio reasoning.

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1. Solving **ratio reasoning** math problems can require a plan and perseverance. **Ratio reasoning** is a way to compare 2 quantities.

Which **ratio** compares weekdays to weekend days?

5:2

> hair

5:7

> hair

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2. Use **ratio reasoning** to show proportions in different ways:

2:7
2 to 7

Find another way to express this ratio.

$\frac{2}{7}$

> eyes

$\sqrt{7}$

> eyes

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3. _At this rate_ or _Find the ratio_ are key words that often, but not always, pose a problem to be solved with ratio reasoning.

Which problem below needs ratio reasoning in order to be solved?

What's **⅓** of 459?

> nose/mouth

Jim walks 3 MPH. At this rate, he walks **?** miles in 90 minutes.

> nose/mouth

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4. Solving some ratio problems takes more than one step. Follow your plan through all the steps.

Lisa gets 5 tickets for $12. How much will she spend to get 20 tickets?

$48

> upper torso

$60

> upper torso

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5. **Persevere:** to continue an action even after it gets difficult

Persevere and solve this:

A robotic boat goes 90 meters in 50 seconds. What's its speed in meters per **second**? per **minute**?

1.8 m/sec
108 m/min

> lower torso

0.55 m/sec
33.3 m/min

> lower torso

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6. Plan a solution pathway to solve: Pat mixes cups of red and white frosting at a 2:3 ratio to get pink frosting. How many cups of *pink* frosting will Pat have after using 6 cups of white frosting?

4 cups of pink frosting

> hand on left

10 cups of pink frosting

> hand on left

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7. Rennie wants to fill a jar with jellybeans and gumballs, using a 7:6 ratio.

How many jellybeans will be in the jar when it holds a total of 39 sweets?

21 jellybeans

> dog's head

18 jellybeans

> dog's head

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8. The ratio of kids to adults at the movie in the park is 4:1.

Total kids = 84
Total adults = ?

How many adults are at this movie?

105 adults

> dog's body

21 adults

> dog's body

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9. Allison counted 56 cars parked in the lot. Eight parking spaces remained empty.

Plan, solve, and check to find the ratio of *empty* to *full* parking spaces.

1:7

> under paws

56:64

> under paws

Lesson 1

10. How can the ratio of white tiles to gray tiles be represented?	11. The ratio of flour to bread-crumbs in the recipe is 2:3. The total of both ingredients is 30 tablespoons. How many tablespoons of each ingredient are used?	12. The ratio of tour guides to visitors is 1:15. If 75 visitors arrive to see the castle, how many guides are needed? How can this problem be represented mathematically?

3:1 **eyes** Color: green	12 tablespoons of flour 18 tablespoons of breadcrumbs **hair/brows** Color: purple	$\dfrac{1}{15} = \dfrac{n}{75}$ **mouth** Color: red
6:1 **eyes** Color: gray	14 tablespoons of flour 16 tablespoons of breadcrumbs **hair/brows** Color: red	$\dfrac{15}{1} = 75 + n$ **mouth** Color: black

13. Gloria wraps 10 boxes of cookies to send to her relatives. The wrapping paper to ribbon ratio is 3':2.5' for each box. How much more wrapping paper than ribbon will she use?	14. Find an equivalent value for the ratio: 9:5	15. Find two ratios equal to this one: 4:5 *I can persevere and work it through.*
6 inches **shirt** Colors: white & blue	1.08 **pants** Color: green	5:4 and 40:50 **shoes** Color: purple
5 feet **shirt** Colors: red & yellow	$1\dfrac{4}{5}$ **pants** Color: red	16:20 and 28:35 **shoes** Color: red

16. Find this ratio reduced to its simplest decimal form. 300:120 *I don't give up when it takes a bit of brain power!*	17. Persevere and solve: 75:45 45:27 Find an accurate description of the pair of ratios above.	18. The ratio of red to white beans in a bag is 4:1. What is the probability that a white bean will be picked from the bag?
2.5 **all torn paper** Color: green	These ratios are not equivalent. **dog fur** Color: gray	There is a 20% probability that a white bean will be picked. **floor** Color: brown
$\dfrac{3}{12} = \dfrac{1}{4}$ **all torn paper** Color: blue	These ratios are equivalent. **dog fur** Color: blue	There is a 25% probability that a white bean will be picked. **floor** Color: pink