

1-10-19

Aim: SWBAT review ratios and rates.

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Do Now: Ratios and Proportions Packet

Aim: SWBAT review rates and ratios.

Ratio: a comparison of 2 numbers with the same units.

Examples: 2 to 3 OR 2:3 OR $\frac{2}{3}$

Equivalent Ratios: two ratios that have the same value

Examples: $\frac{2}{3}$ and $\frac{4}{6}$ OR 5 to 10 and 20 to 40 OR 11:22 and 33:66

Write each ratio as a fraction in simplest form. ***notice the labels are the same***

	A	B
1	5 out of 7 people $\frac{5}{7}$	20 out of 25 free throws $\frac{20}{25} = \frac{4}{5}$
2	12 cups to 2 cups $\frac{12}{2} = \frac{6}{1}$	12 out of 20 people $\frac{12}{20} = \frac{3}{5}$

Rate: a comparison of 2 numbers with different units.

Examples: $\frac{110 \text{ miles}}{2 \text{ hours}}$ OR $\frac{15 \text{ beats}}{6 \text{ seconds}}$

Unit Rate: a rate with a 1 in the denominator.

Examples: $\frac{55 \text{ miles}}{1 \text{ hour}}$ OR $\frac{2\frac{1}{2} \text{ beats}}{1 \text{ second}}$

Unit Price: the cost per unit of measure (The price goes in the numerator.)

Examples: $\frac{\$2.25}{1 \text{ drink}}$ OR $\frac{\$0.04}{1 \text{ pencil}}$

FINDING THE UNIT RATE

Step 1) Divide the numerator and denominator by the value in the denominator

Step 2) Transfer labels to the answer

Find the unit rate. ***notice the labels are different***

	A	B	C
3 Unit Rate	$\frac{42 \text{ mi}}{7 \text{ hr}} \div \frac{7}{7} = \frac{6 \text{ mi}}{1 \text{ hr}}$	$\frac{84 \text{ mi}}{4 \text{ gal}} \div \frac{4}{4} = \frac{21 \text{ mi}}{1 \text{ gal}}$	$\frac{114 \text{ mi}}{3 \text{ gal}} \div \frac{3}{3} = \frac{38 \text{ mi}}{1 \text{ gal}}$
4 Unit Price	$\frac{\$78}{13 \text{ lbs}} \div \frac{13}{13} = \frac{\$6}{1 \text{ lb}}$	$\frac{\$51}{17 \text{ lbs}} \div \frac{17}{17} = \frac{\$3}{1 \text{ lb}}$	$\frac{\$32.50}{5 \text{ lbs}} \div \frac{5}{5} = \frac{\$6.50}{1 \text{ lb}}$
5 Complex Fractions Unit Rate	$\frac{148 \text{ mi}}{9\frac{1}{4} \text{ gal}} \div \frac{9\frac{1}{4}}{9\frac{1}{4}} = \frac{16 \text{ mi}}{1 \text{ gal}}$	$\frac{28\frac{2}{5} \text{ texts}}{4 \text{ days}} \div \frac{4}{4} = \frac{7\frac{1}{10} \text{ texts}}{1 \text{ day}}$	$\frac{\$822}{1\frac{2}{3} \text{ lbs}} \div \frac{1\frac{2}{3}}{1\frac{2}{3}} = \frac{\$493.20}{1 \text{ lb}}$
6	Ann washes $10\frac{1}{2}$ windows in $\frac{3}{4}$ of an hour. At this rate, how many windows can she wash in 3 hours? $\frac{10\frac{1}{2} \text{ windows}}{\frac{3}{4} \text{ hr}} \div \frac{\frac{3}{4}}{\frac{3}{4}} = \frac{14 \text{ windows}}{1 \text{ hr}} \quad 14 \times 3 = 42$		
7	Rina's cookie recipe uses $1\frac{1}{2}$ cups of brown sugar to make 2 dozen cookies. Brielle wants to make only 1 dozen cookies. How much brown sugar should Brielle use? $\frac{1\frac{1}{2} \text{ cups}}{2 \text{ dozen}} \div \frac{2}{2} = \frac{\frac{3}{4} \text{ cups}}{1 \text{ dozen}}$		

HOMEWORK

Use unit rates to answer each question. Write your final answer in a sentence.

1. You are training for a triathlon that includes a 122 mile bike ride. Today, you rode your bike 12 miles in 45 minutes. What is your rate in miles per hour?
2. You bike 15 miles in 50 minutes. How far can you bike in 1 hour?
3. Evan paid \$1.12 for a dozen eggs. Determine the cost of 3 eggs.
4. Annie paid \$54.50 for 2 pairs of jeans. What should 3 pairs of jeans at the same price cost?
A. \$27.25 B. \$54.50 C. \$81.50 D. \$81.75
5. The cost for 2 pounds of apples is \$2.90. At the same rate, which of the following would be true?
A. 1 pound costs \$1.50 B. 3 pounds cost \$4.35
C. 4 pounds cost \$5.95 D. 5 pounds cost \$6.50