Math 1

1.7 Ratios, Rates, and Conversions

Unit 1 Day 7

SWBAT convert units and rates into different units and rates.

Conversions

1 hour = 3600 seconds	1 mile = 5280 feet	1 yard = 3 feet
1 meter = 3.28 feet	1 km = 0.62 miles	1 light second = 300,000,000 meters
1 kg = 2.2 lbs	1 lb = 0.45 kg	1 quart = 0.946 liters
1km = 1000m	1 foot = 12 inches	1 inch = 2.54 cm = 25.4 mm
100cm = 1 m	1 mile = 1,760 yards	

Example 1: One quantity conversions

a) 565,900 seconds into days

b) 17 years into minutes

c) 43 miles into feet

d) 165 pounds into kilograms

Steps:

1. Set up a fraction with your current units in the numerator
2. Set up a second fraction (that you will multiply with the first) with your current units in the denominator and your future units in the numerator
3. Repeat steps 1-2 until you have the unit you want to end with in the numerator.
4. Cancel the units, and multiply the numbers straight across

Example 2: Two quantity conversions

a) 130 meters per second into miles per hour

b) 1100 feet per second into miles per hour

c) 53 yards per hour into inches per week

Steps:

1. Set up a fraction. Any "per" units go in your denominator.
2. Set up a second fraction to eliminate the units currently found in your numerator. Follow the steps from the front page.
3. When you get the unit you want in the numerator, set up another set of fractions to eliminate the unit currently found in your denominator. Follow the steps from the front page.
4. Cancel the units, and multiply the numbers straight across.

Example 3: Non-calculator EOC Prep

a) Shawn walked 880 yards in 15 minutes. Diego walked 5,280 feet in 20 minutes. In miles per hour, how much faster did Diego walk than Shawn? (Hint: There is 1760 yards in one mile)

b) Maria walked 3520 yards in 30 minutes. Summer ran 2640 feet in 5 minutes. In miles per hour, how much faster did Summer run than Maria?

c) Kiara walked 1760 feet in 3 minutes. Mark walked 440 yards in 5 minutes. In miles per hour, how much faster did Kiara walk than Mark?

d) Come up with your own word problem *similar* to this. Work it out on a separate sheet of paper, and then give the problem to your partner (without the work) for them to solve!