COAL – Guided Notes 2 **Name** _____
Dimensional Analysis **Date** _____

NQ1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
NQ2. Define appropriate quantities for the purpose of descriptive modeling.
NQ3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

How do I convert more than one unit?

1.) Convert 10 liters to gallons. (4 quarts = 1 gallon 1 liter = 1.1)

2.) Convert 10 hours to seconds. (1 minute = 60 seconds 1 hour = 60 minutes)

3.) Convert 48 ounces to pints. (2 cups = 1 pint 1 quart = 2 pints 8 fluid ounces = 1 cup)

4.) Convert 32 ounces to quarts (2 cups = 1 pint 1 quart = 2 pints 8 fluid ounces = 1 cup)

5. Convert 10 weeks to minutes. (1 day = 24 hours 60 minutes = 1 hour 1 week = 7 days)

6. One week while she was training for a marathon, Lucy ran a total of 131 kilometers. If she ran every day of the week, how many meters on average did she run each day?
(1 kilometer = 1000 meters 1 week = 7 days)

7. An athlete ran a sprint of 100 feet in 3.1 seconds. At what speed was the athlete running in miles per hour?
(1 hour = 3600 seconds 1 mile = 5280 feet)

8. The janitor at a school discovered a slow leak in a pipe. The janitor found that it was leaking at a rate of 4 fluid ounces per minute. How fast was the pipe leaking in cups per hour?
(8 fluid ounces = 1 cup 60 minutes = 1 hour)

9. Which is longer: 12 meters or 13 yards? Show your work to prove your answer. (1 meter = 1.1 yards 1 yard = 0.9 meters)

10. A car is traveling at 55 miles per hour. What is the car's speed in feet per second? (3600 seconds = 1 hour 1 mile = 5280 feet)

11. Deanna's little sister wants to go on a carnival ride, but only children taller than 130 cm may go on it. Deanna's sister is 4 feet tall. Can she go on the ride?

12. A mining company removes 30 tons of rock from a quarry every day. If the company works around the clock (24 hours per day), how many pounds of rock are moved every minute?

13. Three friends in the Augusta Striders Running Club decided to run a race together. The table shows the average speed for each of them.

Runner	Average Speed
Katelyn	228 inches per second
Tatyana	10 miles per hour
Danasia	17 feet per second

Which friend crossed the finish line first?

14. A person drinks 8 glasses of water per day and each glass contains 300 mL. How many liters of water will that person consume in 1 year?

15. A football field is exactly 120 yards long. How long is the field in meters?