

Unit 1 Part 2

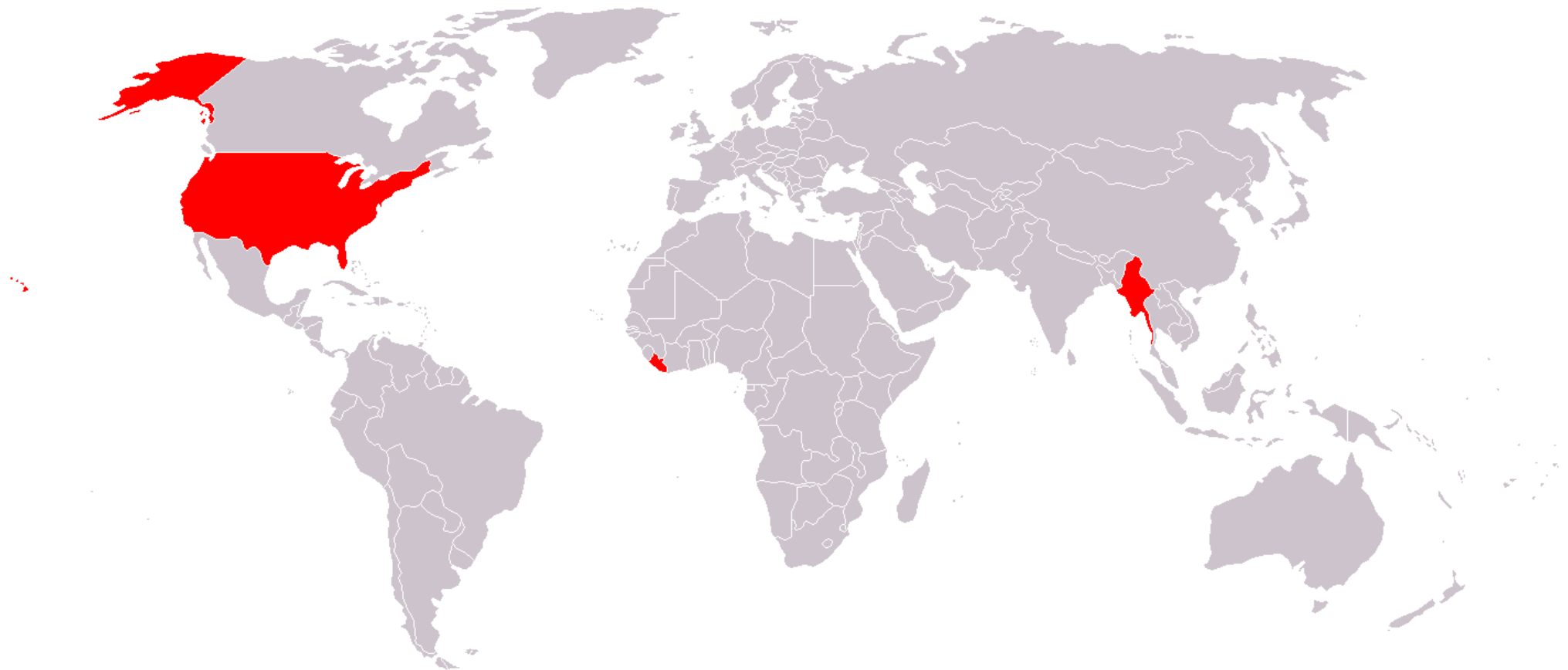
Metric Prefixes and Dimensional Analysis

Physics S1

Avondale High School

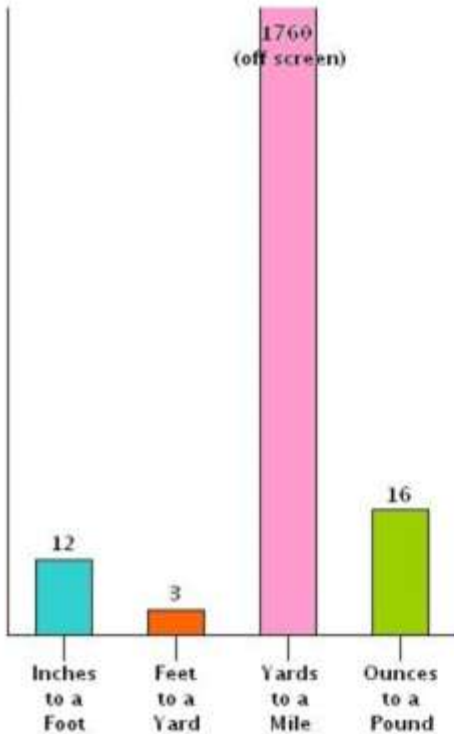
- Watch and take notes
- Remember you can rewind, fast forward and pause
- Complete the form and click “DONE” in Google Classroom

What do the United States, Myanmar, and Liberia have in common?

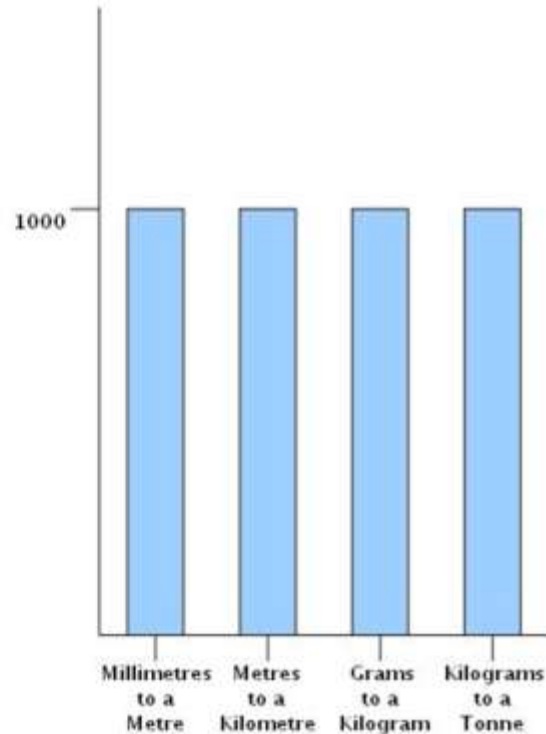


What is the metric system?

Imperial System



Metric System



It consists of two things:

- SI Units
 - *Le Système international d'unités*
- Prefixes that increase by bases of 10.
 - Much easier and more consistent than 12, 3, and 1760.
 - Multiplying by 10 is easy!

SI Units

Quantity	Unit	Symbo l	What does it measure?
Length	Meter	m	Distance between two points
Time	Second	s	Duration between two occurrences
Mass	Kilogra m	kg	Amount of matter in an object

Prefixes used with length, time, and mass

Small to
Large
Prefix...
Gets
Smaller

Prefix	Symb ol	Factor	Scale
Tera	T	10^{12} (1,000,000,000,000)	Trillion
Giga	G	10^9 (1,000,000,000)	Billion
Mega	M	10^6 (1,000,000)	Million
Kilo	k	10^3 (1,000)	Thousand
BASE		1	
Deci	d	10^{-1} (0.1)	One Tenth
Centi	c	10^{-2} (0.01)	One hundredth
Milli	m	10^{-3} (0.001)	One thousandth
Micro	μ	10^{-6} (0.000001)	One millionth
Nano	n	10^{-9} (0.000000001)	One billionth
Pico	p	10^{-12} (0.000000000001)	One trillionth

Large to
Small
Prefix...
Gets
Larger

Practice using SI Units and Prefixes

- Nanometer
- Megasecond
- Centimeter
- Picosecond
- Terabyte

Converting with Metric Prefixes

1 cm = _____ mm

1 MB = _____ TB

8 TB = _____ GB

5 nm = _____ m

20 ks = _____ ms

Prefix	Sym bol	Factor	Scale
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Dimensional Analysis

It takes you 4.8 miles to get to school. How many km does it take? How many m does it take?

STEP 1: Conversion Factors

STEP 2: Set Up

STEP 3: Cancel Units

Dimensional Analysis

- How many seconds are in a year?
- How many inches are in a meter? (1 inch= 2.54 centimeters)

Dimensional Analysis More Practice

- How many meters are in 55 miles? (1 mile = 1760 yards)
- How fast is 55 mph in m/s?

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