MATTER AND ENERGY

Date

Period

Metric Units and Prefixes

You wouldn't measure the thickness of an eyelash with a meter stick. It's just too big to be convenient. For that matter, a meter is too large to be a convenient unit for measuring the thickness of an eyelash. The metric system uses a system of prefixes to show fractions and multiples of the basic units. The basic units are meters (m) to measure distance, grams (g) to measure mass, and liters (L) to measure volume. Some of the important prefixes are shown below:

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Kilo (k)	=	1,000	=	10^{3}
Deci (d)	=	0.1	=	10^{-1}
Centi (c)	=	0.01	=	10^{-2}
Milli (m)	=	0.001	=	10^{-3}
micro (µ)	=	0.000001	=	10^{-6}
nano (n)	=	0.000000001	=	10^{-9}
pico (p)	=	0.000000000001	=	10^{-12}



For each group of values listed below, write the items in order from largest to smallest. Then state whether the values represent distance, mass, or volume.

<u>Values</u>	<u>Order</u>	Type (distance, mass, or volume)
1. 10 km, 10 pm, 10μm, 10 dm		_
2. 0.5 μL, 0.5 nL, 0.5 cL		
3. 1.2 mm, 1.2 km, 1.2 cm		
4. 3.5 cg, 3.5 g, 3.5 ng, 3.5 μg		
5. 0.25 μL, 0.25 dL, 0.25 cL		
6. 7.3 g, 7.3 pg, 7.3 kg, 7.3 mg		
7. 4 pL, 4μL, 4kL, 4mL, 4 dL		
8. 8µm, 8 pm, 8 m, 8 km, 8 nm		
9. 0.1 kL, 0.1 L, 0.1 μL, 0.1 pL		
10. 5.6 dg, 5.6 kg, 5.6 pg, 5.6 μg		