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Basic Metric Prefixes

G-MS 1

This diagram lists the six metric prefixes that we learned about in the video and shows which power of 10 they correspond to. (There are other prefixes for bigger and smaller amounts, but you don't need to know about them for this lesson.*)

kilo	× 1000
hecto	× 100
deka	× 10
base unit	
deci	÷ 10
centi	÷ 100
milli	÷ 1000

Because these six metric prefixes represent amounts that are bigger or smaller than their immediate neighbors by a factor of 10, they map to the base-10 number places shown below. This diagram can help you understand the relationship between these basic metric units.

***Note:** There are metric units that are larger and smaller than these units, and they are separated by factors of 1,000. But in this lesson, we're only focusing on the six prefixes shown.

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Basic Metric Unit Relationships

G-MS 2

Instructions: Fill in the blanks. (You can use the chart on page 1 to help you)

1. A kilometer is equal to 1,000 meters.
2. A dekameter is equal to _____ meters.
3. A meter is equal to _____ centimeters.
4. A centimeter is equal to _____ millimeters.
5. A meter is equal to _____ millimeters.
6. A hectometer is equal to _____ meters.
7. A meter is equal to _____ decimeters.
8. A kilometer is equal to _____ hectometers.

Instructions: Fill in the blanks. (You can use the chart on page 1 to help you)

1. A millimeter is equal to $\frac{1}{1,000}$ of a meter. or one-thousandth
2. A decimeter is equal to _____ of a meter.
3. A centimeter is equal to _____ of a meter.
4. A meter is equal to _____ of a kilometer.
5. A meter is equal to _____ of a hectometer.
6. A meter is equal to _____ of a dekameter.
7. A millimeter is equal to _____ of a centimeter.
8. A centimeter is equal to _____ of a decimeter.

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Basic Metric Unit Conversions

G-MS 3

Instructions: Multiply or divide by powers of 10 to convert these measurements to the units shown. Use the chart on page 1 to remind yourself of the relationships between metric units. (Note: Because multiplying or dividing by powers of 10 can be thought of as shifting the decimal point, the decimal shift corresponding to the math operation is also shown.)

		math	decimal shift
1	35 meters = 3,500 centimeters	35 × 100 = 3,500	2, right
2	120 milligrams = 0.12 grams	120 ÷ 1,000 = 0.12	3, left
3	15 centimeters = _____ meters		
4	3.4 grams = _____ milligrams		
5	0.5 kilograms = _____ grams		
6	21 centimeter = _____ decimeters		
7	6,800 grams = _____ kilograms		
8	10.4 centimeters = _____ meters		
9	0.03 grams = _____ centigrams		
10	1,375 meters = _____ kilometers		
11	7 meters = _____ kilometers		
12	8.5 milligrams = _____ grams		