

Name: \_\_\_\_\_

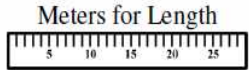
Period: \_\_\_\_\_

# Metrics

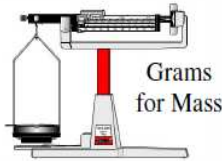
## Metric System

For everyday measuring in the United States, we use the British system of pounds, gallons, and feet. The rest of the world and science uses the easier metric system.

## Basic Units



Meters for Length



Grams for Mass



Liters for Volume

## 7 Steps for Conversions

### Examples

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

## Most Common Prefixes

*There are other prefixes, but these are the most common ones used in science.*

(M) Mega = 1,000,000	So, 1 Megaliter (ML) = 1,000,000 liters
(k) Kilo = 1000	So, 1 Kilogram (kg) = 1000 grams
(c) Centi = 1/100th	So, 100 Centimeter (cm) = 1 meter
(m) Milli = 1/1000th	So, 1000 Milliliter (ml) = 1 liter
(μ) Micro = 1/1,000,000th	So, 1,000,000 Micrometer (μm) = 1 meter

### BASE

## Using Conversion Ratios

## A Decimal System

You can convert between metric units by simply moving the decimal the correct number of places.

*Just move the decimal!*



**REMEMBER:**  
"Left for Larger"  
Larger Prefix: Move the Decimal Left.

*Notice how many times the decimal moves between each prefix.*

- 1 megameter (Mm) =
- 1000.0
- 1000000.0
- 100000000.0
- 1000000000.0
- 1000000000000.0

## How Big Are They?

Volume

1 liter = just bigger than a quart  
 1 mL = volume of a small marble



*It's important to have a sense of these units so we are not just talking numbers. A good scientist knows if a number makes sense.*

Mass

1 kg = 2.2 pounds  
 1 gram = 1 dollar bill



LENGTH

1 mm = width of a fingernail  
 1 cm = width of your pinky  
 1 meter = 3.3 ft (just bigger than a yard)  
 1 kilometer = 0.6 miles



Name: \_\_\_\_\_

Period: \_\_\_\_\_

1. Liter 2. Metric System 3. Gram 4. British System 5. Meter	A. Used by science and the rest of the world. B. Basic metric unit of volume. C. Basic metric unit of length. D. System of pounds, feet, and gallons. E. Basic metric unit of mass.	6. Centi- 7. Mega- 8. Milli- 9. Micro- 10. Kilo-	A. Means "one hundredth" (1/100). B. Means "one million" (x 1,000,000). C. Means "one millionth." (1/1,000,000). D. Means "one thousandth" (1/1,000). E. Means "one thousand" (x 1,000).
11. Liter 12. Gram 13. Centimeter 14. Kilometer 15. Meter 16. Kilogram 17. Millimeter		<b>Which would you Use: Meters, Liters, or Grams?</b> 18. To measure how much water is in a pool? _____ 19. To measure the mass of an ice cream cone? _____ 20. To measure the width of a table? _____ 21. To measure the distance a car traveled? _____ 22. To measure how much acid to pour into a beaker? _____ 23. To measure how much powder to put into water? _____	
<b>Which is bigger? (circle it)</b> 24. A centimeter or a megameter? 25. A liter or a microliter? 26. A megagram or a kilogram? 27. A megameter or a micrometer? 28. A milliliter or a microliter? 29. A milligram or a centigram?		<b>Which Direction Does the Decimal Move? (L or R)</b> 30. From centimeters to meters? 31. From megameters to meters? 32. From kilometers to millimeters? 33. From micrometers to millimeters? 34. From millimeters to kilometers?	
<b>How Far and What Direction Does the Decimal Move?</b> 35. <i>Ex: From kilometers to meters? Ans: Right 3 places</i> 36. From meters to centimeters? 37. From micrometers to millimeter? 38. From centimeters to kilometers? 39. From micrometers to megameters? 40. From kilometers to centimeters?		41. How many cents in a dollar? 42. How many years in a century? 43. How many years in a millennium? 44. How many centimeters in a meter? 45. How many millimeters in a meter? 46. How many microliter in a liter? 47. How many meters in a kilometer? 48. How many grams in a megagram?	
49. Convert 3.5 cm to meters  50. Convert 487.3 km to meters  51. Convert 56.32 mm to Dm  52. Convert 765 cl to liters  53. Convert 6258.65 m to km		54. 38 in to cm 2.54 cm = 1 in  55. 600 lb to kg 1 lb = 0.45 kg  56. 32 qt to L 1 qt = 0.95 L  57. 22 yd to m 1 yd = 0.9m  58. 190 oz to g 1 oz = 28.35 g	