

Measurement Specifics for Science

(adapted from NECAP Mathematics Assessment GLE's grades 3-8)

The following is a list of the measurement benchmarks and equivalences that **can be used** in mathematics problems across the science domains at each specific grade. In addition to measurement benchmarks identified below students should be expected to use the appropriate units when solving problems involving area, volume, surface area, conversions, and rates (e.g., miles per hour, price per pound, and pounds per square inch) in science.

Connection to the Mathematics GLE is below:

GLE M (G&M)–X–7: **Uses units of measures appropriately and consistently, and makes conversions within systems when solving problems** across the content strands.

Measures	By Grade 2	By Grade 4	End of Grade 8
Length	Unit (accuracy): Inch (to whole inch); Foot (to whole inch); Centimeter (to whole centimeter); Meter (to whole centimeter) Equivalencies: 12 inches in 1 foot; 100 centimeters in 1 meter	Unit (accuracy): Inch (to 1/4 inch); Foot; Centimeter (to 0.5 centimeter); Meter (to 0.5 centimeter); Yard; Mile (use in scale questions); Kilometer (use in scale questions) Equivalencies: 12 inches in 1 foot; 100 centimeters in 1 meter; 3 feet in 1 yard; 36 inches in 1 yard	Units (accuracy): Inch (to 1/16 inch); Foot; Centimeter (to 1/10 centimeter); Meter (to 1/100 meter); Yard; Mile (use in scale and rate questions); Kilometer (use in scale and rate questions) Equivalencies: 12 inches in 1 foot; 100 centimeters in 1 meter; 3 feet in 1 yard; 36 inches in 1 yard; 10 millimeters in 1 centimeter; 1000 millimeters in 1 meter
Time	Unit (accuracy): Hour (to 15 minute interval) Equivalencies: 60 minutes in 1 hour	Unit (accuracy): Hour (to 5 minute interval); Day; Year Equivalencies: 24 hours in 1 day; 7 days in 1 week; 365 days in 1 year; 60 seconds in 1 minute; 60 minutes in 1 hour	Unit (accuracy): Hour (to 1 minute); Day; Year Equivalencies: 24 hours in 1 day; 7 days in 1 week; 365 days in 1 year; 60 seconds in 1 minute; 60 minutes in 1 hour
Temperature	Unit (accuracy): Degree (to 1 degree)	Unit (accuracy): C° and F° (to 1 degree)	Unit (accuracy): C° and F° (to 1 degree)
Capacity		Unit (accuracy): Quart (to whole quart)	Unit (accuracy): Quarts (to 1 ounce); Gallon; Pint; Liter Equivalencies: 32 ounces in 1 quart; 4 quarts in 1 gallon; 2 pints in 1 quart; 1000 milliliters in 1 liter
Mass		Unit (accuracy): Kilogram (to whole kilogram); Gram (to whole gram)	Unit (accuracy): Kilogram; Gram (to 1/10 gram)
Weight		Unit (accuracy): Pound (to whole pound)	Unit (accuracy): Pound (to 1 ounce) Equivalencies: 16 ounces in 1 pound
Angles and Rotation			Unit (accuracy): Degree (to 2 degrees) Equivalencies: 360° in 1 circle; 90° in 1 right angle