

Illinois Mathematics Goals/Standards/Benchmarks Grade 8	Common Core Mathematics Domains/Clusters/Standards Grade 8	National Essential Skills Study (NESS) Rankings		NESS	ISAT	Priority
Units, Tools, Estimation, and Applications		Rank				
7.8.01 Select and use appropriate standard units and tools to solve measurement problems, including measurements of polygons and circles.	<u>Geometry</u> Understand and apply the Pythagorean Theorem. 7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres. 9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	M8	Solve problems using units of metric measure and convert between metric and English/customary units.	H	M	H
		M9	Compute the perimeter and area of common two-dimensional figures.			
		M12	Understand accuracy and precision of measurement, round off numbers according to the correct number of significant figures, and determine percent error.			
		M18	Understand the properties of circles (radius, arc, diameter, chord, secant, and tangent) and apply circle quantities (lengths of line segments, angle measure within a circle, circumference, and area) in problem-solving situations.			
7.8.02 Solve problems involving perimeter/circumference and area of polygons, circles, and composite figures using diagrams, models, and grids or by measuring or using given formulas (may include sketching a figure from its description).	<u>Geometry</u> Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres. 9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	M9	Compute the perimeter and area of common two-dimensional figures.	H	H	H
		M18	Understand the properties of circles (radius, arc, diameter, chord, secant, and tangent) and apply circle quantities (lengths of line segments, angle measure within a circle, circumference, and area) in problem-solving situations.			

Illinois Mathematics Goals/Standards/Benchmarks Grade 8	Common Core Mathematics Domains/Clusters/Standards Grade 8	National Essential Skills Study (NESS) Rankings		NESS	ISAT	Priority
		Rank				
7.8.03 Compare and estimate length (including perimeter/circumference), area, volume, weight/mass, and angles (0° to 360°) using referents.	<i>There is no Illinois Mathematics Benchmark-Common Core alignment.</i>	M9	Compute the perimeter and area of common two-dimensional figures.	H	H	H
		M12	Understand accuracy and precision of measurement, round off numbers according to the correct number of significant figures, and determine percent error.			
		M15	Classify angles by measure (acute, right, obtuse, and straight) and understand angle relationships (supplementary, complementary, and vertical).			
		M18	Understand the properties of circles (radius, arc, diameter, chord, secant, and tangent) and apply circle quantities (lengths of line segments, angle measure within a circle, circumference, and area) in problem-solving situations.			
		M26	Know the classification and properties of three-dimensional figures (prisms, rectangular solids, pyramids, right circular cylinders, cones, and spheres) and be able to compute the volume and surface area of common solids.			
7.8.04 Solve problems involving the volume or surface area of a right rectangular prism, right circular cylinder, or composite shape using an appropriate formula or strategy.	<p>Geometry Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres. 9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.</p>	M26	Know the classification and properties of three-dimensional figures (prisms, rectangular solids, pyramids, right circular cylinders, cones, and spheres) and be able to compute the volume and surface area of common solids.	M	H	H

Illinois Mathematics Goals/Standards/Benchmarks Grade 8	Common Core Mathematics Domains/Clusters/Standards Grade 8	National Essential Skills Study (NESS) Rankings		NESS	ISAT	Priority
		Rank				
7.8.05 Solve problems involving unit conversions within the same measurement system for length, weight/mass, capacity, square units, and measures expressed as rates (e.g., converting feet/second to yards/minute).	<i>There is no Illinois Mathematics Benchmark-Common Core alignment.</i>	M8	Solve problems using units of metric measure and convert between metric and English/customary units.	H	M	H
		M13	Use the technique of dimensional analysis to convert units of measure (e.g., kilometers/hour to meters/minute) and apply ratios in real-world situations (e.g., scale drawings).			
7.8.06 Solve problems involving scale drawings, maps, and indirect measurement (e.g., determining the height of a building by comparing its known shadow length to the known height and shadow length of another object).	<p><u>Geometry</u> Understand and apply the Pythagorean Theorem. 7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.</p>	M13	Use the technique of dimensional analysis to convert units of measure (e.g., kilometers/hour to meters/minute) and apply ratios in real-world situations (e.g., scale drawings).	H	M	H