

Subject: Math 8

Year 3

Unit Title	That's a Big Number!	Thinking with Mathematical Models	Triangles and Pythagorean Theorem	Changing and Congruence	Volume and Surface Area	Analyzing Data
SOI	Understanding the relationship and the processes of equivalence and simplification allows for problem-solving.	The relationships modeled by equations can be represented in many forms.	Using logic, we apply the Pythagorean Theorem to measure and model the relationships of right triangles.	We represent equivalent changes of figures through transformation and congruence.	The form of shapes is measured into scaled models.	Quantities are analyzed to establish underlying relationships and make generalizations about patterns and trends in a population.
Key Concept	Relationships	Relationships	Logic	Change	Form	Relationships
Related Concepts	Equivalence Simplification	Models Representation	Measurement Model	Representation Equivalence	Measurement Models	Generalizations Patterns
Global Context	Scientific and Technical Innovation	Scientific and Technical Innovation (explored through systems, models, methods)	Orientation in Time and Space (explored through maps and civil engineering)	Scientific and Technical Innovation (explored through transformations)	Orientation in Time and Space (explored through scale)	Identities Relationships
Criterion	A. i,ii,iii	A. i,ii,iii B. i,ii,iii C. i,ii,iii,iv,v	A. i,ii,iii D. i,ii,iii,iv,v	A. i,ii,iii B. i,ii,iii C.i,ii,iii,iv,v	A. i,ii,iii D. i,ii,iii,iv,v	C.i,ii,iii,iv,v D. i,ii,iii,iv,v
ATL	Communication Self-Management	Communication Thinking	Research	Self-Management	Social Thinking	Communication Self-Management Thinking
Content	Real and rational numbers, powers and exponents, monomials, scientific notation, roots, 2 step equations, equations with variables on both sides	2 step equations, multi-step equations, slope, line intercepts, writing and graphing linear equations, systems of equations, linear and nonlinear functions, quadratics	Parallel lines, geometric proofs, triangles, polygons and angle, Pythagorean Theorem, distance formula	Translations, reflections, rotations, dilations, congruent figures, indirect measurement, slope and similar triangles, area and perimeter of similar figures	Volume of cylinders, cones, spheres, surface area of cylinders and cones, changes in scale/dimension	Scatterplots, lines of best fit, linear and nonlinear association, descriptive statistics, measures of variation, data distributions