

GRADE 8 Shape and Space Specific Outcomes	Key Concepts in Geometry and Space underpinning Curriculum Outcomes from FSIM: Geometry and Space Resource Book	Sample Diagnostic Tasks and Activities	Sample Learning Tasks Selected from FSIM: Geometry and Space Resource Book (link to online document)	Math Station Ideas:
SS8.1 Demonstrate understanding of the Pythagorean Theorem concretely or pictorially and symbolically and by solving problems.	Reason Geometrically KU3: • There are special words, phrases, and symbols that help us to think about and describe the shape and structure of things. Reason Geometrically KU4: • People have developed useful ways to classify shapes. Knowing that a shape is one of the standard types can tell us a lot about it. Computations KU6: • There are some special calculating methods that we can use for calculations we find hard to do in our head. Computations KU10: • Thinking about what makes sense helps us to check and interpret the results of calculations.		Geometry and Space, p. 205 • Glossary • Chart of Words • Geometric Symbols Geometry and Space, p. 219 • Sorting Triangles	Exploring Square Roots (online interactive) The Pythagorean Spiral (printable) Pythagorean Theorem Jeopardy (online interactive) Pythagorean Theorem Game (online interactive) Pythagorean Theorem Lesson, Manipulative, Questions, Problems, and Challenge (online interactive) "Finding Pythagorean Triples: 3-4-5 in Disguise" p. 282 TS-CM 6-8

GRADE 8 Shape and Space Specific Outcomes	Key Concepts in Measurement underpinning Curriculum Outcomes from FSIM: Measurement Resource Book <i>Two</i> and Operation Sense	Sample Diagnostic Tasks and Activities	Sample Learning Tasks Selected from FSIM: Geometry and Space Resource Book (link to online document) <i>AND</i> Measurement Resource Book Two (link to online document)	Math Station Ideas:
SS8.2 Demonstrate understanding of the surface area of 3-D objects limited to right prisms and cylinders (concretely, pictorially, and symbolically) by: • analyzing views • sketching and constructing 3-D objects, nets, and top, side, and front views • generalizing strategies and formulae • analyzing the effect of orientation • solving problems.	Represent Shape KU1: • When we copy and make figures and objects, we need to think about how the whole thing looks and about how the parts relate to each other and to the whole. Represent Shape KU2: • The net of an object has to have the same component parts as the object, and the parts have to be in the correct relationship to each other. Represent Shape KU3: • To understand drawings of objects, we need to combine what we can actually see with what we think is there. Special drawing techniques emphasize different aspects		Geometry and Space, p. 80-82 • Polyhedrons • Solar House • Replicas • Containers Geometry and Space, p. 92-94 • Cereal Container • Mailing Boxes • Number Cube • Number “Cubes” • Moving Faces • Coloured Cube • Templates • Solids Game • Different Nets • Folding Nets • Identical Boxes • Message Prism Geometry and Space, p. 106-109 • Drawing a Cube • Building Houses • Carton and Cup • Four-Cube Houses	Surface Area and Volume (online interactive) Cubes (online interactive) Interactives Geometry: 3D Shapes (online interactive; imperial units) “Making ‘To-Go’ Boxes” p. 316 TS-CM 6-8

	of an object. Indirect Measure KU1: • For certain types of shapes, we can describe the relationship between the lengths of their edges and their perimeters, areas, and volumes. Computations KU6: • There are some special calculating methods that we can use for calculations we find hard to do in our head.		• Cardboard Box • Vanishing Points Measurement Book <i>Two</i>, p. 32-38 • House Plans • Triangle in a Rectangle • Five Triangles • Rearranging Parallelograms • Circles • Fringing Operations, pages 170-171 • Comparing Strategies • Which Is Easier?	
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GRADE 8 Shape and Space Specific Outcomes	Key Concepts in Measurement underpinning Curriculum Outcomes from FSIM: Measurement Book <i>One</i>	Sample Diagnostic Tasks and Activities	Sample Learning Tasks Selected from FSIM: Measurement Book One (link to online resource)	Math Station Ideas:
SS8.3 Demonstrate understanding of volume limited to right prisms and cylinders (concretely, pictorially, or symbolically) by: • relating area to volume • generalizing strategies and formulae • analyzing the effect of orientation • solving problems.	Understanding Units KU5: • Measurements of continuous quantities are always approximate. Measurements can be made more accurate by choosing smaller units, subdividing units, and using other strategies. Understanding Units KU6: • Our choice of attribute and unit depends on what we are trying to measure and why. Understanding Units KU8: • The relationship among standard units in the metric system help us to judge size, move between units, and do computations. Direct Measure KU5: • Units are quantities and so we can use different representations of the same unit so long as we do not change the quantity.		Measurement <i>One</i>, p.68-69 • Calibrating Containers • Sorting Cards Measurement <i>One</i>, p.76-77 • Carpet and Paint • Measuring Surface Area and Volume Measurement <i>One</i>, p.96-99 • Mass, Volume, and Capacity • Length and Square Units • Length and Cubic Units Measurement <i>One</i>, p.164 • Same Volume	Khan Academy: Volume and Surface Area (online interactive) Surface Area and Volume (online interactive) Cubes (online interactive) Interactives Geometry: 3D Shapes (online interactive; imperial units) “Fixed Volume: Comparing Prisms” p. 319 TS-CM 6-8 “Which Silo Holds More?” p. 319-320 TS-CM 6-8

GRADE 8 Shape and Space Specific Outcomes	Key Concepts in Measurement underpinning Curriculum Outcomes from FSIM: Geometry and Space Resource Book	Sample Diagnostic Tasks and Activities	Sample Learning Tasks Selected from FSIM: Geometry and Space Resource Book (link to online document)	Math Station Ideas:
SS8.4 Demonstrate an understanding of tessellation by: • explaining the properties of shapes that make tessellating possible • creating tessellations • identifying tessellations in the environment.	Represent Transformation KU1: • We can imagine how a thing will look after we move all or part of it or change our view of it. Represent Transformation KU2: • We can move things around in space by reflecting, translating and rotating. These do not change size or shape. Represent Transformation KU4: • Symmetrical things have component parts which can be matched by rotating, reflecting, or translating.		Geometry and Space, 126-129 • Tessellate 1 • Tessellate 2 • Template Geometry and Space, 139-142 • Hexomino Pairs • Border Pattern • Shape Shifter • Centre of Rotation • Tessellation • Three Tessellating Tiles • Scalene Triangle • Quadrilaterals • Paper Square Geometry and Space, 162-163 • Regular Polygons • Graphics Programs • Venn Diagram • Rotational Designs • World Art • Rotational Symmetry	“Altering a Parallelogram to Create and Escher-Like Design” p. 284-285 TS-CM 6-8 Tessellation Creator (online interactive) Tessellation Interactivity (online interactive) Create a Tessellation (printable)