Geometry 2 ½ weeks - References:

Nelson Chapter 8 pages 207 - 233 Chapter 11 pages 319 - 349 Chapter 14 Rotations 418 - 465

Math Makes Sense Chapter

Overarching learning goal (OLG) - Students develop and apply spatial reasoning skills

Grade 6 Math Program - Term 2 - Unit 5 Geometry

|  |
| --- |
| **Students Apply Reasoning Skills to Sort and Classify Shapes** |
| **WODB -** |
| **Learning Goals:**I am learning the geometric properties of quadrilaterals so I can sort and classify them. Provide students with a variety of 2D shapes to sort by a category of their choosing - label classificationsVan de Walle Blackline masters - 43, 44, 45, 46Debrief flipcharts **Day 1** - 1.1 What’s my Shape?Marion Small Making Math Meaningful (MMM) - pg 351Polygon Shape Song<https://youtu.be/69lfTURDles>Shape Rap - Triangle, Hexagon, Quadrilateral<https://youtu.be/meaGjrKWGFQ><https://www.youtube.com/watch?v=yiREqzDsMP8>(From Math Antics - Quadrilaterals - first 6:00)<https://www.youtube.com/watch?v=mLeNaZcy-hE>(From Math Antics - triangles: a review for a selected group of students as needed)<https://www.youtube.com/watch?v=IaoZhhx_I9s>(From Math Antics - polygons: a review for a selected group of students as needed)**Game - name the polygon** <http://www.math-play.com/types-of-poligons.html>**Success Criteria:**I can classify quadrilaterals.I can sort quadrilaterals based on geometric properties (e.g, symmetry, angles, number of sides)I can use a variety of tools and strategies to show my thinking. | show my thinking.**Day 2 -** What’s my Shape?Draw/identify a shape according to verbal descriptions:**1.1 What’s my Shape?****And/Or play Polygon Capture Game -** [**http://illuminations.nctm.org/lesson.aspx?id=665**](http://illuminations.nctm.org/lesson.aspx?id=665)**1.2 Chart: Classification of Polygons** (See sheets in geometry folder)**Exit Ticket #1 RPM Card #4** **Multiple Choice (20 minutes max?)** | I am learning to sort polygons based upon symmetry.  Symmetry Statements - see pageMarion Small MMM pg 354Paper foldPattern blocks and mirrors - reflect horizontal and vertical symmetry Geoboards online <http://www.mathplayground.com/geoboard.html>MMM pg 355**Guide to Geometry and Spatial Sense -** Alphabet Rotational Symmetry Pg 236Follow up exercise pg 237**Math Makes Sense - pages 271****Success Criteria:**I can identify number of lines of symmetry in a polygon.I can identify order of rotational symmetry in a polygon.I can sort polygons based upon lines and rotational symmetry.I can use a variety of tools to show my thinking.**Day 3** - 1.1 What’s my Shape?**1.3 Reflective Symmetry Statements - True, False, Sometimes/Depends**Homework: take a picture of a shape, identify any lines of symmetry, classification of the shape (e.g., polygon, quadrilateral) post in Seesaw and share in class**Exit Ticket #2 PRM Card #5 Multiple Choice**  | <http://www.slcschools.org/departments/curriculum/fine-arts/documents/Mosaics-Symmetry-and-Tessellations.pdf>(Rotational symmetry p. 18 and Mosaics for culminating task p6) | I am learning to measure, construct and classify angles. Angle Video - how to use a protractor<https://youtu.be/KtAYV2FqdBE>Minds on Sphero angle challenge:**Success Criteria:**I can measure angles up to 180⁰ using a protractor.I can construct angles up to 180⁰ using a protractor.I can classify angles as acute, right, obtuse or straight.Game: Estimating angles: <http://www.mathplayground.com/alienangles.html>**Exit Ticket #3** EQAO 2015/16 Q#11Quadrilateral, angles and lines of symmetry**Exit Ticket #4** EQAO 2015/16 Q#13 Classification based on side, angles, lines of symmetry parallel sides |
| **Students Represent 2D & 3D Shapes and Geometric Properties** |
| Relationships/Building/Sketching/Moving - using variety of tools; protractor, grid paper, isometric grid paper, tissue paper, computer software |
| I am learning to build 3D shapes when given isometric sketches or different views **Geometry and Spatial Sense, Grades 4-6** - pages 191-199 - lessons on drawing 3D figures and different views of 3D objects**Success Criteria:*** I can build a 3D model given isometric sketches and views
* I can replicate a base plan (see Marion Small pg110)

 Cube activity → students will get cubes and build layer by layer - including same colours - in partners they will replicate each other's model. Provide students with Isometric sketches and have them build it with the cubes. **1.4 Isometric** Provide students with different views have them built with cubes the shape. Exit Ticket # 4 - RPM Card 6 Exit Ticket # 5 - EQAO #6 | Sketching - 3D shapesI am sketching 3D shapes created from cubes given top, right and side views **Success Criteria:*** I can draw a 3D shape using dot paper, or tinkercad software
* I can sketch multiple views of 3D shape - top side, front

**Video** - drawing 3d shapes on isometric dot paper - <http://www.math-play.com/types-of-poligons.html>Students will build a model and sketch Top, Side, and Front views of their models Using Tynker - students will get all around view in order to work with different points of view.  | I am learning to describe how a coordinate system represents locationI am learning how to coordinate plot points in 1st quadrant **Success Criteria:*** I can plot coordinate pairs in the 1st quadrant
* I can explain how a coordinate system represents location

**Video - Coordinate Plane Song** [**https://www.youtube.com/watch?v=d6vhjpnfd3c&spfreload=5**](https://www.youtube.com/watch?v=d6vhjpnfd3c&spfreload=5)- See activities for coordinate plane battleship activity. - Use Google maps to show location. Have students explain how coordinate system represents location based upon their findings when exploring Google Maps. Exit Ticket # 10 - EQAO # 17 | I am learning to analyze designs made by reflections, rotations and translations of shapes I am learning to create designs made by reflections, rotations and translations of shapes **Success Criteria:*** I can create designs made by rotation( 90 &/or 180 degrees), reflection and/or translation
* I can describe and identify a design by its rotation (90 &/or 180 degrees), reflection and/or translation

Game: Transformations - <http://www.mathplayground.com/ShapeMods/ShapeMods.html>Exit Ticket # 6 - EQAO # 11 Exit Ticket # 8 - EQAO #3 | **I**  am learning to rotate a shape clockwise/counter clockwise up to 180 degreesI am learning to identify rotationsI am learning to describe rotations**Rotations pts inside, vertex and outside the polygon**[**https://www.mathsisfun.com/geometry/rotation.html**](https://www.mathsisfun.com/geometry/rotation.html)**Rotating Quadrilaterals**[**http://www.mathsisfun.com/geometry/quadrilaterals-interactive.html**](http://www.mathsisfun.com/geometry/quadrilaterals-interactive.html)**Success Criteria:*** I can rotate a shape clockwise or counterclockwise by 90 degrees
* I can rotate a shape with the centre of rotation inside the shape by 90 degrees
* I can rotate a shape with centre of rotation outside by 90 degree
* I can rotate a shape 180
* I can describe rotations clockwise/counter clockwise inside or outside of the shape by 90 & 180 degrees
* I can identify rotations clockwise/counter clockwise inside or outside of the shape by 90 & 180 degrees

Exit Ticket # 7 - EQAO # 4 Exit Ticket # 9 - EQAO # 6  |