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

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| **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 classifications  Van de Walle Blackline masters - 43, 44, 45, 46  Debrief flipcharts  **Day 1** - 1.1 What’s my Shape?  Marion Small Making Math Meaningful (MMM) - pg 351  Polygon 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 page  Marion Small MMM pg 354  Paper fold  Pattern 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 236  Follow 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#11  Quadrilateral, 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 shapes  I 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 location  I 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 degrees  I am learning to identify rotations  I 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 |