Course Title/ Course #: Math Grade 6

Unit Title/ Marking Period # (MP): 4

Start day:

Meetings (Length of Unit): 5 days

Desired Results ~ What will students be learning?
Standards of Learning/ Standards
6.19 The student will investigate and recognize **a) the identity properties for addition and multiplication;** **b) the multiplicative property of zero; and** **c) the inverse property for multiplication.**
Essential Understandings/ Big Ideas
• How are the identity properties for multiplication and addition the same? Different? • For each operation the identity elements are numbers that combine with other numbers without changing the value of the other numbers. The additive identity is zero (0). The multiplicative identity is one (1). • What is the result of multiplying any real number by zero? The product is always zero. • Do all real numbers have a multiplicative inverse? No. Zero has no multiplicative inverse because there is no real number that can be multiplied by zero resulting in a product of one. • Identity elements are numbers that combine with other numbers without changing the other numbers. The additive identity is zero (0). The multiplicative identity is one (1). There are no identity elements for subtraction and division. • The additive identity property states that the sum of any real number and zero is equal to the given real number (e.g., $5 + 0 = 5$). • The multiplicative identity property states that the product of any real number and one is equal to the given real number (e.g., $8 \cdot 1 = 8$). • Inverses are numbers that combine with other numbers and result in identity elements. • The multiplicative inverse property states that the product of a number and its multiplicative inverse (or reciprocal) always

equals one (e.g., $4 \cdot \frac{1}{4} = 1$).

- Zero has no multiplicative inverse.
- The multiplicative property of zero states that the product of any real number and zero is zero.
- Division by zero is not a possible arithmetic operation. Division by zero is undefined.

Key Essential Skills and Knowledge

- Identify a real number equation that represents each property of operations with real numbers, when given several real number equations.
- Test the validity of properties by using examples of the properties of operations on real numbers.
- Identify the property of operations with real numbers that is illustrated by a real number equation.

NOTE: The commutative, associative and distributive properties are taught in previous grades.

Vocabulary

Academic Vocabulary	Content Vocabulary
additive and multiplicative identity property reciprocal additive and multiplicative inverse property multiplicative property of zero	Inverse Real Numbers

Assessment Evidence ~ What is evidence of mastery? What did the students master & what are they missing?

Assessment/ Evidence

Interactive Achievement
Formative Assessment - Brainstorm

Learning Plan ~ What are the strategies and activities you plan to use?

Learning Experiences/ Best Practice

Properties Foldable
Properties Matching game – Using index cards write the names of the properties and examples of each. The students can then match the examples to the correct property.
Students work in groups to create a poster of each of the properties. They will then do an oral presentation explaining their posters.

Text

Virginia Math Connects, Course 1, ©2012, Glencoe/McGraw-Hill

page(s) 289 - 293

Extra Practice page –EP 13 Lesson 5-2

Coach book, 6th Grade Virginia Gold Edition

page(s) 244 – 248

Technology Integrations

Gizmo – Chocomatic - interactive instructional resource

http://www.explorelearning.com/index.cfm?method=cResource.dspDetail&ResourceID=1014

Smart Exchange - interactive skill practice

Properties of Numbers [SMART Notebook lesson]

Resources

Virginia Department of Education

SOL 6.19, 7.16c,d,e – lesson plan page 14

Pick and Choose – lesson plan

Cross Curricular Connection

None

Materials

Manipulatives	Technology Resources	Student Supplies
Index Cards	LCD Projector	Interactive Notebooks
Poster board	Speakers	
Various stickers, straws, string	Computer w/Internet Connection	
Glue		
Scissors		

Course Title/ Course #: Math Grade 6

Unit Title/ Marking Period # (MP): 4

Start day:

Meetings (Length of Unit): 4 days

Desired Results ~ What will students be learning?
Standards of Learning/ Standards
6.12 The student will determine congruence of segments, angles, and polygons.
Essential Understandings/ Big Ideas
• Given two congruent figures, what inferences can be drawn about how the figures are related? • The congruent figures will have exactly the same size and shape. • Given two congruent polygons, what inferences can be drawn about how the polygons are related? • Corresponding angles of congruent polygons will have the same measure. Corresponding sides of congruent polygons will have the same measure. • Congruent figures have exactly the same size and the same shape. • Noncongruent figures may have the same shape but not the same size. • The symbol for congruency is $\cong$. • The corresponding angles of congruent polygons have the same measure, and the corresponding sides of congruent polygons have the same measure. • The determination of the congruence or noncongruence of two figures can be accomplished by placing one figure on top of the other or by comparing the measurements of all sides and angles. • Construction of congruent line segments, angles, and polygons helps students understand congruency.
Key Essential Skills and Knowledge
• Characterize polygons as congruent and noncongruent according to the measures of their sides and angles. • Determine the congruence of segments, angles, and polygons given their attributes. • Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining

points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving practical and mathematical problems.

Vocabulary

Academic Vocabulary		Content Vocabulary	
Congruent Figures	Polygon	Square	Rectangle
Segment	Angle	Parallelogram	Rhombus
Non-congruent Figures	Corresponding Angles	Trapezoid	Pentagon
Parallel	Line Segment	Triangle	Hexagon
		Quadrilateral	Kite
		Rhombi	Octagon
		Decagon	

Assessment Evidence ~ What is evidence of mastery? What did the students master & what are they missing?

Assessment/ Evidence

Interactive Achievement
Formative Assessment- Application Article

Learning Plan ~ What are the strategies and activities you plan to use?

Learning Experiences/ Best Practice

Polygon Sort- sort pictures of polygons by their attributes
Locate corresponding sides and angles of various shapes
Use quadrilateral shapes and protractors to find the sum of the measures of the angles.
Geoboards – Make congruent and non-congruent polygons and explain why they are or are not congruent.

Text

Virginia Math Connects, Course 1, ©2012, Glencoe/McGraw-Hill
page(s) 429 – 433 and 462 -473
Extra Practice page –EP20 -23 Lessons 8-1, 8-2, and 8-3
Coach book, 6th Grade Virginia Gold Edition
page(s) 162 – 168

Technology Integrations

http://www.harcourtschool.com/activity/similar_congruent/

Smart Exchange - interactive skill practice
Similarity and Congruence [SMART Notebook **lesson**] - - interactive skill practice
Congruent and Symmetric Polygons [SMART Notebook lesson] - **interactive** skill practice
Polygons [SMART Notebook lesson] - **- interactive** skill practice
Brain Pop – Polygons – interactive skill practice

Resources

Virginia Department of Education
SOL 6.12, 7.6 – lesson plan pages 33- 73
Side to Side – lesson plan

Other Sites
Study Jams – Congruent Figures
Interactivesites weebly - Angles
Interactivesites weebly – Classify and Sort

Cross Curricular Connection

Reading – *The Greedy Triangle* by Marilyn Burns
Art - Klee: Polygon Detective Inspired by Paul Klee's *Castle and Sun*
Show students an image of the painting *Castle and Sun.* Havethem point out different polygons that they see within the painting. Afterwards, give children construction paper and have them make their own castle. First, they lay out the outline of their castle by drawing rectangles. Next, they draw lines, using a ruler, within their rectangles to create polygons within the rectangular outlines. Then, they look for and color in polygons that have the same number of sides.

Materials

Manipulatives	**Technology Resources**	**Student Supplies**
Polygons	LCD Projector	Interactive Notebooks
Geometric Solids	Speakers	Polygon cards
Attribute Blocks	Computer w/Internet Connection	
Index Cards		
Venn Diagrams		

Course Title/ Course #: Math Grade 6

Unit Title/ Marking Period # (MP): 4

Start day: Review all Objectives

Meetings (Length of Unit): days

Desired Results ~ What will students be learning?	
Standards of Learning/ Standards	
6.1 thru 6.20	
Essential Understandings/ Big Ideas	
ALL	
Key Essential Skills and Knowledge	
ALL	
Vocabulary	
Academic Vocabulary	**Content Vocabulary**
ALL	ALL
Assessment Evidence ~ What is evidence of mastery? What did the students master & what are they missing?	
Assessment/ Evidence	
VDOE – Released Test VDOE - Performance Analysis Interactive Achievement Post Assessments - ARDT Post Test,	
Learning Plan ~ What are the strategies and activities you plan to use?	
Learning Experiences/ Best Practice	
Use materials made throughout the year to review. Print and cut up problems from released tests and glue to file folders or index cards. Vocabulary Review – Using 2 sets of index cards with vocabulary words on one set and definitions on the other the students can play	

swat. Place the definition cards on a table or tape on a wall. Students will break into teams and a word will be called. The first team to swat the definition with a fly swatter wins the point.

Text

Coach book, 6th Grade Virginia Gold Edition

6.1, 6.2, 6.3, and 6.5 – page(s) 57 – 60
6.4, 6.6, 6.7, and 6.8 – page(s) 110 – 113
6.9 and 6.10 - page(s) 151 – 154
6.11, 6.12, and 6.13 – page(s) 177 – 179
6.14, 6.15, and 6.16 – page(s) 224 – 228
6.17, 6.18, 6.19, and 6.20 – page(s) 256 - 259

Technology Integrations

http://www.doe.virginia.gov/testing/sol/released_tests/index.shtml
http://education.jlab.org/solquiz/

Resources

Virginia Department of Education
http://www.doe.virginia.gov/testing/sol/released_tests/index.shtml
http://doe.virginia.gov/testing/sol/practice_items/
http://doe.virginia.gov/testing/test_administration/cat/index.shtml
(CAT Training Test)

Other Sites
http://va.testnav.com/va (ARDT)

Cross Curricular Connection

N/A

Materials

Manipulatives	Technology Resources	Student Supplies
Task Cards	LCD Projector	Interactive Notebooks
File Folder Games	Speakers	Review Packets
Vocabulary Matching Cards	Computer w/Internet Connection	
Review Games and Activities		
Fly Swatters		