**Geometry/Geometry Foundations**

**Syllabus/Nebraska State Standards**

**Centura Public Schools**

**Updated: August 22, 2014**

**Chapter One Lesson Objectives**

1-1 Nets and Drawings for Visualizing Geometry--pg 7 (6-38)

Objective: Make nets and drawing of three-dimensional figures

Nebraska Standard: 12.2.4.a

Centura Standard: 24

1-2 Points, Lines, and Planes--pg 16 (8-58)

Objective: Understand basic terms and postulates

1-3 Measuring Segments--pg 24 (8-40)

 Objective: Find/compare lengths of segments

Nebraska Standards:12.1.2.b, 12.2.5.b, 12.3.3.f, 12.3.3.g, 12.3.3.h

Centura Standards: 4, 27, 51-53

1-4 Measuring Angles--pg 31 (6-32)

Objective: Find/compare measures of angles

Nebraska Standards: 12.1.2.b, 12.2.5.b, 12.3.3.f, 12.3.3.g, 12.3.3.h

Centura Standards: 4, 27, 51-53

1-5 Exploring Angle Pairs--pg 38 (8-40)

Objective: Identify special angle pairs and use to find angle measures

Nebraska Standard: 12.3.3.l

Centura Standard: 57

Mid-Chapter Quiz--pg 41

1-6 Basic Constructions--pg 46 (7-30)

Objective: Make basic constructions

Nebraska Standards: 12.2.4.a, 12.3.3.l

Centura Standards: 24, 57

1-7 Midpoint and Distance Formulas--pg 54 (6-56)

Objective: Use Midpoint and Distance Formulas

Nebraska Standard: 12.2.2.b

Centura Standard: 19

1-8 Perimeter, Circumference, and Area--pg 64 (8-46)

Objective: Find perimeter/circumference/area of basic shapes

Nebraska Standards: 12.2.4.b, 12.2.5.b, 12.3.3.o

Centura Standards: 25, 27, 60

Quiz

Chapter 1 Test Review (pg 75)

Chapter 1 Test

Chapter Two Lesson Objectives

2-1 Patterns and Inductive Reasoning—pg 85 (6-30)

Objective: Use inductive reasoning to make conjectures

Nebraska Standard: 12.3.3.l

Centura Standard: 57

2-2 Recognize/write conditional statements and their parts—pg 93 (5-24)

Objective: Recognize conditional statements and their pairs

 Write converses, inverses, and contrapositive of conditionals

Nebraska Standards: 12.2.1.a, 12.2.1.f, 12.3.3.i

Centura Standards: 10, 16, 54

2-3 Bi-Conditionals and Definitions—pg 101 (7-29)

Objective: Write biconditionals and recognize good definitions

Nebraska Standards: 12.2.1.a, 12.2.1.f, 12.3.3.i

Centura Standards: 10, 16, 54

Mid-Chapter Quiz--pg 105

2-4 Deductive Reasoning--pg 110 (6-17)

Objective: Use Law of Detachment and Law of Syllogism

Nebraska Standards: 12.2.1.a, 12.2.1.f, 12.3.3.i

Centura Standards: 10, 16, 54

2-5 Reasoning in Algebra and Geometry--pg 117 (5-24)

 Objective: Connect reasoning in algebra and geometry

 Nebraska Standards: 12.3.3.a, 12.3.3.f, 12.3.3.g, 12.3.3.h

 Centura Standards: 46, 51-53

2-6 Proving Angles Congruent--pg 124 (6-29; 33-35)

Objective: Prove angles congruent

Nebraska Standards: 12.2.1.a, 12.3.3.f, 12.3.3.g, 12.3.3.h

Centura Standards: 10, 51-53

Quiz

Chapter 2 Test Review (pg 133)

Chapter 2 Test

Chapter Three Lesson Objectives

3-1 Lines and Angles--pg 144 (11-42)

Objective: Identify relationships between figures in space

 Identify angles formed by two lines and a transversal

Nebraska Standards: 12.2.1.a, 12.2.1.c, 12.2.1.d

Centura Standards: 10, 13, 14

3-2 Properties of Parallel--pg 153 (7-20; 25-26)

Objective: Prove theorems about parallel lines

 Use properties of parallel lines to find angle measures

Nebraska Standards: 12.2.1.a, 12.2.1.c

Centura Standards: 10, 13

3-3 Proving Lines Parallel--pg 160 (7-29)

Objective: Prove lines parallel

3-4 Parallel and Perpendicular Lines--pg 167 (6-10)

Objective: Relate parallel and perpendicular lines

Nebraska Standards: 12.2.1.a, 12.2.1.c, 12.2.1.d

Centura Standards: 10, 13, 14

3-5 Parallel Lines and Triangles--pg 175 (9-26; 29-33)

Objective: Use parallel lines to prove theorems about triangles

 Find measures of angles of triangles

Nebraska Standards: 12.2.1.c, 12.4.3.e, 12.2.1.f

Centura Standards: 13, 16, 78

Mid-Chapter Quiz (pg 181)

3-6 Constructing Parallel and Perpendicular Lines

Objective: Construct parallel and perpendicular lines

Nebraska Standard: 12.2.4.a

Centura Standard: 24

3-7 Equations of Lines in the Coordinate Plane--pg 194 (8-41)

Objective: Graph/write linear equations

Nebraska Standards: 12.3.1.a, 12.3.1.c, 12.3.1.d, 12.3.1.e, 12.3.1.f

Centura Standards: 33, 35-38

3-8 Slopes of Parallel and Perpendicular Lines--pg 201 (7-38)

Objective: Relate slope to parallel and perpendicular lines

Nebraska Standards: 12.2.1.d, 12.3.1.a, 12.3.1.c, 12.3.1.d, 12.3.1.e, 12.3.1.f

 Centura Standards: 14, 33, 35-38

Quiz

Chapter 3 Test Review (pg 211)

Chapter 3 Test

Chapter Four Lesson Objectives

4-1 Congruent Figures--pg 222 (8-42)

Objective: Recognize congruent figures and corresponding parts

Nebraska Standards: 12.2.1.a, 12.2.1.b

Centura Standards: 11, 12

4-2 Triangle Congruence by SSS and SAS--pg 230 (8-14; 16-17; 24-31)

Objective: Prove triangles congruent using postulates and definitions

Nebraska Standards: 12.2.1.b, 12.2.4.a

Centura Standards: 12, 24

4-3 Triangle Congruence by ASA and AAS--pg 238 (8-18)

Objective: Prove triangles congruent using postulates and definitions

Nebraska Standards: 12.2.1.b, 12.2.4.a

Centura Standards: 12, 24

Mid-Chapter Quiz (pg 243)

4-4 Corresponding Parts of Congruent Triangles--pg 246 (5-13)

Objective: Use triangle congruence and corresponding parts of congruent triangles to prove that parts of two triangles are congruent

4-5 Isosceles and Equilateral Triangles--pg 254 (6-19)

Objective: Use/apply properties of isosceles and equilateral triangles

Nebraska Standards: 12.2.1.a, 12.2.1.d, 12.2.2.d

Centura Standards: 11, 14, 21

4-6 Congruence in Right Triangles--pg 262 (8-13)

Objective: Prove right triangles congruent

Nebraska Standards: 12.2.1.b, 12.2.1.c, 12.2.1.d, 12.2.1.e, 12.2.2.d, 12.2.4.a, 12.4.3.e

Centura Standards: 12-15, 21, 24, 78

4-7 Congruence in Overlapping Triangles--pg 268 (8-16)

Objective: Identify congruent overlapping triangles

Nebraska Standards: 12.2.1.b, 12.2.1.d

 Centura Standards: 12, 14

Quiz

Chapter 4 Test Review (pg 277)

Chapter 4 Test

Chapter Five Lesson Objectives

5-1 Midsegments of Triangles--pg 288 (7-24)

Objective: Use properties of midsegments to solve problems

Nebraska Standards: 12.2.1.a, 12.2.1.d, 12.2.5.b

Centura Standards: 11, 14, 27

5-2 Perpendicular and Angle Bisectors--pg 296 (6-22)

Objective: Use properties of perpendicular bisectors and angle bisectors Nebraska Standards: 12.2.1.a, 12.2.1.c, 12.2.1.d, 12.2.4.a, 12.3.3.l

Centura Standards: 11, 13, 14, 24, 57

5-3 Bisectors in Triangles--pg 305 (7-18)

 Objective: Identify properties of perpendicular bisectors and angle bisectors

Nebraska Standards: 12.2.1.a, 12.2.1.c, 12.2.1.d, 12.2.4.a, 12.3.3.l

Centura Standards: 11, 13, 14, 24, 57

5-4 Medians and Altitudes--pg 312 (8-20)

Objective: Identify properties of medians and altitudes of a triangle

Nebraska Standards: 12.2.1.a, 12.2.1.c, 12.2.4.a

Centura Standards: 11, 13, 24

Quiz

Chapter Six Lesson Objectives

6-1 The Polygon Angle Sum Theorems--pg 356 (7-25; 29-31)

Objective: Find sum of the measures of interior and exterior angles of polygons Nebraska Standard: 12.4.3.e

Centura Standard: 78

6-2 Properties of Parallelograms--pg 364 (9-27)

Objective: Use relations among sides, angles, and diagonals of parallelograms Nebraska Standards: 12.2.1.c, 12.2.1.d

Centura Standards: 13, 14

6-3 Proving that a Quadrilateral is a Parallelogram--pg 372 (7-18; 22-24)

Objective: Determine /prove whether a quadrilateral is a parallelogram

Nebraska Standards: 12.2.1.b, 12.2.2.d, 12.4.3.e

Centura Standards:12, 21, 78

6-4 Properties of Rhombuses, Rectangles, and Squares--pg 379 (7-39; 42-44; 49-54)

Objective: Define/classify/use properties of special types of parallelograms Nebraska Standards: 12.2.1.d, 12.2.2.d

Centura Standards: 14, 21

6-5 Conditions for Rhombuses, Rectangles, and Squares--pg 386 (8-22; 28-30)

Objective: Determine whether a parallelogram is a rhombus or a rectangle Nebraska Standards: 12.2.1.d, 12.2.2.d

Centura Standards: 14, 21

6-6 Trapezoids and Kites--pg 394 (7-24; 28-36)

Objective: Verify/use properties of trapezoids and kites

Nebraska Standards: 12.2.2.d, 12.2.5.b

Centura Standards: 21, 27

Mid-Chapter Quiz (pg 398)

Simplify Radicals (pg 399 (1-15)

6-7 Polygons in the Coordinate Plane--pg 403 (5-30)

Objective: Classify polygons in the coordinate plane

Nebraska Standard: 12.2.2.d

Centura Standard: 21

6-8 Applying Coordinate Geometry--pg 410 (7-12; 17-19; 22)

Objective: Name coordinates of special figures by using properties

 Prove theorems using figures in the coordinate plane

Nebraska Standards: 12.2.1.d, 12.2.2.a, 12.2.2.d

 Centura Standards: 14, 18, 21

Quiz

Chapter 6 Test Review (pg 425)

Chapter 6 Test

Chapter Seven Lesson Objectives

7-1 Ratios and Proportions--pg 436 (9-32; 40-43)

Objective: Write ratios and solve proportions

Nebraska Standard: 12.2.4.b

Centura Standard: 25

7-2 Similar Polygons--pg 444 (9-20; 25-29; 37-38)

Objective: Identify/apply similar polygons

Nebraska Standards: 12.2.1.b, 12.2.2.a, 12.2.5.g

Centura Standards: 12, 18, 32

7-3 Proving Triangles Similar--pg 455 (7-12; 24-26)

Objective: Use similarity postulates

Nebraska Standards: 12.2.1.b, 12.2.1.c, 12.2.2.a, 12.2.4.a, 12.2.4.b, 12.2.5.b

Centura Standards: 12, 13, 18, 24, 25, 27

Mid-Chapter Quiz (pg 459)

7-4 Similarity in Right Triangles--pg 464 (1-6; 9-21)

Objective: Find/use relationships in similar right triangles

Nebraska Standards: 12.2.1.b, 12.2.1.c, 12.2.1.d, 12.2.4.b

Centura Standards: 12-14, 25

7-5 Proportions in Triangles--pg 474 (1-5; 9-22)

Objective: Use similarity theorems

Nebraska Standards: 12.2.1.c, 12.2.1.d, 12.2.4.b

Centura Standards: 13, 14, 25

Quiz

Chapter 7 Test Review (pg 483)

Chapter 7 Test

Chapter Eight Lesson Objectives

8-1 The Pythagorean Theorem and its Converse--pg 495 (1-32)

Objective: Use the Pythagorean Theorem and its converse

Nebraska Standards: 12.2.1.e, 12.2.2.d, 12.2.4.b

Centura Standards: 15, 21, 25

8-2 Special Right Triangles--pg 503 (1-30)

Objective: Use properties of special right triangles

Nebraska Standards: 12.2.1.e, 12.2.2.d, 12.2.4.b

Centura Standards: 15, 21, 25

8-3 Trigonometry--pg 510 (1-36; 40-45; 48-53)

Objective: Use sine, cosine, and tangent to determine side lengths and angle measures

Nebraska Standards: 12.2.1.e, 12.2.4.b

Centura Standards: 15, 25

Mid-Chapter Quiz (pg 514)

8-4 Angles of Elevation and Depression--pg 518 (1-23)

Objective: Use angles of elevation and depression to solve applications

Nebraska Standards: 12.2.1.e, 12.2.4.b, 12.2.5.b

Centura Standards: 15, 25, 27

8-5 Vectors--pg 528 (1-6; 10-21; 23-25)

Objective: Describe/solve problems using vectors

Nebraska Standard: 12.2.1.e

Centura Standard: 15

Quiz

Chapter 8 Test Review (pg 537)

Chapter 8 Test

Chapter Ten Lesson Objectives

10-1 Areas of Parallelograms and Triangles--pg 619 (8-21; 24-35; 37-43)

Objective: Find area of parallelograms and triangles

10-2 Areas of Trapezoids, Rhombuses, and Kites--pg 626 (1-6; 11-25; 27; 29-39)

Objective: Find area of trapezoids, rhombuses and kites

10-3 Areas of Regular Polygons--pg 632 (8-25)

Objective: Find area of regular polygons

10-4 Perimeters and Areas of Similar Figures--pg 638 (9-28)

Objective: Find perimeters/areas of similar polygons

Nebraska Standard: 12.2.5.g

Centura Standard: 32

Mid-Chapter Quiz (pg 642)

10-5 Trigonometry and Area--pg 646 (6-20; 23-28)

Objective: Find areas of regular polygons and triangles using trigonometry

10-6 Circles and Arcs--pg 654 (9-42)

Objective: Find measures of central angles and arcs

 Find circumference and arc length

Nebraska Standard: 12.2.5.e

Centura Standard: 30

10-7 Areas of Circles and Sectors--pg 663 (7-31; 42-47)

 Objective: Find areas of circles, sectors, and segments of circles

10-8 Geometry Probability--pg 671 (8-24)

Objective: Use geometric probability

Quiz

Chapter 10 Test Review (pg 682)

Chapter 10 Test

Chapter Eleven Lesson Objectives

11-1 Space Figures and Cross Sections--pg 692 (6-23)

Objective: Recognize polyhedra and cross sections

11-2 Surface Areas of Prisms and Cylinders--pg 704 (7-19)

Objective: Find surface area of prisms and cylinders

Nebraska Standards: 12.2.5.a, 12.2.5.f

Centura Standards: 26, 31

11-3 Surface Areas of Pyramids and Cones--pg 713 (9-23)

Objective: Find surface area of pyramids and cones

Nebraska Standards: 12.2.5.a, 12.2.5.f

Centura Standards: 26, 31

Mid-Chapter Quiz (pg 716)

11-4 Volumes of Prisms and Cylinders--pg 721 (6-16; 23-25)

Objective: Find volumes of prisms and cylinders

Nebraska Standards: 12.2.5.a, 12.2.5.f

Centura Standards: 26, 31

11-5 Volumes of Pyramids and Cones--pg 729 (5-19; 23-25)

Objective: Find volumes of pyramids and cones

Nebraska Standards: 12.2.5.a, 12.2.5.f

Centura Standards: 26, 31

11-6 Surface Areas and Volumes of Spheres--pg 737 (6-25; 49-51)

Objective: Find surface area/volume of spheres

Nebraska Standards: 12.2.5.a, 12.2.5.f

Centura Standards: 26, 31

11-7 Areas and Volumes of Similar Solids--pg 746 (5-20)

Objective: Find areas and volumes of similar solids

Nebraska Standards: 12.2.5.a, 12.2.5.f, 12.2.5.g

Centura Standards: 26, 31, 32

Quiz

Chapter 11 Test Review (pg 755)

Chapter Twelve Lesson Objectives

12-1 Tangent Lines--pg 767 (6-17)

Objective: Use properties of a tangent to a circle

Nebraska Standard: 12.2.1.g

Centura Standard: 17

12-2 Chords and Arcs--pg 776 (6-10; 13-15)

Objective: Use congruent chords, arcs, central angles, and perpendicular bisectors to chords

Nebraska Standard: 12.2.1.g

Centura Standard: 17

12-3 Inscribed Angles--pg 784 (6-18)

Objective: Find measures of of inscribed angles and angles formed by a tangent and a chord

Nebraska Standard: 12.2.1.g

Centura Standard: 17

Mid-Chapter Quiz (pg 788)

12-4 Angle Measures and Segment Lengths--pg 794 (8-13; 15-20)

Objective: Find measures of angles formed by chords, secants, and tangents

 Find lengths of segments associated with circles

Nebraska Standard: 12.2.1.g

Centura Standard: 17

12-5 Circles in the Coordinate Plane--pg 801 (8-43)

Objective: Write equations of circles and fine center and radii of circles

Nebraska Standard: 12.2.1.g

Centura Standard: 17

Quiz

Chapter 12 Test Review (pg 815)

Chapter 12 Test

FOIL

Factoring

Vocabulary/Standards Recap