# Course Pacing Guide

## Algebra 2
### Pacing Guide
### Glencoe/McGraw-Hill Resources

**Algebra 2 Teacher Textbook Resources**

Textbook Primary Resources:
- Textbook: Glencoe McGraw-Hill Algebra 2
- Teacher Textbook resources: www.connected.mcgraw-hill.com\connected
- Textbook sign in: www.glencoe.com
- Workbook: Study Guide and Intervention Algebra 2

Additional Resources:
- Skills Practice: www.connected.mcgraw-hill.com\connected
- Word Problem Practice: www.connected.mcgraw-hill.com\connected
- Weekly Standards Review – Glencoe McGraw-Hill

Graphic Calculator Activity:

Graphic Calculator Activity (inside booklet)

Additional Technology Teaching Resources

**Interactive Lessons and Powerpoints:**
- www.smarttech.com
- www.discoverystreaming.com
- www.knanacademy.com
- www.youtube.com

Website(s):
- www.teachingtoday.glencoe.com – Gives secondary teachers practical strategies and material that inspire excellence and innovation in teaching.
- Florida FCAT /EOC Standards practice www.fcatexplorer.com

Common Core Standards and Engaging Activities/Projects
www.CPALMS.org - http://www.floridastandards.org/homepage/index.aspx
Reproducible Worksheets
- www.kutasoftware.com
- www.edhelper.com

Ipads and Tutorial and Re-teaching Sites:
- www.mathtv.com
- www.coolmath.com
- www.math.com
- www.regentsprep.org
- www.thatquiz.com

Coaching Resources and FCIM tests
- Data Director: https://www98.achievedata.com/gadsden

**Course Pacing Guide**
Common Core Standards Activity site:
WWW.CPALMS.ORG

**Incorporate Common Core 8 Mathematical Practices**

➢ Make sense of problems and persevere in solving them
➢ Reason abstractly and quantitatively
➢ Construct viable arguments and critique the reasoning of others
➢ Model with mathematics
➢ Use appropriate tools strategically
➢ Attend to precision
➢ Look for and make use of structure
➢ Look for and express regularity in repeated reasoning

**Course Pacing Guide**

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Getting Started with Chapter 0/Prerequiste Chapter  0 | Unit Essential Question:<br>How do you prepare for success in Algebra 2? | |
| Semester:  Semester 1     Grading Period:  1 | | |
| Concept:<br>Section 0-1 Representing Functions<br>Pages P4- P5 | Concept:<br>Section 0-2 Multiply binomials (FOIL)<br>P6-P7 | Concept:<br>Section 0-3 Factoring Polynomials<br>P7-P8 |
| NGSSS Standard(s):<br>MA.912.A.2.4 - Determine the domain and range of a relation | NGSSS Standard(s):<br>MA.912.A.4.2- Add, subtract, and multiply polynomials | NGSSS Standard(s):<br>MA.912.A.4.3- Factor polynomial expressions |
| Common Core Standard(s):<br><br>Domain: Seeing Structure in Expressions<br>A.SSE.1a,1b, 2: Interpret the structure of expressions | Common Core Standard(s):<br><br>Domain: Seeing structure in Expressions<br>A.SSE.1a,1b,2: Interpret the structure of expressions<br><br>A.SSE.4: Write expressions in equivalent forms to solve problems<br><br>Domain: Arithmetic with Polynomials and Rational Expressions<br>A.APR.1: Perform arithmetic operations on polynomials. *Beyond quadratic* | Common Core Standard(s):<br><br>Domain: Arithmetic with Polynomials and Rational Expressions<br>A.APR.1: Perform arithmetic operations on polynomials. *Beyond quadratic*<br><br>A.APR.2,3: Understand the relationship between zeros and factors of polynomials |
| Lesson Essential Question:<br>How do you identify the domain and range of functions? | Lesson Essential Question:<br>How do you apply the distributive property (Foil method) to multiply binomials? | Lesson Essential Question:<br>How do you apply special products method and factors and sum method to factor trinomials?<br><br>How do you simplify rational expressions ? |

| Vocabulary: | Vocabulary: | Vocabulary: |
|---|---|---|
| ❖ Domain<br>❖ Range<br>❖ Quadrants<br>❖ Mapping<br>❖ Functions | ❖ Binomials<br>❖ FOIL method<br>❖ Quadratic<br>❖ Trinomial | ❖ Distributive property<br>❖ Polynomials<br>❖ Trinomials<br>❖ Special products |
| Resources:<br>Common Core Standards and Engaging Activities/Projects<br>www.CPALMS.org -<br>http://www.floridastandards.org/homepage/index.aspx<br><br><br>Reproducible Worksheets<br>• www.kutasoftware.com<br>• www.edhelper.comSee Resource Page for Websites | Resources:<br>Common Core Standards and Engaging Activities/Projects<br>www.CPALMS.org -<br>http://www.floridastandards.org/homepage/index.aspx<br><br><br>Reproducible Worksheets<br>• www.kutasoftware.com<br>• www.edhelper.com | Resources:<br>Common Core Standards and Engaging Activities/Projects<br>www.CPALMS.org -<br>http://www.floridastandards.org/homepage/index.aspx<br><br><br>Reproducible Worksheets<br>• www.kutasoftware.com<br>• www.edhelper.com |

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| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Getting Started with Chapter 0/Prerequiste Chapter  0 | Unit Essential Question: How do you prepare for success in Algebra 2? | |
| Semester:  Semester 1     Grading Period:  1 | | |
| Concept: Section 0-4 The Counting Principle Pages P9-P10 | Concept: Section 0-5 Permutations and Combinations P12-P14 | Concept: Section 0-6 Congruent and Similar Figures P15-P16 |
| NGSSS Standard(s): | NGSSS Standard(s): | NGSSS Standard(s): |
| Common Core Standards: <br><br> Domain: Using Probability to make decisions Model <br> (+) S.MD.6,7  : Use probability to evaluate outcomes of decisions. | Common Core Standard(s): <br><br> Domain: Using Probability to make decisions Model <br> (+) S.MD.6,7  : Use probability to evaluate outcomes of decisions. | Common Core Standard(s): <br> Domain: NONE |
| Lesson Essential Question: How do you use the fundamental counting principle to find outcomes involving independent and dependent events? <br><br> How do you solve problems involving permutations and combinations? | Lesson Essential Question: Apply formulas of permutations and combinations to solve problems. | Lesson Essential Question: How do you reason and identify how to use congruent and similar figures to solve real problems? <br><br> How do you use the Pythagorean theorem to solve real-world problems? |
| Vocabulary: <br><br> ❖ outcome <br> ❖ sample space <br> ❖ event <br> ❖ fundamental counting principle <br> ❖ factorial | Vocabulary: <br><br> ❖ permutation <br> ❖ linear permutation <br> ❖ combination | Vocabulary: <br><br> ❖ Congruent <br> ❖ Similar |

**Course Pacing Guide**

| Resources:<br>Common Core Standards and Engaging Activities/Projects<br>www.CPALMS.org -<br>http://www.floridastandards.org/homepage/index.aspx<br><br><br>Reproducible Worksheets<br>• www.kutasoftware.com<br>• www.edhelper.comSee Resource Page for Websites<br><br><br>Graphic Calculator Activity:<br><br>Graphic Calculator Activity (Use graph booklet or online resource for Texas Instruments calculators to this activity on Counting Principle) | Resources:<br>Common Core Standards and Engaging Activities/Projects<br>www.CPALMS.org -<br>http://www.floridastandards.org/homepage/index.aspx<br><br><br>Reproducible Worksheets<br>• www.kutasoftware.com<br>• www.edhelper.com | Resources:<br>Common Core Standards and Engaging Activities/Projects<br>www.CPALMS.org -<br>http://www.floridastandards.org/homepage/index.aspx<br><br><br>Reproducible Worksheets<br>• www.kutasoftware.com<br>• www.edhelper.com |
|---|---|---|

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Getting Started with Chapter 0/Prerequiste Chapter 0 | Unit Essential Question: How do you prepare for success in Algebra 2? | |
| Semester: Semester 1    Grading Period: 1 | | |
| Concept: Section 0-7 The Pythagorean Theorem Pages P17-P18 | | |
| NGSSS Standard(s): MA.8.G.4-Validate and apply Pythagorean Theorem to find distances in real world situations or between two points on a coordinate plane | | |
| Common Core Standards: Domain: Understand and apply the Pythagorean Theorem 8.G (Eighth grade geometry) | | |
| Lesson Essential Question: How do you use the Pythagorean theorem and its converse to solve problems? How do you find the distance between two points on the coordinate plane to solve problems? How do you find the equation of the circle? | | |
| Vocabulary: ❖ outcome ❖ sample space ❖ event ❖ fundamental counting principle ❖ factorial | | |

| | | |
|---|---|---|
| Resources:<br>Common Core Standards and Engaging Activities/Projects<br>www.CPALMS.org - http://www.floridastandards.org/homepage/index.aspx<br><br><br>Reproducible Worksheets<br>• www.kutasoftware.com<br>• www.edhelper.comSee Resource Page for Websites<br><br>Graphic Calculator Activity:<br><br>Graphic Calculator Activity (Use graph booklet or online resource for Texas Instruments calculators to this activity on Counting Principle) | | |

## Course Pacing Guide

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 1-Equations and Inequalities | Unit Essential Question:<br>Why are expressions, equations, and inequalities useful in the real world? | |
| Semester:  Semester 1    Grading Period:  1 | | |
| Concept:<br>Section 1-1 Expressions and Formulas<br>Pacing section: 2 days | Concept:<br>Section 1-2 Properties of Real Numbers<br>Pacing Section 2-days | Concept:<br>Section 1-3 Solving Equations<br>Pacing Section 2-days |
| NGSSS Standard(s):<br><br>MA.912.A.3.**1** Solve linear equations in one variable that include simplifying algebraic expressions. Also addresses MA.912.A.1.3 and MA.912.A.1.4 | NGSSS Standard(s):<br><br>MA.912.A.3.2 Identify and apply the distributive, associative, and commutative properties and real numbers and the properties of equality. Also addresses MA.912.A.1.1 and MA.912.A.1.4 | NGSSS Standard(s):<br><br>MA.912.A.3.3 Solve literal equations for a specified variable. |
| Common Core Standards:<br><br>Domain:  Reasoning with Equations and Inequalities<br>A.REI.2: Understand and solving equations as a process of reasoning and explain the reasoning.<br><br>A.REI.11 Represent and solve equations and inequalities graphically | Common Core Standard(s):<br><br>Domain:  Reasoning with Equations and Inequalities<br>A.REI.2: Understand and solving equations as a process of reasoning and explain the reasoning.<br><br>A.REI.11 Represent and solve equations and inequalities graphically | Common Core Standard(s):<br><br>Domain:  Reasoning with Equations and Inequalities<br>A.REI.2: Understand and solving equations as a process of reasoning and explain the reasoning.<br><br>A.REI.11 Represent and solve equations and inequalities graphically |
| Lesson Essential Question:<br>How do you apply order of operations to evaluate expressions of various formats and problems?<br><br>How do you solve linear equations to solve real problems? (see word problems) | Lesson Essential Question:<br>How do you classify real numbers and apply the properties of real numbers to evaluate expressions?<br><br>How do you use real number properties to solve problem equations and inequalities | Lesson Essential Question:<br>How do you translate verbal expressions into algebraic expressions and equations, vice versa?<br><br>How do you solve equations using the properties of equality? |

**Course Pacing Guide**

| Vocabulary: | Vocabulary: | Vocabulary: |
|---|---|---|
| ❖ Variables<br>❖ Algebraic expressions<br>❖ Order of operations<br>❖ Formula | ❖ real numbers<br>❖ rational numbers<br>❖ irrational numbers<br>❖ integers<br>❖ whole numbers<br>❖ natural numbers | ❖ Open sentence<br>❖ Equation<br>❖ Solution |

## Course Pacing Guide

**Textbook/Workbook Resources:**

- ✓ Diagnose Readiness: Page 3
- ✓ Check for understanding pg.7
- ✓ Practice Textbook p.7
- ✓ Study Guide and Intervention workbook pages 2-3
- ✓ Differentiated Instruction page 6 (Teacher Edition Activity)
- ✓ Practice Problem solving (word problems in textbook)
- ✓ H.O.T. Problems for Common Core page 9 (43-49)

- ✓ Spiral Review and Skills Review page 10

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

**Textbook/Workbook Resources:**

- ✓ NGSSS Practice (Box) page 10
- ✓ Practice Textbook pp.14-15
- ✓ Check for understanding p.14
- ✓ Study Guide and Intervention workbook pages 4-5
- ✓ Differentiated Instruction page 17 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 16 (53-61)

- ✓ Spiral Review and Skills Review

 Projects: Interactive Whiteboard: Draw a set diagram on the board showing how the set of real numbers is separated into rational and irrational numbers, integers, whole numbers etc. Write a list of 12 real numbers, and chose students to come to the board to drag them into the correct set of



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

**Textbook/Workbook Resources:**

- ✓ NGSSS Practice (Box) page 17
- ✓ Practice Textbook pp.22-23
- ✓ Check for understanding p.22
- ✓ Study Guide and Intervention workbook pages 5-6
- ✓ Differentiated Instruction page 20 & 21 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 24 (62-66)
- ✓ Spiral and Skills Review

 Activity 1: Carousel Around the room
*Using 7 pieces of chart paper: write 1 problem related to this topic on each chart paper with a marker. Have students rotate around the room to solve the problems.

 Activity 2: Have students use chart paper at their station (groups of 3 or 4) and complete up to 3 problems from the lesson. Have students present their answers to other groups. Teacher rotates and assists students.



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

**Course Pacing Guide**

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 1- Equations and Inequalities | Unit Essential Question:<br>Why are expressions, equations, and inequalities useful in the real world? | |
| Semester: Semester 1    Grading Period: 1<br>Pacing: 14 days | | |
| Concept:<br>Section 1-4 Solving Absolute Value Equations<br>Pacing : 2 days | Concept:<br>Section 1-5 Solving Inequalities<br>Pacing: 2 days | Concept:<br>Section 1-6 Solving Compound and Absolute Value Inequalities<br>Section 1-6 Algebra LAB page 40Pacing: 4 days |
| NGSSS Standard(s):<br><br>MA.912.A.3.6 Solve and graph the solutions of absolute value equations and inequalities with one variable. Also addresses MA.912.A.1.4 | NGSSS Standard(s):<br>Reinforcement for:<br>MA.912.A.3.4-Solve and graph simple and compound inequalities in one variable and be able to justify each step in a solution | NGSSS Standard(s):<br>Reinforcement for:<br>MA.912.A.3.4-Solve and graph simple and compound inequalities in one variable and be able to justify each step in a solution.<br><br>MA.912.A.3.6 Solve and graph the solution of absolute value equations and inequalities with one variable.<br><br>LA.912.1.6.1 – English/writing- The student use new vocabulary that is introduced and taught directly |
| Common Core Standards:<br><br>Domain: Reasoning with Equations and Inequalities<br>A.REI.2: Understand and solving equations as a process of reasoning and explain the reasoning.<br><br>A.REI.11 Represent and solve equations and inequalities graphically | Common Core Standard(s):<br><br>Domain: Reasoning with Equations and Inequalities<br>A.REI.2: Understand and solving equations as a process of reasoning and explain the reasoning.<br><br>A.REI.11 Represent and solve equations and inequalities graphically | Common Core Standard(s):<br><br>Domain: Reasoning with Equations and Inequalities<br>A.REI.2: Understand and solving equations as a process of reasoning and explain the reasoning.<br><br>A.REI.11 Represent and solve equations and inequalities graphically |
| Lesson Essential Question:<br>Construct how to evaluate expressions involving absolute values?<br><br>Show how to solve absolute value equations? | Lesson Essential Question:<br>How do you explain the steps to solve one step inequalities?<br><br>How do you solve multi-step inequalities? | Lesson Essential Question: |

| Vocabulary: | Vocabulary: | Vocabulary: |
|---|---|---|
| ❖ Absolute value<br>❖ Empty set<br>❖ Extraneous solution | ❖ Set-builder notation | |
| Resources:<br>✓ NGSSS Practice (Box) page 25<br>✓ Practice Textbook pp.30-31<br>✓ Check for understanding p.30<br>✓ Study Guide and Intervention workbook pages 7-8<br>✓ Differentiated Instruction page 32 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 31 (45-51)<br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Resources:<br><br>✓ NGSSS Practice (Box) page 32<br>✓ Practice Textbook pp.36-37<br>✓ Check for understanding p.36<br>✓ Study Guide and Intervention workbook pages 9-10<br>✓ Differentiated Instruction page 39 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 38 (44-49)<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Resources:<br>✓ NGSSS Practice (Box) page 39<br>✓ Practice Textbook pp.45-46<br>✓ Check for understanding p.45<br>✓ Study Guide and Intervention workbook pages 11-12<br>✓ Differentiated Instruction page 44 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 47 (53-62)<br>✓ Study Guide and Review pp.50-51<br>✓ Practice Test page 53<br>✓ NGSSS Practice page 55-57<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

# Course Pacing Guide

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| Unit Title:  Equations and Inequalities | Unit Essential Question:<br>Why are expressions, equations, and inequalities useful in the real world? |
| Semester:  Semester 1 \| Grading Period:  1 | How do you solve expressions, equations and inequalities? |

| Concept:<br>Chapter 1 Study Guide/ Review and Tests<br>Pacing 2 days | |
|---|---|
| NGSSS Standard(s):<br><br>MA.912.A.3.1 Solve linear equations in one variable that include simplifying algebraic expressions. Also addresses MA.912.A.1.3 and MA.912.A.1.4<br><br>MA.912.A.3.4-Solve and graph simple and compound inequalities in one variable and be able to justify each step in a solution.<br><br>MA.912.A.3.6 Solve and graph the solutions of absolute value equations and inequalities with one variable. Also addresses MA.912.A.1.4 | Common Core Standards:<br><br>Domain:  Reasoning with Equations and Inequalities<br>A.REI.2: Understand and solving equations as a process of reasoning and explain the reasoning.<br><br>A.REI.11 Represent and solve equations and inequalities graphically |
| Vocabulary:<br>Vocabulary check page 49 | Resources:<br>Textbook<br>   ✓  Study Guide and Review page 50-52<br>   ✓  Chapter 4 Practice Test page 53<br>   ✓  Preparing for Standardized Tests page 54-55<br>   ✓  NGSSS Practice page 56-57 |

| Course Code: 1200330 | | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title:  Chapter 2 : Linear Relations and Functions | | Unit Essential Question:<br>How do you identify, graph and sketch graphs of parent functions, including but limited to linear, quadratic and absolute value functions. How do you analyze functions using different representations? | |
| Semester:  Semester 1 | Grading Period:  1<br>Pacing: 24 days | How do you build a function that models a relationship between two quantities and build new functions from existing functions? | |
| Concept:<br>Section 2-1 Relations and Functions<br>Pacing : 2 days | | Concept:<br>Section 2-2 Linear Relations and Functions<br>Pacing: 2 days | Concept:<br>Section 2-3: Rate of Change and Slope<br>Pacing: 4 days |
| NGSSS Standard(s):<br>MA.912.A.10.3-Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities rational or radical expressions or logarithmic or exponential functions) | | NGSSS Standard(s):<br>MA.912.A.2.6- Identify and graph common functions (Including but not limited to linear, rational, quadratic, cubic, radical, absolute value.)<br><br>MA.912.A.10.3-Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities rational or radical expressions or logarithmic or exponential functions) | NGSSS Standard(s):<br>MA.912.A.10.3-Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities rational or radical expressions or logarithmic or exponential functions) |

## Course Pacing Guide

| Common Core Standards: | Common Core Standard(s): | Common Core Standard(s): |
|---|---|---|
| Domain: Interpreting Functions<br>F.IF.4,5,6 Interpret functions that arise in applications in terms of a context. *Emphasize selection of appropriate models*<br><br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function* | Domain: Interpreting Functions<br>F.IF.4,5,6 Interpret functions that arise in applications in terms of a context. *Emphasize selection of appropriate models*<br><br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function*<br><br>Domain: Build a Function<br>F.BF.1b : Build a function that models a relationship between two quantities. *Include all types of functions studied*<br><br>F.BF.3.4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types.* | F.IF.4,5,6 Interpret functions that arise in applications in terms of a context. *Emphasize selection of appropriate models*<br><br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function*<br><br>Domain: Build a Function<br>F.BF.1b : Build a function that models a relationship between two quantities. *Include all types of functions studied* |
| Lesson Essential Question:<br>How do you:<br>Analyze relation and functions?<br><br>Use equations of relations and functions?<br><br>How do you identify and sketch graphs of parent functions? | Lesson Essential Question:<br>How do you identify and construct linear relations and functions and write linear equations in standard form?<br><br>How do you identify and sketch graphs of parent functions? | Lesson Essential Question:<br>How do you find rate of change and determine the slope of a line?<br><br>How do you identify and sketch graphs of parent functions, including quadratics? |
| Vocabulary:<br>❖ One to one function<br>❖ Onto function<br>❖ Discrete relation<br>❖ continuous relation<br>❖ vertical line test<br>❖ independent variable<br>❖ dependent variable<br>❖ Function notation. | Vocabulary:<br>❖ linear relation<br>❖ nonlinear relation<br>❖ linear equation<br>❖ linear function<br>❖ standard form<br>❖ y-intercept<br>❖ x-intercept | Vocabulary: |

| Textbook/Workbook Resources: | Textbook/Workbook Resources: | Resources: |
|---|---|---|
| ✓ Diagnose Readiness pg 59<br>✓ Practice Textbook pp. 64-65<br>✓ Check for understanding p.64<br>✓ Study Guide and Intervention workbook pages 13-14<br>✓ **Differentiated Instruction page 64 (Teacher Edition Activity)**<br>✓ **MORE Differentiated Instruction Activities page 58F in Teacher Edition**<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 66 (35-40) | ✓ NGSSS Practice (Box) page 67<br>✓ Practice Textbook pp.71-73<br>✓ Check for understanding p.71<br>✓ Study Guide and Intervention workbook pages 15-16<br>✓ Differentiated Instruction page 74 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 73 (52-56) | ✓ NGSSS Practice (Box) page 74<br>✓ Practice Textbook pp.79-81<br>✓ Check for understanding p.79<br>✓ Study Guide and Intervention workbook pages 17-18<br>✓ Differentiated Instruction page 78 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 81 (36-40) |
| | Activity 1: Extend learning | Activity 1: |
| |  Drawing and Constructing using graph paper page 75 and writing in Math (Also search websites for more activities on construction of graphs-see resource page) |  Drawing and Constructing using graph paper throughout lesson (Also search websites for more activities on construction of graphs-see resource page) |
|  Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |  Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |  Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |
|  Graphic Calculator Activity |  Use Graphing Calculator Technology |  Use Graphing Calculator Technology |

**Course Pacing Guide**

| Course Code: 1200330 | | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title: Chapter 2:  Linear Relations and Functions | | Unit Essential Question:  How do you Apply functions to problem situations?<br><br>How do you identify, graph and sketch graphs of parent functions, including but limited to linear, quadratic and absolute value functions?<br><br>How do you analyze functions using different representations?<br><br>How do you build a function that models a relationship between two quantities and build new functions from existing functions? | |
| Semester:  Semester 1 | Grading Period:  1<br>Pacing: 18 days | | |
| Concept:<br>Section 2-4 Writing Linear Equations<br>Pacing 5 days | | Concept:<br>Section 2-5 Scatter Plots and Lines of Regression<br>Pacing: 2 days | Concept:<br>Section 2-6: Special Functions<br>Pacing: 2 days |
| NGSSS Standard(s):<br>MA.912.A.3.10- Write an equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, find an equation of a new line parallel to a given line, or perpendicular to a given line, through a given point on the new line | | NGSSS Standard(s):<br>MA.912.A.3.11: Write an equation of a line that models a data set and use the equation or the graph to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change. | NGSSS Standard(s):<br>MA.912.A.2.5 Graph absolute value equations and inequalities in two variables.<br><br>MA.912.A.2.9- Recognize, interprets, and graph functions defined piecewise, with and without technology. Also addresses MA.912.A.2.6 |

## Course Pacing Guide

| Common Core Standards: | Common Core Standard(s): | Common Core Standard(s): |
|---|---|---|
| Domain: Interpreting Functions<br>F.IF.4,5,6 Interpret functions that arise in applications in terms of a context. *Emphasize selection of appropriate models*<br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function* | Domain: Interpreting Functions<br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function*<br><br>Domain: Build a Function<br>F.BF.1b : Build a function that models a relationship between two quantities. *Include all types of functions studied*<br>F.BF.3.4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types.*<br><br>Domain: Interpreting Categorical and Quantitative Data<br>S.ID.4 Summarize, represent, and interpret data on a single count or measurement variable | F.IF.4,5,6 Interpret functions that arise in applications in terms of a context. *Emphasize selection of appropriate models*<br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function*<br><br>Domain: Build a Function<br>F.BF.1b : Build a function that models a relationship between two quantities. *Include all types of functions studied* |
| Lesson Essential Question:<br>How do you…<br>-Write an equation of a line given the slope and a point on the line<br>-Write an equation of a line parallel or perpendicular to a given line<br>-Apply functions to problem situations? | Lesson Essential Question:<br>How do you Use scatter plots and prediction equations?<br><br>How do you model data using lines of regression?<br><br>How do you create models from data and use the models to make decisions and critical judgments? | Lesson Essential Question:<br>How do you write and graph piecewise defined functions and write and graph step and absolute value functions?<br><br>How do you identify and sketch graphs of parent functions, including quadratic functions |
| Vocabulary:<br>❖ Slope-intercept form<br>❖ Point-slope form<br>❖ Parallel<br>❖ perpendicular | Vocabulary:<br>❖ linear relation<br>❖ nonlinear relation<br>❖ linear equation<br>❖ linear function<br>❖ standard form<br>❖ y-intercept<br>❖ x-intercept | Vocabulary:<br><br>❖ piece-wise defined functions<br>❖ piece-wise linear function<br>❖ step function<br>❖ greatest integer function<br>❖ absolute value function |

# Course Pacing Guide

| Textbook/workbook Resources: | Textbook/Workbook Resources: | Textbook/Workbook Resources: |
|---|---|---|
| ✓ NGSSS Practice (Box) pg 82<br>✓ Practice Textbook pp. 86-87<br>✓ Check for understanding p.86<br>✓ Study Guide and Intervention workbook pages 19-20<br>✓ Differentiated Instruction page 89 (Teacher Edition Activity)<br>✓ Mid-chapter Quiz pg. 91<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 88(37-42) | ✓ NGSSS Practice (Box) page 89<br>✓ Practice Textbook pp.95-96<br>✓ Check for understanding p.95<br>✓ Study Guide and Intervention workbook pages 21-22<br>✓ Differentiated Instruction page 94 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 97 (12-16) | ✓ NGSSS Practice (Box) page 98<br>✓ Practice Textbook pp.104-105<br>✓ Check for understanding p.104<br>✓ Study Guide and Intervention workbook pages 23-24<br>✓ Differentiated Instruction page 104 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 106 (40-44) |
| Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG<br><br>Use Graphing Calculator Technology | Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG<br><br>Use Graphing Calculator Technology | Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG<br><br>Use Graphing Calculator Technology |

| Course Code: 1200330 | | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title:  Chapter 2 : Linear Relations and Functions | | Unit Essential Question:<br><br>How do you identify, graph and sketch graphs of parent functions, including but limited to linear, quadratic and absolute value functions?<br><br>How do you analyze functions using different representations?<br><br>How do you build a function that models a relationship between two quantities and build new functions from existing functions? | |
| Semester:  Semester 1 | Grading Period:  1<br>Pacing: 18 days | | |
| Concept:<br>Section 2-7 Parent Functions and Transformations<br>Pacing 4 days | | Concept:<br>Section 2-8 : Graphing Linear and Absolute Value Inequalities | |
| NGSSS Standard(s):<br>MA.912.A.2.6 Identify and graph common functions (including but not limited to linear, rational, quadratic, cubic, radical, absolute value).<br><br>MA.912.A.2.10 Describe and graph transformation of functions. Also addresses MA.912.A.2.5 | | NGSSS Standard(s):<br>MA.912.A.2.5 Graph absolute value equations and inequalities in two variables. | |

## Course Pacing Guide

| Common Core Standards: | Common Core Standard(s): | |
|---|---|---|
| Domain: Interpreting Functions<br>F.IF.4,5,6 Interpret functions that arise in applications in terms of a context. *Emphasize selection of appropriate models*<br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function* | Domain: Interpreting Functions<br>F.IF.4,5,6 Interpret functions that arise in applications in terms of a context. *Emphasize selection of appropriate models*<br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function*<br><br>Domain: Build a Function<br>F.BF.1b : Build a function that models a relationship between two quantities. *Include all types of functions studied*<br>F.BF.3.4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types.* | |
| Lesson Essential Question:<br>How do you identify and use parent functions and describe transformations of functions?<br><br>How do you analyze a situation modeled by a rational function, formulate an equation or inequality, and solve the problem? | Lesson Essential Question:<br>How do you graph linear and absolute value inequalities?<br><br>How do you formulate systems of inequalities? | |
| Vocabulary:<br>❖ Family of graphs<br>❖ Parent graph<br>❖ Parent function<br>❖ Constant function<br>❖ Identity function<br>❖ Quadratic function<br>❖ Translation<br>❖ Reflection<br>❖ Line of reflection<br>❖ Dilation | Vocabulary:<br>❖ Linear inequality<br>❖ boundary | |

| Textbook/workbook Resources: | Resources: | |
|---|---|---|
| ✓ NGSSS Practice (BOX) page 107<br>✓ Practice Textbook pp.113-114<br>✓ Check for understanding p.113<br>✓ Study Guide and Intervention workbook pages 25-26<br>✓ Differentiated Instruction page 111 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 115 (43-47)<br><br>❖ Other Resources on Resource Page<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | ✓ NGSSS Practice (Box) page 116<br>✓ Practice Textbook pp.119-120<br>✓ Check for understanding p.119<br>✓ Study Guide and Intervention workbook pages 27-28<br>✓ Differentiated Instruction page 121 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 120(33-37)<br><br>❖ Other Resources on Resource Page<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | |

# Course Pacing Guide

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 2 : Linear Relations and Functions | Unit Essential Question:<br><br>How do you identify, graph and sketch graphs of parent functions, including but limited to linear, quadratic and absolute value functions?<br><br>How do you analyze functions using different representations?<br><br>How do you build a function that models a relationship between two quantities and build new functions from existing functions? | |
| Semester:  Semester 1 | Grading Period:  1<br>Pacing: 18 days | |
| Concept:<br>Chapter 2 Study Guide /Review and Tests<br>Pacing: 2 days | Concept:<br>Chapter 2 Study Guide /Review and Tests<br>Pacing: 2 days | |
| NGSSS Standard(s):<br><br>MA.912.A.2.6 Identify and graph common functions (including but not limited to linear, rational, quadratic, cubic, radical, absolute value).<br><br>MA.912.A.2.10 Describe and graph transformation of functions. Also addresses MA.912.A.2.5<br><br>NGSSS Standard(s):<br>MA.912.A.2.5 Graph absolute value equations and inequalities in two variables | Common Core Standard(s):<br><br>Domain: Interpreting Functions<br>F.IF.4,5,6 Interpret functions that arise in applications in terms of a context. *Emphasize selection of appropriate models*<br>F.IF.F.7b,7c,7e,8,9: Analyze functions using different representations. *Focus on using key features to guide selection of appropriate type of model function*<br><br>Domain: Build a Function<br>F.BF.1b : Build a function that models a relationship between two quantities. *Include all types of functions studied*<br>F.BF.3.4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types.*. | |
| Vocabulary Check page 122 | NGSSS Standard(s):<br> ✓  Chapter 2 Study Guide and Review pg 122-123<br> ✓  Chapter 2 Test page 127<br> ✓  NGSSS Practice Test Cumulative chapters 1 and 2 (pages 130-131 | |

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 3:<br>Systems of Equations and Inequalities | Unit Essential Question:<br>How do you use algebraic, graphical and substitution methods to solve systems of linear equations and inequalities? | |
| Semester: Semester 1    Grading Period: 1<br>Pacing: 22 days | | |
| Concept:<br>Section 3-1 Solve systems of Equations by Graphing<br>Pacing 5 days | Concept:<br>Section 3-2 Solving Systems of Equations Algebraically<br>Pacing 5 days | Concept:<br>Section 3-3 Solving Systems of Inequalities by Graphing<br>Pacing 5 days |
| NGSSS Standard(s):<br>MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.<br><br>MA.912.A.3.15-Solve real-world problems involving systems of linear equations and inequalities in two and three variables | NGSSS Standard(s):<br>MA.912.A.2.5 Graph absolute value equations and inequalities in two variables. | NGSSS Standard(s):<br>MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.<br><br>MA.912.A.3.15-Solve real-world problems involving systems of linear equations and inequalities in two and three variables |
| Common Core Standards:<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations | Common Core Standard(s):<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations<br>. | Common Core Standard(s):<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations |

# Course Pacing Guide

| Lesson Essential Question: | Lesson Essential Question: | Lesson Essential Question: |
|---|---|---|
| How do you solve systems of linear equations by using tables and graphs?<br><br>How do you determine whether a system of linear equations is inconsistent, consistent and dependent, or consistent and independent?<br><br>How do you use algebraic methods to solve systems of linear equations? | How do you solve systems of linear equations by using substitution?<br><br>How do you solve systems of linear equations by using elimination?<br><br>How do you solve systems of inequalities? | How do you solve systems of inequalities by graphing?<br><br>How do you determine the coordinates of the vertices of a region formed by the graph of a system of inequalities?<br><br>How do you solve real-world optimization problems using systems of inequalities? |
| Vocabulary:<br>❖ System of equations<br>❖ Break-even point<br>❖ Consistent<br>❖ inconsistent<br>❖ Independent<br>❖ Dependent | Vocabulary:<br>❖ Substitution method<br>❖ Elimination method | Vocabulary:<br><br>❖ System of inequalities<br>❖ Bounded<br>❖ Unbounded<br>❖ Boundary line<br>❖ Region |

| Textbook/Workbook Resources: | Textbook/Workbook Resources: | Textbook/Workbook Resources: |
|---|---|---|
| ✓ NGSSS Practice (BOX) page 121<br>✓ Practice Textbook pp.138-139<br>✓ Check for understanding p.138<br>✓ Study Guide and Intervention workbook pages 29-30<br>✓ Differentiated Instruction page 138 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 140 (42-46)<br><br><br>Activity 1:<br><br>Drawing and Constructing using graph paper throughout lesson<br>(Also search websites for more activities on construction of graphs-see resource page)<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG<br><br>Use Graphing Calculator Technology<br><br>❖ Other Resources on Resource Page | ✓ NGSSS Practice (Box) page 141<br>✓ Practice Textbook pp.147-148<br>✓ Check for understanding p.146<br>✓ Study Guide and Intervention workbook pages 31-32<br>✓ Differentiated Instruction page 146 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 149(64-68)<br><br><br>Activity 1:<br><br>Drawing and Constructing using graph paper throughout lesson<br>(Also search websites for more activities on construction of graphs-see resource page)<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG<br><br>Use Graphing Calculator Technology<br><br>❖ Other Resources on Resource Page | ✓ NGSSS Practice (Box) page 150<br><br>✓ Practice Textbook pp.154-155<br><br>✓ Check for understanding p.119<br><br>✓ Study Guide and Intervention workbook pages 32-33<br><br>✓ Differentiated Instruction page 155 (Teacher Edition Activity)<br><br>✓ Practice and Problem Solving (Word problems application in textbook)<br><br>✓ H.O.T. Problems for Common Core page 156 (45-50)<br><br>❖ Other Resources on Resource Page<br><br>❖ Other Projects can be used from the Common Core websites: Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

# Course Pacing Guide

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 3:<br>Systems of Equations and Inequalities | Unit Essential Question:<br>How do you use algebraic, graphical and substitution methods to solve systems of linear equations and inequalities? | |
| Semester: Semester 1     Grading Period: 1<br>Pacing: 22 days | | |
| Concept:<br>Section 3-1 Solve systems of Equations by Graphing<br>Pacing 4 days | Concept:<br>Section 3-2 Solving Systems of Equations Algebraically<br>Pacing 4 days | Concept:<br>Section 3-3 Solving Systems of Inequalities by Graphing<br>Pacing 4 days |
| NGSSS Standard(s):<br>MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.<br><br>MA.912.A.3.15-Solve real-world problems involving systems of linear equations and inequalities in two and three variables | NGSSS Standard(s):<br>MA.912.A.2.5 Graph absolute value equations and inequalities in two variables. | NGSSS Standard(s):<br>MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.<br><br>MA.912.A.3.15-Solve real-world problems involving systems of linear equations and inequalities in two and three variables |
| Common Core Standards:<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations | Common Core Standard(s):<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations<br>. | Common Core Standard(s):<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations |

## Course Pacing Guide

| Lesson Essential Question: | Lesson Essential Question: | Lesson Essential Question: |
|---|---|---|
| How do you solve systems of linear equations by using tables and graphs? | How do you solve systems of linear equations by using substitution? | How do you solve systems of inequalities by graphing? |
| How do you determine whether a system of linear equations is inconsistent, consistent and dependent, or consistent and independent? | How do you solve systems of linear equations by using elimination? | How do you determine the coordinates of the vertices of a region formed by the graph of a system of inequalities? |
| How do you use algebraic methods to solve systems of linear equations? | How do you solve systems of inequalities? | How do you solve real-world optimization problems using systems of inequalities? |
| Vocabulary: <br> ❖ System of equations <br> ❖ Break-even point <br> ❖ Consistent <br> ❖ inconsistent <br> ❖ Independent <br> ❖ Dependent | Vocabulary: <br> ❖ Substitution method <br> ❖ Elimination method | Vocabulary: <br><br> ❖ System of inequalities <br> ❖ Bounded <br> ❖ Unbounded <br> ❖ Boundary line <br> ❖ Region |

## Course Pacing Guide

Resources:
- ✓ NGSSS Practice (BOX) page 121
- ✓ Practice Textbook pp.138-139
- ✓ Check for understanding p.138
- ✓ Study Guide and Intervention workbook pages 29-30
- ✓ Differentiated Instruction page 138 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 140 (42-46)

Activity 1:

Drawing and Constructing using graph paper throughout lesson

Activity 2:

Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Use Graphing Calculator Technology

❖ Other Resources on Resource Page

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Resources:

- ✓ NGSSS Practice (Box) page 141
- ✓ Practice Textbook pp.147-148
- ✓ Check for understanding p.146
- ✓ Study Guide and Intervention workbook pages 31-32
- ✓ Differentiated Instruction page 146 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 149(64-68)

Activity 1:

Drawing and Constructing using graph paper throughout lesson

Activity 2:

Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Use Graphing Calculator Technology

❖ Other Resources on Resource Page

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Resources:

- ✓ NGSSS Practice (Box) page 150
- ✓ Practice Textbook pp.154-155
- ✓ Check for understanding p.119
- ✓ Study Guide and Intervention workbook pages 32-33
- ✓ Differentiated Instruction page 155 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 156 (45-50)

Activity 1:

Drawing and Constructing using graph paper throughout lesson

Activity 2:

Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Use Graphing Calculator Technology

❖ Other Resources on Resource Page

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 3:<br>Systems of Equations and Inequalities | Unit Essential Question:<br>How do you use algebraic, graphical and substitution methods to solve systems of linear equations and inequalities in two and three variables? | |
| Semester: Semester 1 \| Grading Period: 1<br>Pacing: 22 days | | |
| Concept:<br>Section 3.4: Optimization with Linear Programming<br>Pacing 4 days | Concept:<br>Section 3-5: Systems of Equations in Three Variables<br>Pacing 4 days | |
| NGSSS Standard(s):<br>MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.<br><br>MA.912.A.3.15-Solve real-world problems involving systems of linear equations and inequalities in two and three variables | NGSSS Standard(s):<br>MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.<br><br>MA.912.A.3.15-Solve real-world problems involving systems of linear equations and inequalities in two and three variables. | |
| Common Core Standards:<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations | Common Core Standard(s):<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations<br>. | |

**Course Pacing Guide**

| | | |
|---|---|---|
| Lesson Essential Question:<br>How do you solve systems of linear equations by using tables and graphs?<br>How do you determine whether a system of linear equations is inconsistent, consistent and dependent, or consistent and independent?<br><br>How do you use algebraic methods to solve systems of linear equations? | Lesson Essential Question:<br>How do you solve systems of linear equations by using substitution?<br><br>How do you solve systems of linear equations by using elimination?<br><br>How do you solve systems of inequalities? | |
| Vocabulary:<br>❖ Constraints<br>❖ Linear programming<br>❖ Feasible region<br>❖ Bounded<br>❖ Unbounded<br>❖ optimize | Vocabulary:<br>❖ ordered triple | |

| | | |
|---|---|---|
| Resources:<br><br>✓ NGSSS Practice (BOX) page 157<br>✓ Mid-chapter Review page 159<br>✓ Practice Textbook pp.162-163<br>✓ Check for understanding p.163<br>✓ Study Guide and Intervention workbook pages 35-36<br>✓ Differentiated Instruction page 162(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 165 (29-33)<br><br>Activity 1:<br><br>Drawing and Constructing using graph paper throughout lesson<br>Activity 2:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Resources:<br><br>✓ NGSSS Practice (Box) page 166<br>✓ Practice Textbook pp.171<br>✓ Check for understanding p.171<br>✓ Study Guide and Intervention workbook pages 37-38<br>✓ Differentiated Instruction page 173(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 172 (24-29)<br><br>Activity 1:<br><br>Drawing and Constructing using graph paper throughout lesson<br>Activity 2:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| Unit Title:  Chapter 3:<br>Systems of Equations and Inequalities | Unit Essential Question:<br>How do you use algebraic, graphical and substitution methods to solve systems of linear equations and inequalities in two and three variables? |
| Semester:  Semester 1     Grading Period:  1<br>                             Pacing: 22 days | |
| Concept:<br>Chapter 3 Study Guide and Review and Tests<br>Systems of Equations and Inequalities<br>Pacing 2 days | |
| NGSSS Standard(s):<br>MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.<br><br>MA.912.A.3.15-Solve real-world problems involving systems of linear equations and inequalities in two and three variables | Common Core Standard(s):<br><br>Domain: Reasoning and Equations and Inequalities<br>A.REI.11: Represent and solve equations and inequalities graphically<br><br>This standard below is for Fourth courses (Upper level course)<br>A.RE1.8,9: Solve systems of equations |
| Vocabulary Check page 174 | Resources:<br>Textbook<br>  ✓ Study Guide and Review page 175-176<br>  ✓ Chapter 4 Practice Test page 177<br>  ✓ Preparing for Standardized Tests page 178-179<br>  ✓ NGSSS Practice page 180-181 |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 4: MATRICES | Unit Essential Question: How do you use matrices to solve systems of equations? | |
| Semester:  Semester 1 | Grading Period:  1 Pacing: 20 days | |

| Concept: Section 4-1: Introduction of Matrices Pacing 2 days | Concept: Section 4-2: Operations with Matrices Pacing  3 days | Concept: Section 4-3: Multiplying Matrices Pacing 4 days |
|---|---|---|
| NGSSS Standard(s):  MA.912.D.8.2 Use matrix operations to solve problems  LA.910.1.6.1 The student will use new vocabulary that is introduced and taught directly | NGSSS Standard(s):  MA.912.D.8.2 Use matrix operations to solve problems | NGSSS Standard(s):  MA.912.D.8.2 Use matrix operations to solve problems |
| Common Core Standards:  **Domain: Vector Quantities and Matrices**  This standard below is for Fourth courses (Upper level course) N.VM.6,7,8,9,10,11,12: Perform operations on matrices and use matrices in applications  **Domain: Interpreting Categorical and Quantitative Data** S.ID.4- Summarize, represent, and interpret data on a single count or measurement variable | Common Core Standard(s):  **Domain: Vector Quantities and Matrices**  This standard below is for Fourth courses (Upper level course) N.VM.6,7,8,9,10,11,12: Perform operations on matrices and use matrices in applications  **Domain: Interpreting Categorical and Quantitative Data** S.ID.4- Summarize, represent, and interpret data on a single count or measurement variable | Common Core Standard(s):  **Domain: Vector Quantities and Matrices**  This standard below is for Fourth courses (Upper level course) N.VM.6,7,8,9,10,11,12: Perform operations on matrices and use matrices in applications **Domain: Interpreting Categorical and Quantitative Data** S.ID.4- Summarize, represent, and interpret data on a single count or measurement variable or measurement variable |

**Course Pacing Guide**

| Lesson Essential Question:<br>How do you organize data in matrices and use row and column operations to analyze data<br><br>How do you use matrices to solve systems of equations | Lesson Essential Question:<br>How do you add and subtract matrices.<br>How do you multiply matrix by a scalar<br>How do you use matrices to solve systems of equations | Lesson Essential Question:<br>How do you use the properties of Matrix multiplication to solve matrices? |
|---|---|---|
| Vocabulary:<br>❖ Matrix<br>❖ Element<br>❖ Dimensions<br>❖ Row matrix<br>❖ Column matrix<br>❖ Square matrix<br>❖ Zero matrix<br>❖ Equal matrices | Vocabulary:<br>❖ Scalar<br>❖ Scalar multiplication | Vocabulary:<br>❖ Associative property of Matrix multiplication<br>❖ Associative property of Scalar multiplication<br>❖ Left Distributive property<br>❖ Right Distributive Property |

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ NGSSS Practice (BOX) page 173<br>✓ Practice Textbook pp.188-189<br>✓ Check for understanding p.188<br>✓ Study Guide and Intervention workbook pages 39-40<br>✓ Differentiated Instruction page 189(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 190 (35-40) | Textbook<br>✓ NGSSS Practice (Box) page 191<br>✓ Practice Textbook pp.196-197<br>✓ Check for understanding p.196<br>✓ Study Guide and Intervention workbook pages 41-42<br>✓ Differentiated Instruction page 195(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 198 (35-40) | Textbook<br>✓ NGSSS Practice (Box) page 199<br>✓ Practice Textbook pp.204-206<br>✓ Check for understanding p.204<br>✓ Study Guide and Intervention workbook pages 43-44<br>✓ Differentiated Instruction page 202(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 206 (46-50) |
| Activity 1:<br>Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 4: MATRICES | Unit Essential Question: How do you use matrices to solve systems of equations? | |
| Semester: TWO     Grading Period: 1    Pacing: 20 days | | |
| Concept: Section 4-4: Transformations with Matrices Pacing 3 days | Concept: Section 4-5: Determinants and Cramer's Rules Pacing 3 days | Concept: Section 4-6 Inverse Matrices and Systems of Equations Pacing 3 days |
| NGSSS Standard(s): MA.912.G.2.4 Apply transformations to polygons to determine congruence, similarity and symmetry | NGSSS Standard(s): MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods. | NGSSS Standard(s): MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods. |
| Common Core Standards: **Domain: Interpreting Categorical and Quantitative Data** S.ID.4- Summarize, represent, and interpret data on a single count or measurement variable **Domain: Congruence (Note: There are no grade level-Geometry standards)** G.CO.1,2,3,4,5: Experiment with transformations in the plane G.CO.6,7,8: Understand congruence in terms of rigid motions G.SRT.1a,1b,2,3: Understand similarity in terms of similarity transformations | Common Core Standard(s): **Domain: Interpreting Categorical and Quantitative Data** S.ID.4- Summarize, represent, and interpret data on a single count or measurement variable **Domain: Congruence (Note: There are no grade level-Geometry standards)** G.CO.1,2,3,4,5: Experiment with transformations in the plane G.CO.6,7,8: Understand congruence in terms of rigid motions G.SRT.1a,1b,2,3: Understand similarity in terms of similarity transformations. | Common Core Standard(s): **Domain: Interpreting Categorical and Quantitative Data** S.ID.4- Summarize, represent, and interpret data on a single count or measurement variable Domain: Reasoning and Equations and Inequalities This standard below is for Fourth courses (Upper level course) A.RE1.8,9: Solve systems of equations G.CO.6,7,8: Understand congruence in terms of rigid motions |

**Course Pacing Guide**

| Lesson Essential Question: | Lesson Essential Question: | Lesson Essential Question: |
|---|---|---|
| How do you use matrices for translations and dilations?<br>How do you use matrices for reflections and rotations<br>How do you use matrices to solve systems of equations | How do you solve matrices using Cramer's rule<br>How do you solve matrices in second and third order | How do you solve 2x2 matrix?<br>How do you write and solve matrix equations for a systems of equations? |
| Vocabulary:<br>❖ Vertex matrix<br>❖ Coordinate matrix<br>❖ Preimage<br>❖ Image<br>❖ rotation | Vocabulary:<br>❖ determinant<br>❖ second-order determinant<br>❖ third-order determinant<br>❖ diagonal rule<br>❖ Cramer's Rule<br>❖ Coefficient Matrix | Vocabulary:<br>❖ Identity matrix<br>❖ Inverse matrix<br>❖ Matrix equation<br>❖ Variable matrix<br>❖ Constant matrix |

**Course Pacing Guide**

Resources:

Textbook
- ✓ NGSSS Practice (Box) page 207
- ✓ Practice Textbook pp.213-215
- ✓ Check for understanding p.213
- ✓ Study Guide and Intervention workbook pages 47-48
- ✓ Differentiated Instruction page 216(Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 216 (42-48)

Activity 1:

Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

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Resources:

Textbook
- ✓ NGSSS Practice (Box) page 217
- ✓ Practice Textbook pp.225-226
- ✓ Check for understanding p.225
- ✓ Study Guide and Intervention workbook pages 49-50
- ✓ Differentiated Instruction page 228(Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 227 (56-61)

Activity 1:

Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

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Resources:

Textbook
- ✓ NGSSS Practice (Box) page 228
- ✓ Practice Textbook pp.233-234
- ✓ Check for understanding p.223
- ✓ Study Guide and Intervention workbook pages 49-50
- ✓ Differentiated Instruction page 235(Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 234 (38-42)

Activity 1:

Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

**Course Pacing Guide**

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| Unit Title:  Chapter 4: MATRICES | Unit Essential Question: <br> How do you use matrices to solve systems of equations? |
| Semester:  1     Grading Period:  1 <br> Pacing: 20 days | |

| Concept: <br> Chapter 4 Study Guide/ Review and Tests <br> Pacing 2 days | |
|---|---|
| NGSSS Standard(s): <br><br> MA.912.D.8.2 Use matrix operations to solve problems <br><br> MA.912.G.2.4 Apply transformations to polygons to determine congruence, similarity and symmetry <br><br> MA.912.A.3.14- Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods. | Common Core Standards: <br> **Domain: Interpreting Categorical and Quantitative Data** <br> S.ID.4- Summarize, represent, and interpret data on a single count or measurement variable <br> **Domain: Congruence (Note: There are no grade level-Geometry standards)** <br> G.CO.1,2,3,4,5: Experiment with transformations in the plane <br> G.CO.6,7,8: Understand congruence in terms of rigid motions <br> G.SRT.1a,1b,2,3: Understand similarity in terms of similarity transformations <br> **Common Core Standards (Continued)** <br> **Domain: Vector Quantities and Matrices** <br> This standard below is for Fourth courses (Upper level course) <br> N.VM.6,7,8,9,10,11,12: Perform operations on matrices and use matrices in applications <br> **Domain: Interpreting Categorical and Quantitative Data** <br> S.ID.4- Summarize, represent, and interpret data on a single count or measurement variable |
| Lesson Essential Question: <br> How do you use matrices to solve systems of equations? <br> How do you find the transformations and inverses of matrices | |
| Vocabulary: <br> Vocabulary check page 237 | Resources: <br> Textbook <br>   ✓ Study Guide and Review page 238-240 <br>   ✓ Chapter 4 Practice Test page 241 <br>   ✓ Preparing for Standardized Tests page 242 <br>   ✓ NGSSS Practice page 244-245 |

**Course Pacing Guide**

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 5: Quadratic Functions and Relations | Unit Essential Question: How do you solve equations using graphs and the Quadratic Formula? How do you Construct and compare linear, quadratic, and exponential models and solve problems? How do you solve quadratic inequalities using graphs and algebraic methods? | |
| Semester:  1     Grading Period:  1 Pacing: 24 days | | |
| Concept: Section 5-1: Graphing Quadratic Functions Pacing 4 days | Concept: Section 5-2 Solving Quadratic Equations by Graphing Pacing  4 days | Concept: Section 5-3 Solving Quadratic Equations by Factoring Pacing 4 days |
| NGSSS Standard(s): MA.912.A.2.6: Identify and graph common functions (including but not limited to linear, rational, quadratic, cubic, radical, absolute value. MA.912.A.7.6 Identify the axis of symmetry, vertex, domain, range and intercept(s) for a given parabola. Also addresses MA.912.A.10.5 | NGSSS Standard(s): MA.912.A.7.6 Identify the axis of symmetry, vertex, domain, range and intercept(s) for a given parabola. Also addresses MA.912.A.10.5 MA.912.A.7.10 Use graphing technology to find approximate solutions of quadratic equations | NGSSS Standard(s): MA.912.A.4.3 Factor polynomial expressions MA.912.A.10.3-Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities rational or radical expressions or logarithmic or exponential functions) |
| Common Core Standards: **Domain: Linear, Quadratic, and Exponential Models** F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems. | Common Core Standard(s): **Domain: Linear, Quadratic, and Exponential Models** F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems. | Common Core Standard(s): **Domain: Linear, Quadratic, and Exponential Models** F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems. **Domain: Arithmetic with Polynomials and Rational Expressions** **A.APR.1: Perform arithmetic operations on polynomials.** *Beyond quadratic* |
| Lesson Essential Question: How do you graph quadratic functions? How do you find and interpret the maximum and minimum values of quadratic functions? | Lesson Essential Question: How do you solve quadratic equations by graphing? How do you estimate solutions of quadratic equations by graphing? | Lesson Essential Question: How do you write quadratic equations in intercept form? How do you solve quadratic equations by factoring? |

## Course Pacing Guide

| Vocabulary: | Vocabulary: | Vocabulary: |
|---|---|---|
| ❖ Quadratic function<br>❖ Quadratic term<br>❖ Linear term<br>❖ Constant term<br>❖ Parabola<br>❖ Axis of symmetry<br>❖ Vertex<br>❖ Maximum value<br>❖ Minimum Value | ❖ Quadratic equation<br>❖ Standard form<br>❖ Root<br>❖ Zero | ❖ Factored form<br>❖ FOIL Method |

| | | |
|---|---|---|
| Resources:<br><br>&check; Get ready for Chapter 5 page 247<br>&check; Practice Textbook pp.254-255<br>&check; Check for understanding p.254<br>&check; Study Guide and Intervention workbook pages 51-52<br>&check; Differentiated Instruction page 253(Teacher Edition Activity)<br>&check; Practice and Problem Solving (Word problems application in textbook)<br>&check; H.O.T. Problems for Common Core page 256 (61-65)<br><br>Activity 1:<br><br>Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)<br><br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Resources:<br><br>Textbook<br>&check; NGSSS Practice (Box) page 257<br>&check; Practice Textbook pp.263-264<br>&check; Check for understanding p.263<br>&check; Study Guide and Intervention workbook pages 53-54<br>&check; Differentiated Instruction page 266(Teacher Edition Activity)<br>&check; Practice and Problem Solving (Word problems application in textbook)<br>&check; H.O.T. Problems for Common Core page 265 (52-56)<br><br>Activity 1:<br><br>Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)<br><br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Resources:<br><br>Textbook<br>&check; NGSSS Practice (Box) page 266<br>&check; Practice Textbook pp.272-273<br>&check; Check for understanding p.272<br>&check; Study Guide and Intervention workbook pages 55-56<br>&check; Differentiated Instruction page 275(Teacher Edition Activity)<br>&check; Practice and Problem Solving (Word problems application in textbook)<br>&check; H.O.T. Problems for Common Core page 274 (79-86)<br><br>Activity 1:<br><br>Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)<br><br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| | | |
|---|---|---|
| Common Core Standards Activity site:<br>WWW.CPALMS.ORG<br><br>Incorporate Common Core 8 Mathematical<br>Practices<br>   ➢  Make sense of problems and persevere in<br>       solving them<br>   ➢  Reason abstractly and quantitatively<br>   ➢  Construct viable arguments and critique<br>       the reasoning of others<br>   ➢  Model with mathematics<br>   ➢  Use appropriate tools strategically<br>   ➢  Attend to precision<br>   ➢  Look for and make use of structure<br>   ➢  Look for and express regularity in repeated<br>       reasoning | | |

# Course Pacing Guide

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 5: Quadratic Functions and Relations | Unit Essential Question:<br>How do you solve equations using graphs and the Quadratic Formula?<br>How do you Construct and compare linear, quadratic, and exponential models and solve problems? | |
| Semester:  1 | Grading Period:  1<br>Pacing: 24 days | How do you solve quadratic inequalities using graphs and algebraic methods? |
| Concept:<br>Section 5-4: Complex Numbers<br>Pacing 4 days | Concept:<br>Section 5-5: Completing the Square<br>Pacing  4 days | Concept:<br>Section 5-6: The Quadratic Formula and the Discriminant<br>Pacing 4 days |
| NGSSS Standard(s):<br><br>MA.912.A.1.6-Identify the real and imaginary parts of complex numbers and perform basic operations. *Also addresses MA.912.A.1.1 and MA.912.A.1.7* | NGSSS Standard(s):<br><br>MA.912.A.7.3-Solve quadratic equations over the real numbers by completing the square.<br><br>MA.912.A.7.5 Solve quadratic equations over the complex number system. | NGSSS Standard(s):<br><br>MA.912.A.7.4-Use the discriminant to determine the nature of the roots of a quadratic equation.<br><br>MA.912.A.7.5 Solve quadratic equations over the complex number system. *Also assesses MA.912.A.10.3* |
| Common Core Standards:<br><br>**Domain: The Complex Number System**<br><br>**N.CN.1,2 : Perform arithmetic operations with complex numbers**<br><br>**N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations.** *Polynomials with real coefficients.*<br>. | Common Core Standard(s):<br><br>**Domain: Linear, Quadratic, and Exponential Models**<br><br>F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems.<br><br>Domain:  The Complex Number System<br>**N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations.** *Polynomials with real coefficients.* | Common Core Standard(s):<br><br>**Domain: Linear, Quadratic, and Exponential Models**<br><br>F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems.<br><br>Domain:  The Complex Number System<br>**N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations.** *Polynomials with real coefficients.* |

**Course Pacing Guide**

| Lesson Essential Question: | Lesson Essential Question: | Lesson Essential Question: |
|---|---|---|
| How do you perform operations with pure imaginary numbers? <br> How do you perform operations with complex numbers | ❖ How do you solve quadratic equations by using the Square root property? <br> ❖ How do you solve quadratic equations by completing the square | How do you write quadratic equations in intercept form? <br> How do you solve quadratic equations by factoring? |
| Vocabulary: <br> ❖ Imaginary unit <br> ❖ Pure imaginary number <br> ❖ Complex number <br> ❖ Complex conjugates | Vocabulary: <br> ❖ Completing the Square | Vocabulary: <br> ❖ Quadratic formula <br> ❖ Discriminant |

# Course Pacing Guide

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ NGSSS Practice (Box) page 274<br>✓ Mid-chapter Quiz page 283<br>✓ Practice Textbook pp.280-281<br>✓ Check for understanding p.281<br>✓ Study Guide and Intervention workbook pages 57-58<br>✓ Differentiated Instruction page 282(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 281 (66-70) | Textbook<br>✓ NGSSS Practice (Box) page 282<br>✓ Practice Textbook pp.288-289<br>✓ Check for understanding p.288<br>✓ Study Guide and Intervention workbook pages 59-60<br>✓ Differentiated Instruction page 290(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 289 (58-62) | Textbook<br>✓ NGSSS Practice (Box) page 290<br>✓ Practice Textbook pp.297-299<br>✓ Check for understanding p.297<br>✓ Study Guide and Intervention workbook pages 61-62<br>✓ Differentiated Instruction page 296(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 299 (43-48) |
| Activity 1:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| Course Code: 1200330 | | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title: Chapter 5: Quadratic Functions and Relations | | Unit Essential Question:<br>How do you solve equations using graphs and the Quadratic Formula?<br>How do you Construct and compare linear, quadratic, and exponential models and solve problems?<br>How do you solve quadratic inequalities using graphs and algebraic methods? | |
| Semester: 1 | Grading Period: 1<br>Pacing: 24 days | | |
| Concept:<br>Section 5-7: Transformations with Quadratic Functions<br>Pacing 4 days | | Concept:<br>Section 5-8: Quadratic Inequalities<br>Pacing  4 days | |
| NGSSS Standard(s):<br><br>MA.912.A.2.10-Describe and graph transformation of functions. | | NGSSS Standard(s):<br>MA.912.A.4.11- Solve a polynomial inequality by examining the graph with and without the use of technology.<br>MA.912.A.10.3-Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities rational or radical expressions or logarithmic or exponential functions) | |
| Common Core Standards:<br><br>**Domain: The Complex Number System**<br><br>**N.CN.1,2 : Perform arithmetic operations with complex numbers**<br><br>**N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations.** *Polynomials with real coefficients.*<br><br>**Domain: Congruence (Note: There are no grade level-Geometry standards)**<br>G.CO.1,2,3,4,5: Experiment with transformations in the plane<br><br>G.SRT.1a,1b,2,3: Understand similarity in terms of similarity transformations | | Common Core Standard(s):<br><br>**Domain: Linear, Quadratic, and Exponential Models**<br><br>F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems.<br><br>**Domain:  The Complex Number System**<br><br>**N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations.** *Polynomials with real coefficients.* | |

| Lesson Essential Question:<br>How do you write a quadratic function in the form $y = a (x-h)^2 + K$?<br>How do you transform graphs of quadratic functions of the form $Y = a (x-h)^2 + k$?<br>How do you solve quadratic inequalities using graphs and algebraic methods? | Lesson Essential Question:<br>How do you solve quadratic equations by graphing?<br>How do you estimate solutions of quadratic equations by graphing? | |
|---|---|---|
| Vocabulary:<br>❖ Vertex form | Vocabulary:<br>❖ How do you solve quadratic equations by using the Square root property?<br>❖ How do you solve quadratic equations by completing the square | ❖ |

| | |
|---|---|
| Resources:<br><br>✓ NGSSS Practice (Box) page 300<br>✓ Practice Textbook pp.308-309<br>✓ Check for understanding p.308<br>✓ Study Guide and Intervention workbook pages 63-64<br>✓ Differentiated Instruction page 307(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 309(48-52)<br><br>Activity 1:<br><br>**S**earch **Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG<br><br>Graphic Calculator Activity | Resources:<br><br>Textbook<br>✓ NGSSS Practice (Box) page 310<br>✓ Practice Textbook pp.315-317<br>✓ Check for understanding p.315<br>✓ Study Guide and Intervention workbook pages 65-66<br>✓ Differentiated Instruction page 318(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 317(57-62)<br><br>Activity 1:<br><br>**S**earch **Smarttech.com websites for smartboard activities to find more activities on construction of graphs-see resource page)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG<br><br>Graphic Calculator Activity | |

**Course Pacing Guide**

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| Unit Title:  Chapter 5: Quadratic Functions and Relations | Unit Essential Question:<br>How do you solve equations using graphs and the Quadratic Formula? |
| Semester:  1      Grading Period:  1<br>                       Pacing: 24 days | How do you Construct and compare linear, quadratic, and exponential models and solve problems? |
| Concept:<br>Chapter 5 Study Guide/ Review and Tests<br>Pacing 2 days | |
| NGSSS Standard(s):<br>MA.912.A.1.6-Identify the real and imaginary parts of complex numbers and perform basic operations. *Also addresses MA.912.A.1.1 and MA.912.A.1.7*<br><br>MA.912.A.7.6 Identify the axis of symmetry, vertex, domain, range and intercept(s) for a given parabola. Also addresses MA.912.A.10.5<br><br>MA.912.A.7.10 Use graphing technology to find approximate solutions of quadratic equations<br><br>MA.912.A.7.3-Solve quadratic equations over the real numbers by completing the square.<br><br>MA.912.A.7.5 Solve quadratic equations over the complex number system | Common Core Standards:<br><br><br>**Domain: Linear, Quadratic, and Exponential Models**<br><br>F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems.<br><br>Domain:  The Complex Number System<br><br>**N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations.** *Polynomials with real coefficients.* |
| ✓   Vocabulary Check: page 320 | ✓   Chapter 5 Study Guide and Review pages 321-324<br>✓   Chapter 5 Cumulative Test page 325<br>✓   Preparing for Standardized Tests pp.326-327<br>✓   NGSSS Practice Test 328-329 |

**Course Pacing Guide**

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 6: Polynomials and Polynomial Functions | Unit Essential Question:<br>How do you use tools including factoring to transform and solve polynomial equations? | |
| Semester: TWO   Grading Period: 2   Pacing: 21 days | | |
| Concept:<br>Section 6-1: Operations with Polynomials<br>Pacing 3 days | Concept:<br>Section 6-2: Dividing Polynomials<br>Pacing 3 days | Concept:<br>Section 6-3: Polynomial Functions<br>Pacing 3 days |
| NGSSS Standards(s)<br><br>MA.912.4.2-Add, subtract and multiply polynomials<br>*Also assess MA.912.A.1.3 and MA.912.A.1.4* | NGSSS Standards(s)<br>MA.912.A.4.4- Divide polynomials by monomials and polynomials with various techniques, including synthetic division | NGSSS Standards(s)<br>MA.912.A.4.5 Graph polynomial functions with and without technology and describe the end behavior. |
| Common Core Standards:<br><br>**Domain: Arithmetic with Polynomials and Rational Expressions**<br><br>A.APR.1 Perform arithmetic operations on polynomials<br><br>**Domain: The Complex Number System**<br><br>N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations**.** *Polynomials with real coefficients.*<br>. | Common Core Standard(s):<br><br>**Domain: Arithmetic with Polynomials and Rational Expressions**<br><br>A.APR.1 Perform arithmetic operations on polynomials<br><br>**Domain: The Complex Number System**<br><br>N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations**.** *Polynomials with real coefficients.* | Common Core Standard(s):<br>**Domain: Arithmetic with Polynomials and Rational Expressions**<br><br>A.APR.1 Perform arithmetic operations on polynomials<br><br>**Domain: The Complex Number System**<br><br>N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations**.** *Polynomials with real coefficients.*<br><br>**Domain: Linear, Quadratic, and Exponential Models**<br><br>F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems. |

| Lesson Essential Question: How do you multiply, divide and simplify monomials and expressions involving powers? How do you add, subtract and multiply polynomials? | Lesson Essential Question: How do you divide polynomials using long division? How do you divide polynomials using synthetic division? | Lesson Essential Question: How do you evaluate polynomial functions? How do you identify general shapes of graphs of polynomial functions? |
| --- | --- | --- |
| Vocabulary:<br>❖ Simplify<br>❖ Degree of a polynomial | Vocabulary:<br>❖ Synthetic Division | Vocabulary:<br>❖ Polynomial in one variable<br>❖ Leading coefficient<br>❖ Polynomial function<br>❖ Power function<br>❖ End behavior<br>❖ Quartic function<br>❖ Quantic function |

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ Get Ready for Chapter 6 page 331<br>✓ Practice Textbook pp.337-338<br>✓ Check for understanding p.337<br>✓ Study Guide and Intervention workbook pages 67-68<br>✓ Differentiated Instruction page 334(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 338 (65-69) | Textbook<br>✓ NGSSS Practice (Box) page 339<br>✓ Practice Textbook pp.345-346<br>✓ Check for understanding p.345<br>✓ Study Guide and Intervention workbook pages 69-70<br>✓ Differentiated Instruction page 347(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 346 (43-48) | Textbook<br>✓ NGSSS Practice (Box) page 347<br>✓ Practice Textbook pp.352-354<br>✓ Check for understanding p.352<br>✓ Study Guide and Intervention workbook pages 71-72<br>✓ Differentiated Instruction page 350(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 354 (63-68) |
| Activity 1:<br>**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

# Course Pacing Guide

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| Unit Title:  Chapter 6: Polynomial and Polynomial Functions | Unit Essential Question:<br>How do you use tools including factoring to transform and solve polynomial equations? |

| Semester:  TWO | Grading Period:  2<br>Pacing:   21 days | |

| Concept:<br>Section 6-4: Analyzing Graphs of Polynomial Functions<br>Pacing 3 days | Concept:<br>Section 6-5: Solving Polynomial Equations<br>Pacing  3 days | Concept:<br>Section 6-6: The Remainder and Factor Theorems<br>Pacing 3 days |
|---|---|---|
| NGSSS Standards(s)<br><br>MA.912.2.6 –Identify and graph common functions (including, but not limited to linear, rational, quadratic, cubic, radical, absolute value).<br><br>MA.912.A.4.5-Graph polynomial functions with and without technology and describe the end behavior | NGSSS Standards(s)<br><br>MA.912.A.4.3-Factor polynomial expressions<br><br>MA.912.A.4.10-Use polynomial equations to solve real-world problems. | NGSSS Standards(s)<br><br>MA.912.A.4.6-Use theorems of polynomial behavior to find the zeros of a polynomial function.<br><br>MA.912.A.4.8-Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology. *Also addresses MA.912.A.4.3.* |

**Course Pacing Guide**

| Common Core Standards: | Common Core Standard(s): | Common Core Standard(s): |
|---|---|---|
| **Domain: Arithmetic with Polynomials and Rational Expressions** | **Domain: Arithmetic with Polynomials and Rational Expressions** | **Domain: Arithmetic with Polynomials and Rational Expressions** |
| A.APR.1 Perform arithmetic operations on polynomials | A.APR.1 Perform arithmetic operations on polynomials | A.APR.1 Perform arithmetic operations on polynomials |
| **Domain: The Complex Number System** | **Domain: The Complex Number System** | **Domain: The Complex Number System** |
| N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations. *Polynomials with real coefficients.* | N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations. *Polynomials with real coefficients.* | N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations. *Polynomials with real coefficients.* |
| **Domain Interpreting Functions** | | **Domain: Linear, Quadratic, and Exponential Models** |
| F.IF.7b,7c,7e,8,9 Analyze Functions using different representations | | F.LE.4-Construct and compare linear, quadratic, and exponential models and solve problems. |
| Lesson Essential Question: How do you multiply, divide and simplify monomials and expressions involving powers? How do you add, subtract and multiply polynomials? | Lesson Essential Question: How do you factor polynomials? How do you solve polynomial equations by factoring? | Lesson Essential Question: How do you evaluate functions by using synthetic substitution? How do you determine whether a binomial is a factor of a polynomial by using synthetic substitution? |
| Vocabulary:<br>❖ Simplify<br>❖ Degree of a polynomial | Vocabulary:<br>❖ Prime polynomials<br>❖ Quadratic form | Vocabulary:<br>❖ Synthetic substitution<br>❖ Depressed polynomial |

**Course Pacing Guide**

| | | |
|---|---|---|
| Resources: | Resources: | Resources: |

Resources:

- ✓ NGSSS Practice (Box) pg 355
- ✓ Practice Textbook pp.361-362
- ✓ Check for understanding p.351
- ✓ Study Guide and Intervention workbook pages 73-74
- ✓ Differentiated Instruction page 360 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 363 (47-53)

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

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Textbook

- ✓ NGSSS Practice (Box) page 364
- ✓ Practice Textbook pp.372-373
- ✓ Check for understanding p.372
- ✓ Study Guide and Intervention workbook pages 75-76
- ✓ Differentiated Instruction page 375(Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 374 (79-83)

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

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Textbook

- ✓ NGSSS Practice (Box) page 375
- ✓ Practice Textbook pp.380-381
- ✓ Check for understanding p.380
- ✓ Study Guide and Intervention workbook pages 77-78
- ✓ Differentiated Instruction page 382(Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 381 (36-43)

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

| Course Code: 1200330 | | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title: Chapter 6: Polynomial and Polynomial Functions | | Unit Essential Question: How do you use tools including factoring to transform and solve polynomial equations? | |
| Semester: TWO | Grading Period: 2 <br> Pacing: 21 days | | |
| Concept: <br> Section 6-7: Roots and Zeros <br> Pacing 3 days | | Concept: <br> Section 6-8: Rational Zero Theorem <br> Pacing 3 days | |
| NGSSS Standards(s) <br><br> MA.912.A.4.6-Use theorems of polynomial behavior to find the zeros of a polynomial function. <br><br> MA.912.A.4.8-Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology. *Also addresses MA.912.A.4.3.* | | NGSSS Standards(s) <br><br> MA.912.A.4.6-Use theorems of polynomial behavior to find the zeros of a polynomial function. <br><br> MA.912.A.4.8-Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology. *Also addresses MA.912.A.4.3.* | |

| Common Core Standards:<br><br>**Domain: Arithmetic with Polynomials and Rational Expressions**<br>A.APR2,3: Understand the relationship between zeros and factors of polynomials<br><br>**Domain: The Complex Number System**<br><br>N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations**. *Polynomials with real coefficients.*<br><br>**Domain Interpreting Functions**<br><br>F.IF.7b,7c,7e,8,9 Analyze Functions using different representations | Common Core Standard(s):<br><br>**Domain: Arithmetic with Polynomials and Rational Expressions**<br><br>A.APR.1 Perform arithmetic operations on polynomials<br><br>A.APR2,3: Understand the relationship between zeros and factors of polynomials<br><br>A.APR.6 (+) 5: Rewrite rational expressions<br><br>**Domain: The Complex Number System**<br><br>N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations**. *Polynomials with real coefficients.*<br><br>**Domain Interpreting Functions**<br><br>F.IF.7b,7c,7e,8,9 Analyze Functions using different representations | |
|---|---|---|
| Lesson Essential Question:<br>How do you determine the number and type of roots for a polynomial equation?<br><br>How do you find the zeros of a polynomial function? | Lesson Essential Question:<br>How do you identify possible rational zeros of a polynomial function?<br><br>How do you find all of the rational zeros of a polynomial function? | |
| Vocabulary:<br>❖ Fundamental Theorem of Algebra<br>❖ Zeros<br>❖ Factors<br>❖ Roots<br>❖ Complex Conjugate Theorem<br>❖ Descartes's Rule of Signs | Vocabulary:<br>❖ Rational Zero Theorem<br>❖ Corollary to the Rational Zero Theorem | |

| Resources: | Resources: | |
|---|---|---|
| ✓ NGSSS Practice (Box) pg 382<br>✓ Practice Textbook pp.388-389<br>✓ Check for understanding p.388<br>✓ Study Guide and Intervention workbook pages 79-80<br>✓ Differentiated Instruction page 390 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 389 (56-60)<br><br>Graphic calculator Activity<br>*Other Resources: Online or CD*<br>Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Textbook<br>✓ NGSSS Practice (Box) page 390<br>✓ Practice Textbook pp.393-395<br>✓ Check for understanding p.393<br>✓ Study Guide and Intervention workbook pages 81-82<br>✓ Differentiated Instruction page 393(Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 395 (46-51)<br><br>Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | |

| | | |
|---|---|---|
| Common Core Standards Activity site:<br>WWW.CPALMS.ORG<br><br>Incorporate Common Core 8 Mathematical Practices<br>&#10095; Make sense of problems and persevere in solving them<br>&#10095; Reason abstractly and quantitatively<br>&#10095; Construct viable arguments and critique the reasoning of others<br>&#10095; Model with mathematics<br>&#10095; Use appropriate tools strategically<br>&#10095; Attend to precision<br>&#10095; Look for and make use of structure<br>&#10095; Look for and express regularity in repeated reasoning | | |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| **Unit Title:**<br><br>**Chapter 6:  Polynomial and Polynomial Functions** | Unit Essential Question:<br>How do you use tools including factoring to transform and solve polynomial equations? |
| Semester: 1 | Grading Period:  1<br>Pacing: 24 days | |
| Concept:<br>Chapter 6 Study Guide/ Review and Tests<br>Pacing 2 days | |

| NGSSS Standard(s): | Common Core Standards: |
|---|---|
| MA.912.2.6 –Identify and graph common functions (including, but not limited to linear, rational, quadratic, cubic, radical, absolute value). | **Domain: Arithmetic with Polynomials and Rational Expressions** |
| MA.912.4.2-Add, subtract and multiply polynomials *Also assess MA.912.A.1.3 and MA.912.A.1.4* | A.APR.1 Perform arithmetic operations on polynomials |
| MA.912.A.4.3-Factor polynomial expressions | A.APR2,3: Understand the relationship between zeros and factors of polynomials |
| MA.912.A.4.4- Divide polynomials by monomials and polynomials with various techniques, including synthetic division | A.APR.6 (+) 5: Rewrite rational expressions |
| MA.912.A.4.5-Graph polynomial functions with and without technology and describe the end behavior | **Domain: The Complex Number System** |
| MA.912.A.4.6-Use theorems of polynomial behavior to find the zeros of a polynomial function. | N.CN.7, (+) 8, (+) 9: Use complex numbers in polynomial identities and equations**.** *Polynomials with real coefficients.* |
| MA.912.A.4.8-Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology. *Also addresses MA.912.A.4.3.* | **Domain Interpreting Functions** |
| MA.912.A.4.10-Use polynomial equations to solve real-world problems. | F.IF.7b,7c,7e,8,9 Analyze Functions using different representations |

| ✓  Chapter 6 -Vocabulary Check: page 397 | ✓ **Chapter 6 Study Guide and Review pages 398-400**<br>✓ **Chapter 6 Cumulative Test page 401**<br>✓ **Preparing for Standardized Tests pp.402-403**<br>✓ **NGSSS Practice Test 404-405** |
| --- | --- |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
| --- | --- | --- |
| Unit Title:  Chapter 7: Inverses and Radical Functions and Relations | Unit Essential Question:<br>How do you describe and analyze the relationship between a function and its inverse?<br>How do you develop the definition of logarithm by exploring the relationship between exponential functions and their inverses?<br>How do you determine the solutions of square root equations using algebraic methods? | |
| Semester:  TWO | Grading Period:  2<br>Pacing:   24  days | |
| Concept:<br>Section 7-1 Operations on Functions<br>Pacing 3 days | Concept:<br>Section 7-2: Inverse Functions and Relations<br>Section 7-2 Extended Graphing Technology Labs<br>Pacing  5 days | Concept:<br>Section 7-3: Square Root Functions and Inequalities<br>Pacing 4 days |
| NGSSS Standards(s)<br><br>MA.912.A.2.7 Perform operations of functions algebraically, numerically and graphically.<br><br>MA.912.A.2.8 Determine the composition of functions | NGSSS Standards(s)<br><br>MA.912.A.2.11 Solve problems involving functions and their inverses. | NGSSS Standards(s)<br><br>MA.912.A.2.6 Identify and graph common functions (including, but not limited to linear, rational, quadratic, cubic, radical, absolute value). |

**Course Pacing Guide**

| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* |
|---|---|---|
| Lesson Essential Question:<br>How do you find the sum, difference, product and quotient of functions?<br>How do you find the compositions of functions? | Lesson Essential Question:<br>How do you find the inverse of a function or relation?<br>How do you determine whether two functions or relations are inverses? | Lesson Essential Question:<br>How do you graph and analyze square root functions?<br>How do you graph square root inequalities? |
| Vocabulary:<br>&#10022; Composition of functions | Vocabulary:<br>&#10022; Inverse relation<br>&#10022; Inverse function | Vocabulary:<br>&#10022; Square root functions<br>&#10022; Radical functions<br>&#10022; Square root inequality |

# Course Pacing Guide

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ Getting started page 407<br>✓ Practice Textbook pp.413-414<br>✓ Check for understanding p.413<br>✓ Study Guide and Intervention workbook pages 83-84<br>✓ Differentiated Instruction page 415 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 415 (59-63) | Textbook<br>✓ NGSSS Practice (Box) page 416<br>✓ Practice Textbook pp.420-421<br>✓ Check for understanding p.372<br>✓ Study Guide and Intervention workbook pages 85-86<br>✓ Differentiated Instruction page 419 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 421 (52-56) | Textbook<br>✓ NGSSS Practice (Box) page 422<br>✓ Practice Textbook pp.427-429<br>✓ Check for understanding p.427<br>✓ Study Guide and Intervention workbook pages 87-88<br>✓ Differentiated Instruction page 428 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page<br>✓ 429 (47-53) |
| Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 7: Inverses and Radical Functions and Relations | Unit Essential Question:<br>How do you describe and analyze the relationship between a function and its inverse?<br>How do you develop the definition of logarithm by exploring the relationship between exponential functions and their inverses?<br>How do you determine the solutions of square root equations using algebraic methods? | |
| Semester: TWO | Grading Period: 2<br>Pacing: 24 days | |
| Concept:<br>Section 7-4: The Nth Roots<br>Section 7-4 Extended: Graphing Technology Lab: Graphing *nth* Root Functions<br>Pacing 4 days | Concept:<br>Section 7-5 : Operations with Radical Expressions<br>Pacing 4 days | Concept:<br>Section 7-6: Rational Exponents<br>Pacing 4 days |
| NGSSS Standards(s)<br><br>MA.912.A.10.3: Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities, rational or radical expressions or logarithmic or exponential function. | NGSSS Standards(s)<br><br>MA.912.A.6.2- Add, Subtract, multiply, divide radical expressions (*square roots and higher*). *Also assesses MA.912.A.1.4* | NGSSS Standards(s)<br><br>MA.912.A.2.6 Identify and graph common functions (including, but not limited to linear, rational, quadratic, cubic, radical, absolute value). |
| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* |
| Lesson Essential Question:<br>How do you simplify radicals?<br>How do you use calculator to approximate radicals? | Lesson Essential Question:<br>How do you simplify radical expressions?<br>How do you add, subtract, multiply, and divide radical expressions? | Lesson Essential Question:<br>How do you write rational exponents with radical form, and vice versa?<br>How do you simplify expressions in exponential or radical form? |

| Vocabulary: | Vocabulary: | Vocabulary: |
|---|---|---|
| ❖ Nth root<br>❖ Radical sign<br>❖ Index<br>❖ Radicand<br>❖ Principal root | ❖ Rationalize the denominator<br>❖ Like radical expressions conjugate | ❖ Rational Exponents (concept box)<br>❖ Expressions with Rational Exponents (rule box) |

**Course Pacing Guide**

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ Getting started page 430<br>✓ Practice Textbook pp.433-434<br>✓ Check for understanding p.433<br>✓ Study Guide and Intervention workbook pages 89-90<br>✓ Differentiated Instruction page 433 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 435 (59-69) | Textbook<br>✓ NGSSS Practice (Box) page 436<br>✓ Practice Textbook pp. 443-444<br>✓ Check for understanding p.443<br>✓ Study Guide and Intervention workbook pages 91-92<br>✓ Differentiated Instruction page 445 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 444 (60-65) | Textbook<br>✓ NGSSS Practice (Box) page 445<br>✓ Practice Textbook pp.449-451<br>✓ Check for understanding p.449<br>✓ Study Guide and Intervention workbook pages 93-94<br>✓ Differentiated Instruction page 448 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 451 (66-70) |
| Graphic Calculator page 437<br>Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs (Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | *Other Resources: Online or CD*<br>Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs (Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs (Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 7: Inverses and Radical Functions and Relations | Unit Essential Question:<br>How do you describe and analyze the relationship between a function and its inverse?<br>How do you develop the definition of logarithm by exploring the relationship between exponential functions and their inverses?<br>How do you determine the solutions of square root equations using algebraic methods? | |
| Semester: TWO | Grading Period: 2<br>Pacing: 24 days | |
| Concept:<br>Section 7-7: Solving Radical Equations and Inequalities<br>Section 7-7 Graphing Technology Lab<br>Pacing 5 days | | |
| NGSSS Standards(s)<br><br>MA.912.A.6.5 Solve equations that contain radical expressions<br><br>MA.912.A.10.3: Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities, rational or radical expressions or logarithmic or exponential function. | Common Core Standards:<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types*<br><br>Domain: Reasoning with Equations and Inequalities<br>A.REI.11 : Represent and solve equations and inequalities graphically | |
| Lesson Essential Question:<br>How do you solve equations containing radicals?<br>How do you solve inequalities containing radicals? | | |
| Vocabulary:<br>❖ Radical equation<br>❖ Extraneous solution<br>❖ Radical inequality | | |

Resources:

- ✓ Getting started page 452
- ✓ Practice Textbook pp.456-457
- ✓ Check for understanding p.456
- ✓ Study Guide and Intervention workbook pages 95-96
- ✓ Differentiated Instruction page 459 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 458 (67-75)

Graphic Calculator can be used

Activity 1:

**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

# Course Pacing Guide

| Course Code: 1200330 | | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title:  Chapter 7: Inverses and Radical Functions and Relations | | Unit Essential Question:<br>How do you describe and analyze the relationship between a function and its inverse?<br>How do you develop the definition of logarithm by exploring the relationship between exponential functions and their inverses?<br>How do you determine the solutions of square root equations using algebraic methods? | |
| Semester:  TWO | Grading Period:  2<br>Pacing:  24  days | | |
| Concept:<br>Chapter 7 Review/Study Guide/Tests | | | |
| NGSSS Standards(s)<br><br>MA.912.A.2.6 Identify and graph common functions (including, but not limited to linear, rational, quadratic, cubic, radical, absolute value).<br><br>MA.912.A.2.7 Perform operations of functions algebraically, numerically and graphically.<br><br>MA.912.A.2.8 Determine the composition of functions<br><br>MA.912.A.6.5 Solve equations that contain radical expressions<br><br>MA.912.A.10.3: Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities, rational or radical expressions or logarithmic or exponential function. | | Common Core Standards:<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | |
| **Chapter 7 Vocabulary Check page 462** | | | ✓ **Chapter 7 Study Guide and Review pages 463-466**<br>✓ **Chapter 7 Cumulative Test page 467**<br>✓ **Preparing for Standardized Tests pp.468-469**<br>✓ **NGSSS Practice Test 470-471** |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|

**Course Pacing Guide**

| Unit Title: Chapter 8: Exponential and Logarithmic Functions and Relations | | Unit Essential Question: How do you solve Exponential Equations and Inequalities? How do you determine the solutions of logarithmic equations using algebraic methods? |
|---|---|---|
| Semester: TWO | Grading Period: 2 <br> Pacing: 24 days | |

| Concept: <br> Section 8-1: Graphing Exponential Functions <br> Pacing 3 days | Concept: <br> Section 8-2 Solving Exponential Equations and Inequalities <br> Pacing 4 days | Concept: <br> Section 8-3 Logarithms and Logarithmic Functions <br> Pacing 3 days |
|---|---|---|
| NGSSS Standards(s) <br><br> MA.912.A.8.5 Graph exponential and logarithmic functions. <br><br> MA.912.A.8.7 Solve applications of exponential growth and decay. *Also addresses LA.912.4.2.1, MA.912.A.2.10, MA.912. A.8.1, and MA.912.A.10.3* | NGSSS Standards(s) <br><br> MA.912.A.8.5 Graph exponential and logarithmic functions. <br><br> MA.912.A.10.3: Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities, rational or radical expressions or logarithmic or exponential function | NGSSS Standards(s) <br><br> MA.912.A.8.1 Define exponential and logarithmic functions and determine their relationship. <br><br> MA.912.A.8.2 Define and use the properties of logarithms to simplify logarithmic to simplify logarithmic expressions and to find their approximate values. *Also addresses MA.912.A.2.10 and MA.912.A.8.3* |
| Common Core Standards: <br><br> **Domain : Building Functions** <br><br> F.BF.1b: Build a function that models a relationship between two quantities <br><br> F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s): <br><br> **Domain : Building Functions** <br><br> F.BF.1b: Build a function that models a relationship between two quantities <br><br> F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s): <br> **Domain : Building Functions** <br><br> F.BF.1b: Build a function that models a relationship between two quantities <br><br> F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* |

**Course Pacing Guide**

| Lesson Essential Question:<br>How do you graph exponential growth functions?<br>How do you graph exponential decay functions? | Lesson Essential Question:<br>How do you solve exponential equations?<br>How do you solve exponential inequalities? | Lesson Essential Question:<br>How do you write rational exponents with radical form, and vice versa?<br>How do you simplify expressions in exponential or radical form? |
|---|---|---|
| Vocabulary:<br>&#10070; Exponential functions<br>&#10070; Exponential growth<br>&#10070; Asymptote<br>&#10070; Growth factor<br>&#10070; Exponential decay<br>&#10070; Decay factor | Vocabulary:<br>&#10070; Exponential equation<br>&#10070; Compound interest<br>&#10070; Exponential inequality | Vocabulary:<br>&#10070; Logarithm<br>&#10070; Logarithmic function |

Resources:

- ✓ Getting started page 473
- ✓ Practice Textbook pp.479-481
- ✓ Check for understanding p.479
- ✓ Study Guide and Intervention workbook pages 97-98
- ✓ Differentiated Instruction page 477 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 481 (34-38)

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Resources:

Textbook
- ✓ NGSSS Practice (Box) page 482
- ✓ Practice Textbook pp. 488-489
- ✓ Check for understanding p.488
- ✓ Study Guide and Intervention workbook pages 99-100
- ✓ Differentiated Instruction page 491 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 490 (42-49)

Graphic Calculator page 483

Activity 1:

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Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Resources:

Textbook
- ✓ NGSSS Practice (Box) page 491
- ✓ Practice Textbook pp. 496-498
- ✓ Check for understanding p.496
- ✓ Study Guide and Intervention workbook pages 101-102
- ✓ Differentiated Instruction page 499 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 498 (60-66)

Graphic calculator page 500-501

Activity 1:

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**Course Pacing Guide**

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 8: Exponential and Logarithmic Functions and Relations | Unit Essential Question: How do you solve Exponential Equations and Inequalities? How do you determine the solutions of logarithmic equations using algebraic methods? | |
| Semester: TWO    Grading Period: 2   Pacing: 24 days | | |
| Concept: Section 8-4: Solving Logarithmic Equations and Inequalities Pacing 3 days | Concept: Section 8-5 Properties of Logarithms Pacing 3 days | Concept: Section 8-6 Common Logarithms Pacing 3 days |
| NGSSS Standards(s)<br><br>MA.912.A.8.2 Define and use the properties of logarithms to simplify logarithmic to simplify logarithmic expressions and to find their approximate values. *Also addresses MA.912.A.2.10 and MA.912.A.8.3*<br><br>MA.912.A.8.5 Graph exponential and logarithmic functions. | NGSSS Standards(s)<br><br>MA.912.A.8.2 Define and use the properties of logarithms to simplify logarithmic to simplify logarithmic expressions and to find their approximate values. *Also addresses MA.912.A.2.10 and MA.912.A.8.3* | NGSSS Standards(s)<br><br>MA.912.A.8.2 Define and use the properties of logarithms to simplify logarithmic to simplify logarithmic expressions and to find their approximate values. *Also addresses MA.912.A.2.10 and MA.912.A.8.3*<br><br>MA.912.A.8.6 Use the change of base formula. *Also addresses MA.912.A.8.5* |
| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* |

**Course Pacing Guide**

| Lesson Essential Question: | Lesson Essential Question: | Lesson Essential Question: |
|---|---|---|
| How do you solve logarithmic equations?<br>How do you solve logarithmic inequalities? | How do you simplify and evaluate expressions using the properties of logarithms?<br>How do you solve logarithmic equations using the properties of logarithms? | How do you solve exponential equations and inequalities using common logarithms?<br>How do you evaluate logarithmic expressions using the Change of Base Formula? |
| Vocabulary:<br>❖ Logarithmic equation<br>❖ Logarithmic inequality | Vocabulary:<br>❖ Product Property of Logarithms (key concept box)<br>❖ Quotient Property of Logarithms (key concept box)<br>❖ Power Property of Logarithms (Key Concept box) | Vocabulary:<br>❖ Common Logarithm<br>❖ Change of Base Formula |

**Course Pacing Guide**

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ Getting started page 499<br>✓ Practice Textbook pp.504-505<br>✓ Mid-chapter Quiz pg. 508<br>✓ Check for understanding p.504<br>✓ Study Guide and Intervention workbook pages 103-104<br>✓ Differentiated Instruction page 507 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 506 (38-44) | Textbook<br>✓ NGSSS Practice (Box) page 507<br>✓ Practice Textbook pp. 512-513<br>✓ Check for understanding p.512<br>✓ Study Guide and Intervention workbook pages 105-106<br>✓ Differentiated Instruction page 515 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 514 (61-68) | Textbook<br>✓ NGSSS Practice (Box) page 515<br>✓ Practice Textbook pp. 519-521<br>✓ Check for understanding p.519<br>✓ Study Guide and Intervention workbook pages 107-108<br>✓ Differentiated Instruction page 522 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 521 (68-72) |

Activity 1:

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WWW.CPALMS.ORG

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Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Graphic Calculator page 523-424

Activity 1:

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(Also see resource page for other resources)

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

| | | |
|---|---|---|
| Common Core Standards Activity site:<br>WWW.CPALMS.ORG<br><br>Incorporate Common Core 8 Mathematical Practices<br>   &#10148; Make sense of problems and persevere in solving them<br>   &#10148; Reason abstractly and quantitatively<br>   &#10148; Construct viable arguments and critique the reasoning of others<br>   &#10148; Model with mathematics<br>   &#10148; Use appropriate tools strategically<br>   &#10148; Attend to precision<br>   &#10148; Look for and make use of structure<br>   &#10148; Look for and express regularity in repeated reasoning | | |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 8: Exponential and Logarithmic Functions and Relations | Unit Essential Question:<br>How do you solve Exponential Equations and Inequalities?<br>How do you determine the solutions of logarithmic equations using algebraic methods? | |
| Semester:  TWO    Grading Period:  2<br>Pacing:  24   days | | |
| Concept:<br>Section 8-7: Base **(e)** and Natural Logarithms<br>Pacing 3 days | Concept:<br>Section 8-8<br>Pacing  3 days | |
| NGSSS Standards(s)<br><br>MA.912.A.8.2 Define and use the properties of logarithms to simplify logarithmic to simplify logarithmic expressions and to find their approximate values. *Also addresses MA.912.A.2.10 and MA.912.A.8.3*<br><br>MA.912.A.8.7 Solve applications of exponential growth and decay. *Also assesses MA.912.A.8.5 and MA.912.A.10.3* | NGSSS Standards(s)<br><br>MA.912.A.8.5 Graph exponential and logarithmic functions.<br><br>MA.912.A.8.7 Solve applications of exponential growth and decay. *Also assesses MA.912.A.8.5 and MA.912.A.10.3* | |
| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | |

| | | |
|---|---|---|
| Lesson Essential Question:<br>How do you evaluate expressions involving the nature base and natural logarithm?<br>How do you solve exponential equations and inequalities using natural logarithms. | Lesson Essential Question:<br>How do you use logarithms to solve problems involving exponential growth and decay?<br>How do you use logarithms to solve problems involving logistic growth? | |
| Vocabulary:<br>❖ Natural base **e**<br>❖ Natural base exponential function<br>❖ Natural Logarithm | Vocabulary:<br>❖ Rate of continuous growth<br>❖ Rate of continuous decay<br>❖ Logistic growth model | |

Resources:

- ✓ Getting started page 522
- ✓ Practice Textbook pp. 529-530
- ✓ Check for understanding p.529
- ✓ Study Guide and Intervention workbook pages 109-110
- ✓ Differentiated Instruction page 531 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 530 (58-62)

Activity 1:

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Common Core Standards and Activity site:
WWW.CPALMS.ORG

Resources:

Textbook
- ✓ NGSSS Practice (Box) page 531
- ✓ Practice Textbook pp. 537-538
- ✓ Check for understanding p.537
- ✓ Study Guide and Intervention workbook pages 111-112
- ✓ Differentiated Instruction page 539 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 538 (14-18)

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**Course Pacing Guide**

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 8: Exponential and Logarithmic Functions and Relations | Unit Essential Question:<br>How do you solve Exponential Equations and Inequalities?<br>How do you determine the solutions of logarithmic equations using algebraic methods? | |
| Semester:  TWO     Grading Period:  2 <br> Pacing:  24  days | | |
| Concept:<br>Chapter 8 : Study Guide/Tests and NGSSS /ACT/SAT PREP | | |
| NGSSS Standards(s)<br><br>MA.912.A.8.2 Define and use the properties of logarithms to simplify logarithmic to simplify logarithmic expressions and to find their approximate values. *Also addresses MA.912.A.2.10 and MA.912.A.8.3*<br><br>MA.912.A.8.7 Solve applications of exponential growth and decay. *Also assesses MA.912.A.8.5 and MA.912.A.10.3* | NGSSS Standards(s)<br><br>MA.912.A.8.5 Graph exponential and logarithmic functions. | |
| Common Core Standards:<br><br>**Domain : Building Functions**<br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions.  *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standards:<br><br>**Domain : Building Functions**<br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types | |
| **Chapter 8 Vocabulary Check page 541** | ✓   **Chapter 8 Study Guide and Review pages 542-544**<br>✓   **Chapter 8 Practice Test page 545**<br>✓   **Preparing for Standardized Tests pp. 546-547**<br>✓   **NGSSS Practice Test 548-549** | |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 9: Rational Functions and Relations | Unit Essential Question:<br>How do you solve rational equations and inequalities | |
| Semester:  TWO | Grading Period:  2<br>Pacing:  24   days | |
| Concept:<br>Section 9-1: Multiplying and Dividing Rational Expressions<br>Pacing 3 days | Concept:<br>Section 9-2: Adding and Subtracting Rational Expressions<br>Pacing  3 days | Concept:<br>Section 9-3 Graphing Reciprocal Functions<br>Pacing 3 days |
| NGSSS Standards(s)<br><br>MA.912.A.5.2 Add, Subtract, multiply and divide rational expressions<br><br>MA.912.A.5.3 Simplify complex fractions. *Also addresses MA.912.A.10.3* | NGSSS Standards(s)<br><br>MA.912.A.5.2 Add, Subtract, multiply and divide rational expressions | NGSSS Standards(s)<br><br>MA.912.A.5.6 Identify removable and non-removable discontinuities and vertical, horizontal, and oblique asymptotes of a graph of a rational function, find the zeros, and graph the function. *Also assesses MA.912.A.2.6*<br><br>LA.910.1.6.1 The student will use new vocabulary that is introduced and taught directly. |

**Course Pacing Guide**

| Common Core Standards: | Common Core Standard(s): | Common Core Standard(s): |
|---|---|---|
| **Domain: Arithmetic with Polynomials and Rational Expressions** | **Domain: Arithmetic with Polynomials and Rational Expressions** | **Domain: Arithmetic with Polynomials and Rational Expressions** |
| A.APR.6, (+) 7: Rewrite rational expressions | A.APR.6, (+) 7: Rewrite rational expressions | A.APR.6, (+) 7: Rewrite rational expressions |
| **Domain : Building Functions** | **Domain : Building Functions** | **Domain : Building Functions** |
| F.BF.1b: Build a function that models a relationship between two quantities | F.BF.1b: Build a function that models a relationship between two quantities | F.BF.1b: Build a function that models a relationship between two quantities |
| F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* |
| Lesson Essential Question: How do you simplify rational expressions? How do you simplify complex fractions? | Lesson Essential Question: How do you determine the LCM of polynomials? How do you add, subtract rational expressions? | Lesson Essential Question: How do you determine properties of reciprocal functions? How do you graph transformations for reciprocal functions? |
| Vocabulary: ❖ Rational expression ❖ Complex fraction | Vocabulary: ❖ Adding Rational Expressions (Key concept box) ❖ Subtracting Rational Expressions (Key concept box) | Vocabulary: ❖ Reciprocal function ❖ Hyperbola |

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ Getting started page 551<br>✓ Practice Textbook pp.557-559<br>✓ Check for understanding p.557<br>✓ Study Guide and Intervention workbook pages 113-114<br>✓ Differentiated Instruction page 561 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 560 (59-65) | Textbook<br>✓ NGSSS Practice (Box) page 561<br>✓ Practice Textbook pp. 565-567<br>✓ Check for understanding p.565<br>✓ Study Guide and Intervention workbook pages 115-116<br>✓ Differentiated Instruction page 566 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 567 (63-66) | Textbook<br>✓ NGSSS Practice (Box) page 568<br>✓ Practice Textbook pp. 572-574<br>✓ Check for understanding p.572<br>✓ Study Guide and Intervention workbook pages 117-118<br>✓ Differentiated Instruction page 572 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 574 (38-42) |
| Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs (Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs (Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs (Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| | | |
|---|---|---|
| Common Core Standards Activity site:<br>WWW.CPALMS.ORG<br><br>Incorporate Common Core 8 Mathematical Practices<br>  &#10148;  Make sense of problems and persevere in solving them<br>  &#10148;  Reason abstractly and quantitatively<br>  &#10148;  Construct viable arguments and critique the reasoning of others<br>  &#10148;  Model with mathematics<br>  &#10148;  Use appropriate tools strategically<br>  &#10148;  Attend to precision<br>  &#10148;  Look for and make use of structure<br>  &#10148;  Look for and express regularity in repeated reasoning | | |

**Course Pacing Guide**

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 9: Rational Functions and Relations | Unit Essential Question:<br>How do you solve rational equations and inequalities? | |
| Semester:  TWO    Grading Period:  2<br>Pacing:  24   days | | |
| Concept:<br>Section 9-4: Graphing Rational Functions<br>Pacing 3 days | Concept:<br>Section 9-5: Variations Functions<br>Pacing  3 days | Concept:<br>Section 9-6 Solving Rational Equations and Inequalities<br>Pacing 3 days |
| NGSSS Standards(s)<br><br>MA.912.A.2.12 Solve problems using direct, inverse, and joint variations | NGSSS Standards(s)<br><br>MA.912.A.2.12 Solve problems using direct, inverse, and joint variations | NGSSS Standards(s)<br><br>MA.912.A.5.5 Solve rational equations<br><br>MA.912.A.5.7 Solve real-world problems involving rational equations |
| Common Core Standards:<br><br>**Domain: Arithmetic with Polynomials and Rational Expressions**<br><br>A.APR.6, (+) 7: Rewrite rational expressions<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions.  *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br><br>**Domain: Arithmetic with Polynomials and Rational Expressions**<br><br>A.APR.6, (+) 7: Rewrite rational expressions<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions.  *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br><br>**Domain: Arithmetic with Polynomials and Rational Expressions**<br><br>A.APR.6, (+) 7: Rewrite rational expressions<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* |

**Course Pacing Guide**

| Lesson Essential Question:<br>How do you graph rational functions with vertical and horizontal asymptotes?<br><br>How do you graph rational functions with oblique asymptotes and point discontinuity? | Lesson Essential Question:<br>How do you recognize and solve direct and joint variation problems?<br><br>How do you recognize and solve inverse and combined variation problems? | Lesson Essential Question:<br>How do you solve rational equations?<br>How do you solve rational inequalities? |
|---|---|---|
| ❖ Vocabulary: Rational function ,Vertical asymptote, horizontal asymptote, oblique asymptote, point discontinuity | ❖ Vocabulary: direct variation, constant of variation, joint variation, inverse variation, combined variation | ❖ Vocabulary: Rational equation, weighted average, Rational inequality |

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ NGSSS Practice (Box) page 575<br>✓ Mid-chapter Test page 576<br>✓ Practice Textbook pp.581-583<br>✓ Check for understanding p.581<br>✓ Study Guide and Intervention workbook pages 119-120<br>✓ Differentiated Instruction page 584 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 583 (42-46) | Textbook<br>✓ NGSSS Practice (Box) page 584<br>✓ Practice Textbook pp. 590-591<br>✓ Check for understanding p.590<br>✓ Study Guide and Intervention workbook pages 121-122<br>✓ Differentiated Instruction page 591 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 592 (48-52) | Textbook<br>✓ NGSSS Practice (Box) page 593<br>✓ Practice Textbook pp. 600-601<br>✓ Check for understanding p.600<br>✓ Study Guide and Intervention workbook pages 123-123<br>✓ Differentiated Instruction page 602 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 601 (36-39) |

Graphic Calculator Activity page 585

Activity 1:

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**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Graphic Calculator Activity page 603-604

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill |
|---|---|
| Unit Title: Chapter 9: Rational Functions and Relations | Unit Essential Question:<br>How do you solve rational equations and inequalities?<br><br>How do you graph rational functions with vertical and horizontal asymptotes?<br><br>How do you graph rational functions with oblique asymptotes and point discontinuity? |

| Semester: TWO | Grading Period: 2<br>Pacing: 24 days | |
|---|---|---|
| Concept:<br>Chapter 9 Study Guide and Tests | | |

| NGSSS Standards(s) | Common Core Standards: | |
|---|---|---|
| MA.912.A.2.12 Solve problems using direct, inverse, and joint variations<br><br>MA.912.A.5.2 Add, Subtract, multiply and divide rational expressions<br><br>MA.912.A.5.3 Simplify complex fractions. *Also addresses MA.912.A.10.3*<br><br>MA.912.A.5.5 Solve rational equations<br><br>MA.912.A.5.7 Solve real-world problems involving rational equations<br><br>MA.912.A.5.6 Identify removable and non-removable discontinuities and vertical, horizontal, and oblique asymptotes of a graph of a rational function, find the zeros, and graph the function. *Also assesses MA.912.A.2.6* | **Domain: Arithmetic with Polynomials and Rational Expressions**<br><br>A.APR.6, (+) 7: Rewrite rational expressions<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | |

| Chapter 9 Vocabulary Check page 605 | ✓ **Chapter 9 Study Guide and Review pages 606-608**<br>✓ **Chapter 9 Practice Test page 609**<br>✓ **Preparing for Standardized Tests (610-611)**<br>✓ **NGSSS Practice Test 612-613** | |
|---|---|---|

**Course Pacing Guide**

| Course Code: 1200330 | | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title:  Chapter 10: Conic Sections | | Unit Essential Question:<br>How do you describe a conic section as the intersection of a plane and a cone?<br>How do you describe and sketch conic sections circles, parabolas, ellipses and hyperbolas?<br>How do you solve systems of linear –non linear systems? | |
| Semester:  TWO | Grading Period:  2<br>Pacing:  24   days | | |
| Concept:<br>Section 10-1: Midpoint and Distance Formula<br>Pacing 3 days | | Concept:<br>Section 10-2: Parabolas<br>Pacing  3 days | Concept:<br>Section 10.3: Circles<br>Explore 10.3<br>Pacing 3 days |
| NGSSS Standards(s)<br><br>MA.912.G.1.1 Find the lengths and midpoints of line segments in two dimensional coordinate systems. | | NGSSS Standards(s)<br><br>MA.912.A.9.1 Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity., etc.)<br><br>MA.912.A.9.2 Graph conic sections with and without using graphing technology | NGSSS Standards(s)<br><br>MA.912.G.6.6 Given the center and the radius, find the equation of a circle in the coordinate plane or given the equation of a circle in center-radius form, state the center and the radius of the circle.<br><br>MA.912.G.6.7 Given the equation of a circle in center-radius form or given the center and the radius of a circle, sketch the graph of the circle. *Also addresses MA.912.A. 9.1 and MA.912.A.9.2* |
| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions.  *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | | Common Core Standard(s):<br><br>**Domain: Expressing Geometric Properties with Equations.**<br><br>G.GPE.3: Translate between the geometric description and the equation for a conic section<br><br>**Domain : Building Functions**<br><br>F.BF.3,4a: Build new functions from existing functions.  *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | **Common Core Standard(s)**<br><br>**Domain: Expressing Geometric Properties with Equations.**<br><br>G.GPE.3: Translate between the geometric description and the equation for a conic section<br><br>**Domain : Building Functions**<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* |

**Course Pacing Guide**

| Lesson Essential Question: How do you find the midpoint of a segment on the coordinate plane? How do you find the distance between two points on the coordinate plane? | Lesson Essential Question: How do you write equations of parabolas in standard form? How do you graph parabolas? | Lesson Essential Question: How do you write equations and circles? How do you graph circles? |
|---|---|---|
| Vocabulary:<br>❖ Midpoint formula (Key concept box)<br>❖ Distance formula (Key concept box) | Vocabulary:<br>❖ Parabola<br>❖ Focus<br>❖ Directrix<br>❖ Latus rectum<br>❖ Standard from<br>❖ General form | Vocabulary:<br>❖ circle<br>❖ center<br>❖ radius |

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ Get Ready for Chapter 10 page 615<br>✓ Practice Textbook pp.619-621<br>✓ Check for understanding p.619<br>✓ Study Guide and Intervention workbook pages 125-126<br>✓ Differentiated Instruction page 622 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 621 (42-46) | Textbook<br>✓ NGSSS Practice (Box) page 622<br>✓ Practice Textbook pp. 627-628<br>✓ Check for understanding p.627<br>✓ Study Guide and Intervention workbook pages 127-128<br>✓ Differentiated Instruction page 629 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 628 (37-40) | Textbook<br>✓ NGSSS Practice (Box) page 629<br>✓ Practice Textbook pp.634-635<br>✓ Check for understanding p.634<br>✓ Study Guide and Intervention workbook pages 129-130<br>✓ Differentiated Instruction page 637-Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 636 (62-67) |
| Activity 1:<br>**S**earch **Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**S**earch **Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**S**earch **Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| | |
|---|---|
| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
| Unit Title:  Chapter 10: Conic Sections | Unit Essential Question:<br>How do you describe a conic section as the intersection of a plane and a cone? |
| Semester:  TWO | Grading Period:  2<br>Pacing:  24  days | How do you describe and sketch conic sections circles, parabolas, ellipses and hyperbolas?<br>How do you solve systems of linear –non linear systems? |

**Course Pacing Guide**

| Concept:<br>Section 10-4: Ellipses<br>Pacing 3 days | Concept:<br>Section 10-5: Hyperbolas<br>Pacing 3 days | Concept:<br>Section 10.6: Identifying Conic Sections<br>Pacing 3 days |
|---|---|---|
| NGSSS Standards(s)<br><br>MA.912.A.9.1 Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity., etc.)<br><br>MA.912.A.9.2 Graph conic sections with and without using graphing technology | NGSSS Standards(s)<br><br>MA.912.A.9.1 Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity., etc.)<br><br>MA.912.A.9.2 Graph conic sections with and without using graphing technology | NGSSS Standards(s)<br><br>MA.912.A.9.1 Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity., etc.)<br><br>MA.912.A.9.2 Graph conic sections with and without using graphing technology |
| Common Core Standards:<br>**Domain: Expressing Geometric Properties with Equations.**<br><br>G.GPE.3: Translate between the geometric description and the equation for a conic section<br><br>**Domain : Building Functions**<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | Common Core Standard(s):<br>**Domain: Expressing Geometric Properties with Equations.**<br><br>G.GPE.3: Translate between the geometric description and the equation for a conic section<br><br>**Domain : Building Functions**<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | **Common Core Standard(s)**<br>**Domain: Expressing Geometric Properties with Equations.**<br><br>G.GPE.3: Translate between the geometric description and the equation for a conic section<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* |
| Lesson Essential Question:<br>How do you write equations of ellipses?<br>How do you graph ellipses? | Lesson Essential Question:<br>How do you write the equations of hyperbolas and graph hyperbolas? | Lesson Essential Question:<br>How do you write equations of conic sections in standard form?<br>How do you identify conic sections from their equations. |

## Course Pacing Guide

| Vocabulary: | Vocabulary: | Vocabulary: |
|---|---|---|
| ❖ Ellipse<br>❖ Foci<br>❖ Major axis<br>❖ Minor axis<br>❖ Center<br>❖ Vertices<br>❖ Co-vertices<br>❖ Constant sum | ❖ Hyperbola<br>❖ Transverse axis<br>❖ Conjugate axis<br>❖ Foci<br>❖ Vertices<br>❖ Co-vertices<br>❖ Constant difference | ❖ Standard forms of Conic sections (Concept box)<br>❖ Classify conics with the discriminant (concept box) |

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ NGSSS Practice (box) page 637<br>✓ Practice Textbook pp. 644-645<br>✓ Check for understanding p.644<br>✓ Study Guide and Intervention workbook pages 131-132<br>✓ Differentiated Instruction page 646 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 645 (40-46)<br><br>Activity 1:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Textbook<br>✓ NGSSS Practice (Box) page 646<br>✓ Mid-chapter Test page 647<br>✓ Practice Textbook pp. 652-654<br>✓ Check for understanding p.652<br>✓ Study Guide and Intervention workbook pages 133-134<br>✓ Differentiated Instruction page 655 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 654 (44-49)<br><br>Activity 1:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Textbook<br>✓ NGSSS Practice (Box) page 655<br>✓ Practice Textbook pp. 658-660<br>✓ Check for understanding p.658<br>✓ Study Guide and Intervention workbook pages 135-136<br>✓ Differentiated Instruction page 660-Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 659 (44-47)<br><br>Graphic Calculator Activity page 661<br>Activity 1:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 10: Conic Sections | Unit Essential Question:<br>How do you describe a conic section as the intersection of a plane and a cone? | |
| Semester: TWO | Grading Period:  2<br>Pacing: 24   days | How do you describe and sketch conic sections circles, parabolas, ellipses and hyperbolas?<br>How do you solve systems of linear –non linear systems? |
| Concept:<br>Section 10-7: Solving Linear-Nonlinear Systems<br>Pacing 3 days | | |
| NGSSS Standards(s)<br><br>MA.912.A. 7.7 Solve non linear systems and non linear equations algebraically and graphically with or without technology | | |
| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions.  *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | | |
| Lesson Essential Question:<br><br>How do you solve systems of linear and non linear equations algebraically and graphically?<br><br>How do you solve systems of linear and non linear inequalities graphically? | | |

| | | |
|---|---|---|
| Vocabulary:<br>❖ Shaded region<br>❖ System of quadratic inequalities | | |
| Resources:<br><br>✓ NGSSS Practice (box) page 660<br>✓ Practice Textbook pp. 665-666<br>✓ Check for understanding p.665<br>✓ Study Guide and Intervention workbook pages 137-138<br>✓ Differentiated Instruction page 667 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 666 (51-54)<br><br>Graphic Calculator Activity page<br>Activity 1:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | | |

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 10: Conic Sections | Unit Essential Question:<br>How do you describe a conic section as the intersection of a plane and a cone? | |
| Semester: TWO    Grading Period: 2<br>                Pacing: 24 days | How do you describe and sketch conic sections circles, parabolas, ellipses and hyperbolas?<br>How do you solve systems of linear –non linear systems? | |
| Concept:<br>Chapter 10 Conic Sections<br>Study Guide and Tests | | |
| NGSSS Standards(s)<br><br>MA.912.A.9.1 Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity., etc.)<br><br>MA.912.A.9.2 Graph conic sections with and without using graphing technology | Common Core Standards:<br><br>**Domain: Expressing Geometric Properties with Equations.**<br><br>G.GPE.3: Translate between the geometric description and the equation for a conic section<br><br>**Domain : Building Functions**<br><br>F.BF.1b: Build a function that models a relationship between two quantities<br><br>F.BF.3,4a: Build new functions from existing functions. *Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types* | |
| Chapter 10 Vocabulary check page 668 | ✓ **Chapter 10 Study Guide and Review pages 669-672**<br>✓ **Chapter 10 Practice Test page 673**<br>✓ **Preparing for Standardized Tests 674-675**<br>✓ **NGSSS Practice Test 676-677** | |

## Course Pacing Guide

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| Unit Title:  Chapter 11: Sequences and Series | Unit Essential Question:<br>How do you find the sum of an infinite geometric series |

| Semester:<br>Fourth Courses | Grading Period:  2<br>Pacing:  24   days | |
|---|---|---|
| Concept:<br>Section  11-1: Sequences and Functions<br>Pacing 3 days | Concept:<br>Section 11-2 Arithmetic Sequences and Series<br>Pacing  3 days | Concept:<br>Section 11-3 Geometric Sequence and Series<br>Pacing 3 days |
| NGSSS Standards(s)<br><br>MA.912.D.11.1 Define arithmetic and geometric sequences and series.<br><br>MA.912.D.11.3 Find specified terms of arithmetic and geometric sequences. | NGSSS Standards(s)<br><br>MA.912.D.11.3 Find specified terms of arithmetic and geometric sequences.<br><br>MA.912.D.11.4 Find Partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use sigma notation where applicable. *Also addresses MA.912.D.11.1 and MA.912.D.11.2* | NGSSS Standards(s)<br><br>MA.912.D.11.3 Find specified terms of arithmetic and geometric sequences.<br><br>MA.912.D.11.4 Find Partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use sigma notation where applicable. *Also addresses MA.912.D.11.1 and MA.912.D.11.2* |
| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>Build a function that models a relationship between two quantities.<br><br>F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula use them to model situations, and translate between the two forms. | Common Core Standard(s):<br><br>**Domain : Building Functions**<br><br>Build a function that models a relationship between two quantities.<br><br>F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula use them to model situations, and translate between the two forms. | **Common Core Standard(s)**<br><br>**Domain : Building Functions**<br><br>Build a function that models a relationship between two quantities.<br><br>F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula use them to model situations, and translate between the two forms. |
| Lesson Essential Question:<br>How to you relate arithmetic sequences to linear functions. | Lesson Essential Question:<br>How do you use arithmetic sequences.<br>How do you find sums of arithmetic series | Lesson Essential Question:<br>How do you use geometric sequences?<br>How do you find the sums of geometric series? |

**Course Pacing Guide**

| Vocabulary: | Vocabulary: | Vocabulary: |
|---|---|---|
| ❖ Sequence<br>❖ Term<br>❖ Finite sequence<br>❖ Infinite sequence<br>❖ Arithmetic sequence<br>❖ Common difference<br>❖ Geometric sequence<br>❖ Common ratio | ❖ Arithmetic means<br>❖ Series<br>❖ Arithmetic series<br>❖ Partial sum<br>❖ Sigma notation | ❖ Geometric means<br>❖ Geometric series |

**Course Pacing Guide**

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ Get Ready for Chapter 11 page 685<br>✓ Practice Textbook pp. 685-687<br>✓ Check for understanding p.685<br>✓ Study Guide and Intervention workbook pages 139-140<br>✓ Differentiated Instruction page 684 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 686 (54-60) | Textbook<br>✓ NGSSS Practice (Box) page 687<br>✓ Practice Textbook pp. 692-693<br>✓ Check for understanding p.692<br>✓ Study Guide and Intervention workbook pages 141-142<br>✓ Differentiated Instruction page 693 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 694 (74-82) | Textbook<br>✓ NGSSS Practice (Box) page 695<br>✓ Practice Textbook pp. 699-700<br>✓ Check for understanding p.699<br>✓ Study Guide and Intervention workbook pages 143-144<br>✓ Differentiated Instruction page 702-Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 701 (64-72) |
|  Graphic Calculator Activity page<br><br>Activity 1:<br>**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs<br>**(Also see resource page for other resources)**<br><br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs<br>**(Also see resource page for other resources)**<br><br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs<br>**(Also see resource page for other resources)**<br><br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 11: Sequences and Series | Unit Essential Question:<br>How do you find the sum of an infinite geometric series? | |
| Semester:<br>Fourth Courses | Grading Period:  2<br>Pacing:  24   days | How do you write the recursive formulas for sequences?<br>How do you use mathematical induction to prove statements?<br>How do you find binomial experiments? | |
| Concept:<br>Section  11-4: Infinite Geometric Series<br>Pacing 3 days | Concept:<br>Section 11-5: Recursion and Iteration<br>Pacing  3 days | Concept:<br>Section 11-6: The Binomial Theorem<br>Pacing 3 days |
| NGSSS Standards(s)<br><br>MA.912.D.11.2 Use sigma notation to describe series<br><br>MA.912.D.11.4 Find Partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use sigma notation where applicable. *Also addresses MA.912.D.11.1 and MA.912.D.11.2*. | NGSSS Standards(s)<br><br>MA.912.D.11.1 Define arithmetic and geometric sequences and series | NGSSS Standards(s)<br><br>MA.912.A.4.12 Apply the Binomial Theorem |
| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>Build a function that models a relationship between two quantities.<br><br>F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula use them to model situations, and translate between the two forms. | Common Core Standard(s):<br><br>**Domain : Building Functions**<br><br>Build a function that models a relationship between two quantities.<br><br>F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula use them to model situations, and translate between the two forms. | **Common Core Standard(s)**<br><br>**Domain : Building Functions**<br><br>Build a function that models a relationship between two quantities.<br><br>F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula use them to model situations, and translate between the two forms. |

**Course Pacing Guide**

| Lesson Essential Question: | Lesson Essential Question: | Lesson Essential Question: |
|---|---|---|
| How do you find sums and infinite geometric series? <br><br> How do you write repeating decimals as fractions? | How do you recognize and use special sequences? <br><br> How do you iterate functions. | How do you use Pascal's triangle to expand powers of binomials? <br><br> How do you use the binomial theorem to expand powers of binomials |
| Vocabulary: <br> ❖ Infinite geometric series <br> ❖ Convergent series <br> ❖ Divergent series <br> ❖ Infinity | Vocabulary: <br> ❖ Fibonacci sequence <br> ❖ Recursive sequence <br> ❖ Explicit formula <br> ❖ Recursive formula <br> ❖ Iteration | Vocabulary: <br> ❖ Pascal's triangle |

**Course Pacing Guide**

| Resources: | Resources: | Resources: |
|---|---|---|

Resources:

- ✓ Get Ready for Chapter 702
- ✓ Practice Textbook pp. 708-709
- ✓ Check for understanding p.708
- ✓ Study Guide and Intervention workbook pages 145-146
- ✓ Differentiated Instruction page 711 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 710 (60-67)

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

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Resources:

Textbook
- ✓ NGSSS Practice (Box) page 711
- ✓ Practice Textbook pp. 717-718
- ✓ Mid-chapter Test page 713
- ✓ Check for understanding p.717
- ✓ Study Guide and Intervention workbook pages 147-148
- ✓ Differentiated Instruction page 716 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 718 (49-53)

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

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Resources:

Textbook
- ✓ NGSSS Practice (Box) page 719
- ✓ Practice Textbook pp. 723-725
- ✓ Check for understanding p.723
- ✓ Study Guide and Intervention workbook pages 149-150
- ✓ Differentiated Instruction page 725-Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 724 (34-38)

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 11: Sequences and Series | Unit Essential Question:<br>How do you find the sum of an infinite geometric series?<br>How do you write the recursive formulas for sequences?<br>How do you use mathematical induction to prove statements?<br>How do you find binomial experiments? | |
| Semester:<br>Fourth Courses | Grading Period:  2<br>Pacing:  24   days | |
| Concept:<br>Section  11-7: Proof by Mathematical Induction<br>Pacing 3 days | | |
| NGSSS Standards(s)<br><br>MA.912.D.1.3 Use mathematical induction to prove various concepts in number theory ( such as sums of infinite integer series, divisibility statements, and parity statements) , recurrence relations, and applications | | |
| Common Core Standards:<br><br>**Domain : Building Functions**<br><br>Build a function that models a relationship between two quantities.<br><br>F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula use them to model situations, and translate between the two forms. | | |
| Lesson Essential Question:<br>How do you find sums and infinite geometric series?<br>How do you write repeating decimals as fractions? | | |

| Vocabulary: | | |
|---|---|---|
| ❖ Mathematical induction<br>❖ Induction hypothesis | | |
| Resources:<br><br>    ✓ NGSSS Practice (Box) page 725<br>    ✓ Practice Textbook pp. 729-730<br>    ✓ Check for understanding p.729<br>    ✓ Study Guide and Intervention workbook pages 151-152<br>    ✓ Differentiated Instruction page 731 (Teacher Edition Activity)<br>    ✓ Practice and Problem Solving (Word problems application in textbook)<br>    ✓ H.O.T. Problems for Common Core page 730 (33-40)<br><br>Activity 1:<br><br>**Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | | |

# Course Pacing Guide

| Course Code: 1200330 | | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|---|
| **Unit Title: Chapter 11: Sequences and Series** | | Unit Essential Question:<br>How do you find the sum of an infinite geometric series?<br>How do you write the recursive formulas for sequences?<br>How do you use mathematical induction to prove statements?<br>How do you find binomial experiments? | |
| Semester:<br>Fourth Courses | Grading Period: 2<br>Pacing: 24 days | | |
| **Chapter 11 Sequences and Series<br>Study Guide and Tests** | | | |
| NGSSS Standards(s)<br><br>MA.912.D.11.1 Define arithmetic and geometric sequences and series.<br><br>MA.912.D.11.2 Use sigma notation to describe series<br><br><br>MA.912.D.11.3 Find specified terms of arithmetic and geometric sequences.<br><br>MA.912.D.11.4 Find Partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use sigma notation where applicable. *Also addresses MA.912.D.11.1 and MA.912.D.11.2*<br><br>MA.912.A.4.12 Apply the Binomial Theorem | | Common Core Standard(s):<br><br>**Domain : Building Functions**<br><br>Build a function that models a relationship between two quantities.<br><br>F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula use them to model situations, and translate between the two forms. | |
| Chapter 11 Vocabulary page 732 | | ✓ **Chapter 11 Study Guide and Review pages 733-736**<br>✓ **Chapter 11 Practice Test page 737**<br>✓ **Preparing for Standardized Tests 738-739**<br>✓ **NGSSS Practice Test 740-741** | |

# Course Pacing Guide

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 12: Probability and Statistics | Unit Essential Question: How do you use results from a survey sample to draw conclusions about a population? | |
| Semester: Fourth Courses Statistics and Probability courses | Grading Period: 2 Pacing: 24 days | How do you compare sample statistics and population statistics? How do you use the empirical rule to find probabilities? How do you create a graph of a binomial probability distribution? How do you draw conclusions about populations based on sample statistics |
| Concept: Section 12-1: Experiments, Surveys, and Observational Studies Extend 12-1: Graphing Technology Lab: Evaluating Published Data Pacing 3 days | Concept: Section 12-2: Statistical Analysis Pacing 3 days | Concept: Section 12-3: Conditional Probability Pacing 3 days |
| NGSSS Standards(s) MA.912.S.2.1- Compare the difference between surveys, experiments, and observational studies. MA.912.S.2.3 Identify sources of bias, including sampling and non-sampling errors | NGSSS Standards(s) MA.912.S.3.3 Calculate and interpret measures of the center of a set of data, including mean, median and weighted mean, and use these measures to make comparisons among sets of data. MA.912.S.3.4 Calculate and interpret measures of variance and standard deviation. Use these measures to make comparisons among sets of data. | NGSSS Standards(s) MA.912.S.2.3 Identify sources of bias, including sampling and non-sampling errors (including: understanding how conditioning affects the probability events. Finding conditional probabilities from a two-way frequency table.) |

## Course Pacing Guide

| | | |
|---|---|---|
| Common Core Standards:<br>Statistics and Probability course<br>**Domain: Interpreting Categorical and Quantitative Data**<br>S.ID 1,2,3,4: Summarize, represent and interpret data on a single count or measurement variable<br>S.ID 5,6: Summarize, represent, and interpret data on two categorical and quantitative variables<br><br><br>**Domain: Making Inferences and Justifying Conclusions**<br>S.IC 1,2: Understand and evaluate random processes underlying statistical experiments.<br>SIC.3 Make inferences and justify conclusions from sample surveys, experiments and observation studies | Common Core Standard(s):<br><br>**Domain: Making Inferences and Justifying Conclusions**<br>S.IC 1,2: Understand and evaluate random processes underlying statistical experiments.<br>SIC.3 Make inferences and justify conclusions from sample surveys, experiments and observation studies | **Common Core Standard(s)**<br><br>**Domain:** Conditional Probability and the Rules of Probability<br>S.CP.1,2,3,4,5,: Understand independence and conditional probability and use them to interpret data<br>S.CP.6,7,8,9: Use the rules of probability to compute probabilities of compound events in a uniform probability model<br><br><br>**Domain: Using Probability to make decisions**<br>S.MD 1,2,3,4: Calculate expected values and use them to solve problems<br>S.MD.5,6,7: Use probability to evaluate outcomes of decisions |
| Lesson Essential Question:<br>How do you evaluate surveys, studies, and experiments?<br>How do you distinguish between correlation and causation? | Lesson Essential Question:<br>How do you use measures of central tendency and variation to compare sets of data?<br>How do you explore measures of variation? | Lesson Essential Question:<br>How do you find probabilities of events given the occurrence of other events.<br>How do you use contingency tables to find conditional probabilities? |
| Vocabulary:<br>❖ Survey<br>❖ Population<br>❖ Census<br>❖ Biased<br>❖ Unbiased<br>❖ Observational study<br>❖ Experiment<br>❖ Treatment group<br>❖ Control group<br>❖ Correlation<br>❖ Causation | Vocabulary:<br>❖ Variable<br>❖ Univariate data<br>❖ Measure of central tendency<br>❖ Parameter<br>❖ Statistic<br>❖ Margin of sampling error<br>❖ Measure of variation<br>❖ Variance<br>❖ Standard deviation | Vocabulary:<br>❖ Conditional probability<br>❖ Contingency table<br>❖ Relative frequency |

**Course Pacing Guide**

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ Get Ready for Chapter 12 page 743<br>✓ Practice Textbook pp. 748-749<br>✓ Check for understanding p.748<br>✓ Study Guide and Intervention workbook pages 153-154<br>✓ Differentiated Instruction page 750 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 749 (28-32) | Textbook<br>✓ NGSSS Practice (Box) page 750<br>✓ Practice Textbook pp. 755-757<br>✓ Check for understanding p.755<br>✓ Study Guide and Intervention workbook pages 155-156<br>✓ Differentiated Instruction page 758 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 757 (28-33) | Textbook<br>✓ NGSSS Practice (Box) page 758<br>✓ Practice Textbook pp. 761-763<br>✓ Check for understanding p.761<br>✓ Study Guide and Intervention workbook pages 157-158<br>✓ Differentiated Instruction page 763-Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 762 (23-27) |

Graphic calculator real life activity Lab on Evaluating Published Data page 751 in Textbook.

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Activity 1:

**S**earch Smarttech.com websites for smartboard activities to find more activities on construction of graphs
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Other Projects can be used from the Common Core websites:
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Activity 1:

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Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

# Course Pacing Guide

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter 12: Probability and Statistics | Unit Essential Question: <br> How do you use results from a survey sample to draw conclusions about a population? | |
| Semester: <br> Fourth Courses <br> Statistics and Probability <br> courses | Grading Period:  2 <br> Pacing:  24   days | How do you compare sample statistics and population statistics? <br> How do you use the empirical rule to find probabilities? <br> How do you create a graph of a binomial probability distribution? <br> How do you draw conclusions about populations based on sample statistics? |
| Concept: <br> Section  12-4: Probability and Probability Distributions <br> Pacing 3 days | Concept: <br> Section 12-5: The Normal Distribution <br> Pacing  3 days | Concept: <br> Section 12-6: Hypothesis Testing <br> Pacing 3 days |
| NGSSS Standards(s) <br><br> MA.912.P.1.2- Use formulas for permutations and combinations to count outcomes and determine probabilities of events. <br><br><br> MA.912.P.3.1 Determine probabilities of events from distributions, including: discrete: Uniform, binomial, normal and exponential | NGSSS Standards(s) <br><br> MA.912.P.3.1; MA.912.P.3.2 <br> Determine probabilities of events from distributions, and determine the mean and variance of distributions; (including discrete, uniform, binomial, normal and exponential <br><br> MA.912.P.3.3 <br> Apply properties of the normal distribution | NGSSS Standards(s) <br><br> MA.912.S.5.2 Apply the general principals of hypotheses testing <br><br><br><br><br> MA.912.S.5.3: Explain and identify the following: null hypothesis, alternative hypotheses. Type 1 error, and Type II error |

# Course Pacing Guide

| Common Core Standards: | Common Core Standard(s): | Common Core Standard(s) |
|---|---|---|
| **Domain:** Conditional Probability and the Rules of Probability<br>S.CP.1,2,3,4,5,: Understand independence and conditional probability and use them to interpret data<br>S.CP.6,7,8,9: Use the rules of probability to compute probabilities of compound events in a uniform probability model<br><br>**Domain: Using Probability to make decisions**<br>S.MD 1,2,3,4: Calculate expected values and use them to solve problems<br>S.MD.5,6,7: Use probability to evaluate outcomes of decisions | **Domain: Making Inferences and Justifying Conclusions**<br>S.IC 1,2: Understand and evaluate random processes underlying statistical experiments.<br><br>SIC.3 Make inferences and justify conclusions from sample surveys, experiments and observation studies | **Domain: Making Inferences and Justifying Conclusions**<br>S.IC 1,2: Understand and evaluate random processes underlying statistical experiments.<br><br>SIC.3 Make inferences and justify conclusions from sample surveys, experiments and observation studies<br><br>**Domain: Using Probability to make decisions**<br>S.MD 1,2,3,4: Calculate expected values and use them to solve problems<br>S.MD.5,6,7: Use probability to evaluate outcomes of decisions |
| Lesson Essential Question:<br>How do you find probabilities by using combinations and permutations?<br>How do you create and use graphs of probability distributions? | Lesson Essential Question:<br>How do you determine whether a set of data appears to be normally distributed or skewed?<br>How do you use the empirical rule to find probabilities? | Lesson Essential Question:<br>How do you compare sample statistics and population parameters?<br>How do you design experiments to test hypotheses? |
| Vocabulary:<br>❖ Probability<br>❖ Success<br>❖ Failure<br>❖ Sample space<br>❖ Random variable<br>❖ Probability distribution<br>❖ Uniform distribution<br>❖ Relative-frequency graph<br>❖ Discrete probability distribution<br>❖ Theoretical probability<br>❖ Expected value | Vocabulary:<br>❖ Continuous probability<br>❖ Distribution<br>❖ Normal distribution<br>❖ Skewed distribution | Vocabulary:<br>❖ Inferential statistics<br>❖ Statistical inference<br>❖ Confidence interval<br>❖ Hypothesis<br>❖ Null hypothesis<br>❖ Alternative hypothesis |

Resources:

- ✓ NGSSS Practice (Box) page 763
- ✓ Practice Textbook pp. 767-768
- ✓ Check for understanding p. 767
- ✓ Study Guide and Intervention workbook pages 159-160
- ✓ Differentiated Instruction page 771 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 770 (26-28)

Activity 1:



Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
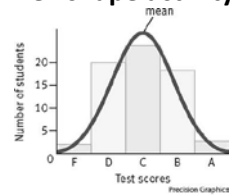Common Core Standards and Activity site:
WWW.CPALMS.ORG

Resources:

Textbook
- ✓ NGSSS Practice (Box) page 771
- ✓ Practice Textbook pp. 776-777
- ✓ Check for understanding p.776
- ✓ Study Guide and Intervention workbook pages 161-162
- ✓ Differentiated Instruction page 778 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 777 (16-22)

**Bell shape activity page 779**



Activity 2:



Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Resources:

Textbook
- ✓ NGSSS Practice (Box) page 778
- ✓ Practice Textbook pp. 782-783
- ✓ Check for understanding p.782
- ✓ Study Guide and Intervention workbook pages 163-164
- ✓ Differentiated Instruction page 784-Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 783 (29-33)



Algebra LAB Simulations page 785

Activity 2:



Search Smarttech.com websites for smartboard activities to find more activities on construction of graphs
**(Also see resource page for other resources)**



Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

| Course Code: 1200330 | | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title:  Chapter 12: Probability and Statistics | | Unit Essential Question: How do you use results from a survey sample to draw conclusions about a population? | |
| Semester: Fourth Courses Statistics and Probability courses | Grading Period:  2 Pacing:  24   days | How do you compare sample statistics and population statistics? How do you use the empirical rule to find probabilities? How do you create a graph of a binomial probability distribution? How do you draw conclusions about populations based on sample statistics? How do you solve for probabilities for particular event in finite space? | |
| Concept: Section  12-4: Binomial Distributions Pacing 3 days | | | |
| NGSSS Standards(s) MA.912.P.3.1; MA.912.P.3.2 Determine probabilities of events from distributions, and determine the mean and variance of distributions; (including discrete, uniform, binomial, normal and exponential | | | |
| Common Core Standards: Statistics and Probability course **Domain:**  Conditional Probability and the Rules of Probability S.CP.1,2,3,4,5,: Understand independence and conditional probability and use them to interpret data S.CP.6,7,8,9: Use the rules of probability to compute probabilities of compound events in a uniform probability model  **Domain: Using Probability to make decisions** S.MD 1,2,3,4: Calculate expected values and use them to solve problems S.MD.5,6,7: Use probability to evaluate outcomes of decisions | | | |

| | | |
|---|---|---|
| Lesson Essential Question:<br>How do you find probabilities for binomial experiments?<br>How do you find probabilities by using binomial distributions of expansions? | | |
| Vocabulary:<br>❖ Probability<br>❖ Success<br>❖ Failure<br>❖ Binomial distribution<br>❖ Binomial experiment<br>❖ Experimental probability | | |

Resources:

- ✓ NGSSS Practice (Box) page 784
- ✓ Practice Textbook pp. 790-792
- ✓ Check for understanding p. 790
- ✓ Study Guide and Intervention workbook pages 165-166
- ✓ Differentiated Instruction page 771 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 792 (42-47)

Activity 1:

Search **www.Smarttech.com** websites
**for smartboard activities to find more activities on**
**construction of graphs**
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core
websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

## Course Pacing Guide

| Course Code: 1200330 | | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|---|
| Unit Title:  Chapter 12: Probability and Statistics | | Unit Essential Question: <br> How do you use results from a survey sample to draw conclusions about a population? | |
| Semester: <br> Fourth Courses <br> Statistics and Probability <br> courses | Grading Period:  2 <br> Pacing:  24   days | How do you compare sample statistics and population statistics? <br> How do you use the empirical rule to find probabilities? <br> How do you create a graph of a binomial probability distribution? <br> How do you draw conclusions about populations based on sample statistics? | |
| Concept: <br> Section  Chapter 12 Probability and Statistics Study Guide and Tests <br> Pacing 3 days | | | |
| NGSSS Standards(s) <br><br> MA.912.P.1.2- Use formulas for permutations and combinations to count outcomes and determine probabilities of events. <br><br> MA.912.P.3.1 Determine probabilities of events from distributions, including: discrete: Uniform, binomial, normal and exponential | | Common Core Standards: <br> Statistics and Probability course <br> **Domain:**  Conditional Probability and the Rules of Probability <br> S.CP.1,2,3,4,5,: Understand independence and conditional probability and use them to interpret data <br> S.CP.6,7,8,9: Use the rules of probability to compute probabilities of compound events in a uniform probability model <br><br> **Domain: Using Probability to make decisions** <br> S.MD 1,2,3,4: Calculate expected values and use them to solve problems <br> S.MD.5,6,7: Use probability to evaluate outcomes of | Common Core Standard(s): <br><br> **Domain: Making Inferences and Justifying Conclusions** <br> S.IC 1,2: Understand and evaluate random processes underlying statistical experiments. <br><br> SIC.3 Make inferences and justify conclusions from sample surveys, experiments and observation studies <br> **Domain: Making Inferences and Justifying Conclusions** <br> S.IC 1,2: Understand and evaluate random processes underlying statistical experiments. <br><br> SIC.3 Make inferences and justify conclusions from sample surveys, experiments and observation studies <br><br> **Domain: Using Probability to make decisions** <br> S.MD 1,2,3,4: Calculate expected values and use them to solve problems <br> S.MD.5,6,7: Use probability to evaluate outcomes of decisions |

| Chapter 12 Vocabulary Check page 794 | ✓ **Chapter 12 Study Guide and Review pages 795-798**<br>✓ **Chapter 12 Practice Test page 799**<br>✓ **Preparing for Standardized Tests 800-801**<br>✓ **NGSSS Practice Test 802-803** | |
|---|---|---|

| Course Code: 1200330 | Course Name: Algebra 2 - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter 13: Trigonometric Functions | Unit Essential Question:<br>How do you use rules to investigate graphs of the sine and cosine functions | |
| Semester:<br>Fourth Courses<br>Trigonometric Functions | Grading Period: 2<br>Pacing: 24 days | How do you use rules to investigate and draw graphs of tangent, cotangent, secant, cosecant and functions? |

| Concept:<br>Section 13-1: Trigonometric Functions in Right Triangles<br>Pacing 3 days | Concept:<br>Section 13.2: Angles and Angle Measures<br>Pacing 3 days | Concept:<br>Section 13-3: Trigonometric Functions of General Angles<br>Pacing 3 days |
|---|---|---|
| NGSSS Standards(s)<br><br>MA.912.T.2.1 Define and use the trigonometric ratio (sine, cosine, tangent, cotangent, secant, cosecant) in terms of angles of right triangles)<br><br>MA.912.T.2.2 Solve real-world problems involving right triangles using technology when appropriate | NGSSS Standards(s)<br><br>MA.912.T.1.1 Convert between degree and radian measures | NGSSS Standards(s)<br><br>MA.912.T.2.1 Define and use the trigonometric ratio (sine, cosine, tangent, cotangent, secant, cosecant) in terms of angles of right triangles)<br><br>MA.912.T.2.2 Solve real-world problems involving right triangles using technology when appropriate |

| Common Core Standards: | Common Core Standard(s): | Common Core Standard(s) |
|---|---|---|
| **Domain: Trigonometric Functions F.TF**<br><br>F.TF. 1,2,3,4:  Extend the domain of trigonometric functions using the unit circle<br><br>F.TF. 5,6,7 Model periodic phenomena with trigonometric functions<br><br>F.TF. 8,9  Prove and apply trigonometric identities | **Domain: Trigonometric Functions F.TF**<br><br>F.TF. 1,2,3,4:  Extend the domain of trigonometric functions using the unit circle<br><br>F.TF. 5,6,7 Model periodic phenomena with trigonometric functions<br><br>F.TF. 8,9  Prove and apply trigonometric identities | **Domain: Trigonometric Functions F.TF**<br><br>F.TF. 1,2,3,4:  Extend the domain of trigonometric functions using the unit circle<br><br>F.TF. 5,6,7 Model periodic phenomena with trigonometric functions<br><br>F.TF. 8,9  Prove and apply trigonometric identities |
| Lesson Essential Question:<br>How do you find values of trigonometric functions to find the side lengths and angle measures of right triangles? | Lesson Essential Question:<br>How do you draw and find angles in standard position?<br>How do you convert between degree measures and radian measures? | Lesson Essential Question:<br>How do you find values of trigonometric functions for general angles?<br>How do you find values of trigonometric functions by using reference angles? |
| Vocabulary:<br>❖ trigonometry<br>❖ trigonometric ratio<br>❖ trigonometric function<br>❖ sine<br>❖ cosine<br>❖ tangent<br>❖ cosecant<br>❖ secant<br>❖ cotangent<br>❖ reciprocal functions<br>❖ angle of depression<br>❖ angle of elevation | Vocabulary:<br>❖ standard position<br>❖ initial side<br>❖ terminal side<br>❖ co-terminal side<br>❖ radian<br>❖ central angle<br>❖ arc length | Vocabulary:<br>❖ quadrantal angle<br>❖ reference angle |

| Resources: | Resources: | Resources: |
|---|---|---|

Resources:

- ✓ Get Ready for Chapter 13 page 805
- ✓ Practice Textbook pp. 813-815
- ✓ Check for understanding p. 813
- ✓ Study Guide and Intervention workbook pages 167-168
- ✓ Differentiated Instruction page 816 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 815 (54-57)

**Graphic calculator Activity**
**Use graphic calculator to convert degree to radian measure (exact value) and radian measure to degree and to design the unit circle with exact values**
Activity 2:

Search **www.Smarttech.com** websites
**for smartboard activities to find more activities on construction of graphs**
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Resources:

Textbook
- ✓ NGSSS Practice (Box) page 816
- ✓ Practice Textbook pp. 820-822
- ✓ Check for understanding p.820
- ✓ Study Guide and Intervention workbook pages 169-170
- ✓ Differentiated Instruction page 823 (Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 822 (48-53)

**Activity 1: Geometry Lab: Area of Triangles page 824**
- ✓

Activity 2:

Search **www.Smarttech.com** websites
**for smartboard activities to find more activities on construction of graphs**
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

Resources:

Textbook
- ✓ NGSSS Practice (Box) page 823
- ✓ Practice Textbook pp. 829-830
- ✓ Check for understanding p.829
- ✓ Study Guide and Intervention workbook pages 171-172
- ✓ Differentiated Instruction page 828-Teacher Edition Activity)
- ✓ Practice and Problem Solving (Word problems application in textbook)
- ✓ H.O.T. Problems for Common Core page 830 (47-51)

Activity 1:

Search **www.Smarttech.com** websites
**for smartboard activities to find more activities on construction of graphs**
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

**Course Pacing Guide**

# Course Pacing Guide

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| Unit Title:  Chapter 13: Trigonometric Functions | Unit Essential Question: How do you use rules to investigate graphs of the sine and cosine functions? |

| Semester: Fourth Courses Trigonometric Functions | Grading Period:  2 Pacing:  24   days | (i.e. graph functions and interpret them in terms of their amplitude, frequency, period and phase shift) How do you use rules to investigate and draw graphs of tangent, cotangent, secant, cosecant and functions? How do you use law of sines and cosines to solve triangles? |
|---|---|---|

| Concept: Section  13-4: Law of Sines Pacing 3 days | Concept: Section 13-5: Law of Cosines Pacing  3 days | Concept: Section 13-6: Circular Functions Pacing 3 days |
|---|---|---|
| NGSSS Standards(s) MA.912.T.2.3 Apply the laws of sines and cosines to solve real-world problems using technology MA.912.T.2.4 Use the area of triangles given two sides and angle or three sides to solve real-world problems. | NGSSS Standards(s) MA.912.T.1.8 : Solve real-world problems involving applications of trigonometric functions and graphing technology when appropriate MA.912.T.2.3 Apply the laws of sines and cosines to solve real-world problems using technology | NGSSS Standards(s) MA.912.T.1.5 Make connections between right triangle ratios, trigonometric functions, and circular functions MA.912.T.1.8 : Solve real-world problems involving applications of trigonometric functions and graphing technology when appropriate |
| Common Core Standards: **Domain: Trigonometric Functions F.TF** F.TF. 1,2,3,4:  Extend the domain of trigonometric functions using the unit circle F.TF. 5,6,7 Model periodic phenomena with trigonometric functions F.TF. 8,9  Prove and apply trigonometric identities | Common Core Standard(s): **Domain: Trigonometric Functions F.TF** F.TF. 1,2,3,4:  Extend the domain of trigonometric functions using the unit circle F.TF. 5,6,7 Model periodic phenomena with trigonometric functions F.TF. 8,9  Prove and apply trigonometric identities | Common Core Standard(s) **Domain: Trigonometric Functions F.TF** F.TF. 1,2,3,4:  Extend the domain of trigonometric functions using the unit circle F.TF. 5,6,7 Model periodic phenomena with trigonometric functions F.TF. 8,9  Prove and apply trigonometric identities |

**Course Pacing Guide**

| Lesson Essential Question: | Lesson Essential Question: | Lesson Essential Question: |
|---|---|---|
| How do you find the area of a triangle using two sides and an included angle? How do you use law of sines to solve triangles? | How do you use the law of cosines to solve triangles? How do you choose methods to solve triangles? | How do you find values of trigonometric functions based on the unit circle? How do you use the properties of periodic functions to evaluate trigonometric functions? |
| Vocabulary: <br> ❖ Law of sines <br> ❖ Solving a triangle | Vocabulary: <br> ❖ Law of Cosines | Vocabulary: <br> ❖ quadrantal angle <br> ❖ reference angle |

| | | |
|---|---|---|
| Resources:<br><br>  ✓ NGSSS Practice (Box) page 831<br>  ✓ Practice Textbook pp. 836-838<br>  ✓ Check for understanding p.836<br>  ✓ Study Guide and Intervention workbook pages 173-174<br>  ✓ Differentiated Instruction page 839 (Teacher Edition Activity)<br>  ✓ Practice and Problem Solving (Word problems application in textbook)<br>  ✓ H.O.T. Problems for Common Core page 838 (43-48)<br><br>Activity 1:<br><br>Search **www.Smarttech.com** websites<br>**for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Resources:<br><br>Textbook<br>  ✓ NGSSS Practice (Box) page 839<br>  ✓ Practice Textbook pp. 843-845<br>  ✓ Mid-chapter Test page 847<br>  ✓ Check for understanding p.843<br>  ✓ Study Guide and Intervention workbook pages 175-176<br>  ✓ Differentiated Instruction page 843(Teacher Edition Activity)<br>  ✓ Practice and Problem Solving (Word problems application in textbook)<br>  ✓ H.O.T. Problems for Common Core page 845 (34-37)<br><br>Activity 1:<br><br>Search **www.Smarttech.com** websites<br>**for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Resources:<br><br>Textbook<br>  ✓ NGSSS Practice (Box) page 846<br>  ✓ Practice Textbook pp. 851-853<br>  ✓ Check for understanding p.851<br>  ✓ Study Guide and Intervention workbook pages 177-178<br>  ✓ Differentiated Instruction page 850-Teacher Edition Activity)<br>  ✓ Practice and Problem Solving (Word problems application in textbook)<br>  ✓ H.O.T. Problems for Common Core page 853 (37-41)<br><br>Activity 1:<br><br>Search **www.Smarttech.com** websites<br>**for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

**Course Pacing Guide**

| Course Code: 1200330 | | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|---|
| Unit Title:  Chapter  13 Trigonometric Functions | | Unit Essential Question:<br>How do you use rules to investigate graphs of the sine and cosine functions?<br>(i.e. graph functions and interpret them in terms of their amplitude, frequency, period and phase shift)<br>How do you use rules to investigate and draw graphs of tangent, cotangent, secant, cosecant and functions?<br>How do you use law of sines and cosines to solve triangles? |
| Semester:<br>Fourth Courses<br>Trigonometric Functions | Grading Period:  2<br>Pacing:  24   days | |
| Concept:<br>Section  13-7: Graphing Trigonometric Functions<br>Pacing 3 days | Concept:<br>Section 13-8: Translations of Trigonometric Graphs<br>Pacing  3 days | Concept:<br>Section 13-9: Inverse Trigonometric Functions<br>Pacing 3 days |
| NGSSS Standards(s)<br><br>MA.912.T.1.5 Make connections between right triangle ratios, trigonometric functions, and circular functions<br><br><br>MA.912.T.1.6 Define and graph trigonometric functions using domain, range intercepts, period, amplitude, phase shift, vertical shift, and asymptotes with and without the use of graphing technology | NGSSS Standards(s)<br><br>MA.912.T.1.6 Define and graph trigonometric functions using domain, range intercepts, period, amplitude, phase shift, vertical shift, and asymptotes with and without the use of graphing technology<br><br>MA.912.T.1.8 : Solve real-world problems involving applications of trigonometric functions and graphing technology when appropriate | NGSSS Standards(s)<br><br>MA.912.T.1.7  Define and graph inverse trigonometric relations and functions.<br><br><br><br>MA.912.T.1.8 : Solve real-world problems involving applications of trigonometric functions and graphing technology when appropriate |

| Common Core Standards: | Common Core Standard(s): | Common Core Standard(s) |
|---|---|---|
| **Domain: Trigonometric Functions F.TF**<br><br>F.TF. 1,2,3,4: Extend the domain of trigonometric functions using the unit circle<br><br>F.TF. 5,6,7 Model periodic phenomena with trigonometric functions<br><br>F.TF. 8,9 Prove and apply trigonometric identities<br><br>**Domain: Similarity, Right Triangles and Trigonometry G-SRT**<br><br>G.SRT.6,7,8: Define trigonometric ratios and solve problems involving right triangles<br><br>G.SRT.9.10.11 Apply trigonometry to general triangles | **Domain: Trigonometric Functions F.TF**<br><br>F.TF. 1,2,3,4: Extend the domain of trigonometric functions using the unit circle<br><br>F.TF. 5,6,7 Model periodic phenomena with trigonometric functions<br><br>F.TF. 8,9 Prove and apply trigonometric identities<br><br>**Domain: Similarity, Right Triangles and Trigonometry G-SRT**<br><br>G.SRT.6,7,8: Define trigonometric ratios and solve problems involving right triangles<br><br>G.SRT.9.10.11 Apply trigonometry to general triangles | **Domain: Trigonometric Functions F.TF**<br><br>F.TF. 1,2,3,4: Extend the domain of trigonometric functions using the unit circle<br><br>F.TF. 5,6,7 Model periodic phenomena with trigonometric functions<br><br>F.TF. 8,9 Prove and apply trigonometric identities<br><br>**Domain: Similarity, Right Triangles and Trigonometry G-SRT**<br><br>G.SRT.6,7,8: Define trigonometric ratios and solve problems involving right triangles<br><br>G.SRT.9.10.11 Apply trigonometry to general triangles apply trigonometric identities |
| Lesson Essential Question:<br><br>How to describe and graph the sine, cosine, and tangent functions?<br>How do you describe and graph other trigonometric functions? | Lesson Essential Question:<br>How do you graph horizontal translations of trigonometric graphs and find phase shifts.?<br><br>How do you graph vertical translations of trigonometric graphs? | Lesson Essential Question:<br>How do you find the values of inverse trigonometric functions.?<br>How do you solve equations by using inverse trigonometric functions? |
| Vocabulary:<br>❖ Amplitude<br>❖ frequency | Vocabulary:<br>❖ Phase shift<br>❖ Vertical shift<br>❖ Midline | Vocabulary:<br>❖ Principal values<br>❖ Arcsine function<br>❖ Arc cosine function<br>❖ Arctangent function |

| Resources: | Resources: | Resources: |
|---|---|---|
| ✓ NGSSS Practice (Box) page 861<br>✓ Practice Textbook pp. 859-861<br>✓ Check for understanding p.859<br>✓ Study Guide and Intervention workbook pages<br>✓ Differentiated Instruction page 839 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 860 (41-44) | Textbook<br>✓ NGSSS Practice (Box) page 861<br>✓ Practice Textbook pp. 867-869<br>✓ Check for understanding p.867<br>✓ Study Guide and Intervention workbook pages 181-182<br>✓ Differentiated Instruction page 864 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 869 (60-64) | Textbook<br>✓ NGSSS Practice (Box) page 870<br>✓ Practice Textbook pp. 874-876<br>✓ Check for understanding p.874<br>✓ Study Guide and Intervention workbook pages 183-184<br>✓ Differentiated Instruction page 873-Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 875 (41-46) |

**Graphic calculator Activity**
**Use graphic calculator graph trigonometric functions**

Activity 1:

**Search www.Smarttech.com websites for smartboard activities to find more activities on construction of graphs**
**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

**Graphic calculator Activity**
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Activity 1:

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**(Also see resource page for other resources)**

Other Projects can be used from the Common Core websites:
Common Core Standards and Activity site:
WWW.CPALMS.ORG

**Course Pacing Guide**

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill |
|---|---|
| Unit Title:  Chapter  13 Trigonometric Functions | Unit Essential Question: |
| | How do you use rules to investigate graphs of the sine and cosine functions |
| Semester: <br> Fourth Courses <br> Trigonometric Functions | Grading Period:  2 <br> Pacing: 24   days | (i.e. graph functions and interpret them in terms of their amplitude, frequency, period and phase shift) <br> How do you use rules to investigate and draw graphs of tangent, cotangent, secant, cosecant and functions? <br> How do you use law of sines and cosines to solve triangles? |
| Chapter 13 Study Guide and Tests | | |
| NGSSS Standards(s) <br><br> MA.912.T.1.5 Make connections between right triangle ratios, trigonometric functions, and circular functions <br><br> MA.912.T.1.6 Define and graph trigonometric functions using domain, range intercepts, period, amplitude, phase shift, vertical shift, and asymptotes with and without the use of graphing technology <br><br> MA.912.T.1.7  Define and graph inverse trigonometric relations and functions. <br><br> MA.912.T.1.8 : Solve real-world problems involving applications of trigonometric functions and graphing technology when appropriate <br><br> MA.912.T.2.3 Apply the laws of sines and cosines to solve real-world problems using technology <br><br> MA.912.T.2.4 Use the area of triangles given two sides and angle or three sides to solve real-world problems. | Common Core Standard(s): <br><br> **Domain: Trigonometric Functions F.TF** <br><br> F.TF. 1,2,3,4:  Extend the domain of trigonometric functions using the unit circle <br><br> F.TF. 5,6,7 Model periodic phenomena with trigonometric functions <br><br> F.TF. 8,9  Prove and apply trigonometric identities <br><br> **Domain: Similarity, Right Triangles and Trigonometry G-SRT** <br><br> G.SRT.6,7,8: Define trigonometric ratios and solve problems involving right triangles <br><br> G.SRT.9.10.11 Apply trigonometry to general triangles | |

| Chapter 13 Vocabulary page 877 | ✓ **Chapter 13 Study Guide and Review pages 878-882**<br>✓ **Chapter 13 Practice Test page 883**<br>✓ **Preparing for Standardized Tests 884-885**<br>✓ **NGSSS Practice Test 886-887** | |
|---|---|---|

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title: Chapter  14  Trigonometric Identities and Equations | Unit Essential Question:<br>How do you use trigonometry to solve real-world problems? | |
| Semester:<br>Fourth Courses<br>Trigonometric Functions | Grading Period:  2<br>Pacing:  24   days | |

| Concept:<br>Section  14.1: Trigonometric identities<br>Pacing 3 days | Concept:<br>Section 14-2: Verifying Trigonometric Identities<br>Pacing  3 days | Concept:<br>Section 14-3: Sum and Difference of Angles identities<br>Pacing 3 days |
|---|---|---|
| NGSSS Standards(s)<br><br>MA.912.T.3.1 Verify the basic Pythagorean identities e.g. $\sin^2 x + \cos^2 x = 1$ , and show they are equivalent to the Pythagorean Theorem. | NGSSS Standards(s)<br><br>MA.912.T.3.2-Use basic trigonometric identities to verify other identities and simplify expressions | NGSSS Standards(s)<br><br>MA.912.T.3.2-Use basic trigonometric identities to verify other identities and simplify expressions<br><br>MA.912.T.3.3- Use the sum and difference, half-angle and double-angle formulas for sine, cosine, and tangent when formulas are provided |
| Common Core Standards:<br><br>**Domain: Trigonometric Functions F.TF**<br><br>F.TF. 8,9  Prove and apply trigonometric identities | Common Core Standard(s):<br><br>**Domain: Trigonometric Functions F.TF**<br><br>F.TF. 8,9  Prove and apply trigonometric identities | **Common Core Standard(s)**<br><br>**Domain: Trigonometric Functions F.TF**<br><br>F.TF. 8,9  Prove and apply trigonometric identities |

## Course Pacing Guide

| Lesson Essential Question:<br>How do you use trigometric identities to find trigonometric values? How do you use trigonometric identities to simplify expressions? | Lesson Essential Question:<br>How do you verify trigonometric identities by transforming one side of an equation into the form of the other side?<br>How do you verify trigonometric identities by transforming each side of the equation to the same form? | Lesson Essential Question:<br>How do you find values of sine and cosine by using sum and difference identities?<br>How do you verify trigonometric identities by using sum and difference identities? |
|---|---|---|
| Vocabulary:<br>❖ Trigonometric identities | Vocabulary:<br>❖ Verify identities by transforming one side (Key concept box) | Vocabulary:<br>❖ Sum identities (key concept box)<br>❖ Difference identities (key concept box) |

| | | |
|---|---|---|
| Resources: | Resources: | Resources: |
| ✓ Getting Ready for Chapter 14 page 889<br>✓ Practice Textbook pp. 894-896<br>✓ Check for understanding p.894<br>✓ Study Guide and Intervention workbook pages 185-186<br>✓ Differentiated Instruction page 897 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 896 (42-50) | Textbook<br>✓ NGSSS Practice (Box) page 897<br>✓ Practice Textbook pp. 900-902<br>✓ Check for understanding p.900<br>✓ Study Guide and Intervention workbook pages 187-188<br>✓ Differentiated Instruction page 903 (Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 902 (52-59) | Textbook<br>✓ NGSSS Practice (Box) page 903<br>✓ Practice Textbook pp. 906-908<br>✓ Check for understanding p.906<br>✓ Study Guide and Intervention workbook pages 189-190<br>✓ Differentiated Instruction page 909-Teacher Edition Activity)<br>✓ Practice and Problem Solving (Word problems application in textbook)<br>✓ H.O.T. Problems for Common Core page 908-(38-42) |
| **Graphic calculator Activity**<br>**Use graphic calculator graph trigonometric functions**<br><br>Activity 1:<br>**S**earch **www.Smarttech.com websites for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | **Graphic calculator Activity**<br>**Use graphic calculator graph trigonometric functions**<br><br>Activity 1:<br>**S**earch **www.Smarttech.com websites**<br>**for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br>**S**earch **www.Smarttech.com websites**<br>**for smartboard activities to find more activities on construction of graphs**<br>**(Also see resource page for other resources)**<br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG |

| Course Code: 1200330 | Course Name:  Algebra 2  - Glencoe McGraw-Hill | |
|---|---|---|
| Unit Title:  Chapter  14  Trigonometric Identities and Equations | Unit Essential Question:<br>How do you use trigonometry to solve real-world problems? | |
| Semester:<br>Fourth Courses<br>Trigonometric Functions | Grading Period:  2<br>Pacing:  24   days | |
| Concept:<br>Section  14.4 Double-Angle and Half-Angle Identities<br>Pacing 3 days | Concept:<br>Section 14-5: Solving Trigonometric Equations<br>Pacing  3 days | |
| NGSSS Standards(s)<br><br>MA.912.T.3.2-Use basic trigonometric identities to verify other identities and simplify expressions<br><br>MA.912.T.3.3- Use the sum and difference, half-angle and double-angle formulas for sine, cosine, and tangent when formulas are provided | NGSSS Standards(s)<br><br>MA.912.T.3.4- Solve trigonometric equations and real-world problems involving applications of trigonometric equations using technology when appropriate. | |
| Common Core Standards:<br><br>**Domain: Trigonometric Functions F.TF**<br><br>F.TF. 8,9  Prove and apply trigonometric identities | Common Core Standard(s):<br><br>**Domain: Trigonometric Functions F.TF**<br><br>F.TF. 8,9  Prove and apply trigonometric identities | |
| Lesson Essential Question:<br>How do you find values of sine and cosine by using double-angle identities?<br>How do you find values of sine and cosine using half-angle identities? | Lesson Essential Question:<br>How do you solve trigonometric equations?<br>How to you find extraneous solutions from trigonometric functions? | |
| Vocabulary:<br>    ❖  Double-angle identities (key concept box)<br>    ❖  Half-angle identities (key concept box) | Vocabulary:<br>    ❖  Trigonometric equations | ❖ |

| | | |
|---|---|---|
| Resources:<br><br>    ✓  NGSSS Practice (Box) page 909<br>    ✓  Practice Textbook pp. 915-916<br>    ✓  Check for understanding p.915<br>    ✓  Study Guide and Intervention workbook pages 191-192<br>    ✓  Mid-chapter Test page 910<br>    ✓  Differentiated Instruction page 917  (Teacher Edition Activity)<br>    ✓  Practice and Problem Solving (Word problems application in textbook)<br>    ✓  H.O.T. Problems for Common Core page 916 (37-42) | Resources:<br><br>Textbook<br>    ✓  NGSSS Practice (Box) page 917<br>    ✓  Practice Textbook pp.  922-924<br>    ✓  Check for understanding p.900<br>    ✓  Study Guide and Intervention workbook pages 193-194<br>    ✓  Differentiated Instruction page   925 (Teacher Edition Activity)<br>    ✓  Practice and Problem Solving (Word problems application in textbook)<br>    ✓  H.O.T. Problems for Common Core page 924 (58-63) | |
| Activity 1:<br><br>**Search www.Smarttech.com websites for smartboard activities to find more activities on construction of graphs (Also see resource page for other resources)**<br><br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | Activity 1:<br><br>**Search www.Smarttech.com websites for smartboard activities to find more activities on construction of graphs (Also see resource page for other resources)**<br><br><br><br>Other Projects can be used from the Common Core websites:<br>Common Core Standards and Activity site:<br>WWW.CPALMS.ORG | |