

Algebra

2019-20 SBL Course Syllabus

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Course Schedule 2 Term block-scheduled course
Required Materials: TI-30XS Calculator (TI-30XIIS still useable, not as advanced)
text: Pearson Education, Inc's Prentice Hall Algebra 1, 2011
Algebra Resources (including syllabus, worksheets, answer keys) can be found on Schoology

Algebra students will be assessed on the Learning Standards listed within this document.

The course's Overall Score is based on the average (mean) value of the individual Learning Standard(s) scores evaluated during each term. Term Overall Scores will be finalized upon the conclusion of each term.

In order to pass (receive credit) the term, students must...

- have an Overall Score of at least (minimum) 2.08
- have no INCOMPLETES (INC) recorded for any of the Learning Standards

As this is a pilot year, Learning Standard(s) and Overall Scores will be initially computed and displayed using PowerSchool. If this method is later deemed inadequate, a link to a Google Spreadsheet with student scores will be provided within PowerSchool.

In most cases...

- Multiple Learning Standard(s) may be assessed at one time.
- The Learning Standard(s) will be assessed using free-response, matching and/or multiple-choice problems.
- Assessments will be very similar, but not necessarily the same, for each student
- The problems can range in value from 0.5 to 4.0 points for a total assessment value of 4.0 points
- For selected questions, students may be given partial value.
- Students have the option to use their own handwritten notes on a sheet provided by the instructor.
- Students may be recognized for **mastering** (perfect 4 out of 4 assessment points) the specific Learning Standard(s) on their **first attempt** (piloted by this class for 2019-20)

Scoring the Learning Standard(s)	based on accumulated value of 4 assessment points
3 Met Learning Standard (s)	at least 3
2.5 adequately Met Learning Standard(s)	at least 2½ (being piloted by CHS Math Dept for 2019-20)
2 Approaching Learning Standard(s)	at least 2
1 Attempted Learning Standard(s)	at least ½

Students are given the opportunity to observe, practice, and evaluate (work and answers can be found both online within Schoology or in an answer key in the back of the room) similar problems in and/or outside of class time prior to the Learning Standard(s) assessment. Given the numerous and various types of assessment problems plus the option to use handwritten notes, **failure to score any points on the Learning Standard(s) assessment will be recognized by the instructor as an INCOMPLETE attempt done by the student (written as a "0" for bookkeeping purposes).**

A student that does not take a Learning Standard(s) assessment will receive an **INCOMPLETE (INC)**.

Students will be informed when an alternate process and/or scoring rubric will be used to assess certain Learning Standard(s).

Reassessments

- Students will be given the opportunity to reassess any Learning Standard(s) in which a 3 was not achieved. Each Learning Standard(s) are treated individually even if multiple Learning Standard(s) were assessed at one time.
- Reassessment on the Learning Standard(s) will be allowed after the instructor has determined the individual ready.
- Student readiness will be validated upon successful completion of a number* of problems* (from prior practice sets and/or newly generated). Some problems may* reflect multiple Learning Standard(s) at the same time.
* Instructor's discretion
- Time to demonstrate readiness is subject to **instructor availability** usually before school, during Homeroom, and after school. The instructor will most likely not be available upon the conclusion of the school year.
- Reassessment will occur on a day separate from when the initial assessment was returned.
- If notes were allowed on the prior assessment, students will be allowed to create / use handwritten notes on a **NEW** sheet provided by the instructor.
- For the 2019-20 school year, the highest (maximum) score achieved in the Learning Standard(s) will be used in the calculation of the overall grade.

An **accelerated second reassessment** may be requested by a student if...

- the student at least **Approached** (2 or higher) the Learning Standard(s) on their **first attempt AND**
- have been regularly recognized for **mastery** (see above) of prior Learning Standard(s)
OR
shown their math skills have been enhanced by earning points in either the Chilton Optimists Math Challenge and/or WI Math League programs

Class Expectations

- Students are engaged in inappropriate conduct when they are not participating in classroom activities and/or disrupting the classroom environment.
- Tardiness is also considered inappropriate conduct. Make-up time for tardies will increase in length as the number of tardies (unexcused) increase. Failure to complete this time within a reasonable manner may result in further disciplinary action.
- Opportunities to participate in class activities may be lost due to excessive inappropriate conduct.
- Students absent/departing for music lessons may do so as long as it does not interfere with any previously scheduled assessments. Students may see if alternate arrangements are available prior to the assessment.
- Students absent/departing due to special school-related activities (possible field trips, athletic events, etc.) are expected to complete any missing assessments as soon as possible.

Classroom strategies

- Concept Checks
- Questions on previous lessons
- Lesson with Guided Practice
- Independent Practice
- Closure

Intervention Strategies

- Having one-on-one discussions with students
- Additional/outside one-on-one/group practice
- Contacting parents by phone, mail, e-mail

The above is a guideline. It can be altered due to circumstances.

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LEARNING STANDARD ASSESSMENTS AND TENTATIVE SCHEDULE

1st or 3rd Term Learning Standards to be met in Algebra

1: Multi-Step Equations, Inequalities, Absolute Values

- A: Solve one-step and two-step problems
- B: Solve multi-step problems
Identify equations that have no solution or all reals for their solution set
- C: Identify solutions of inequalities using graphs, set-builder & interval notation
- D: Solve and graph solution sets for compound inequalities containing and / or
- E: Solve equations and inequalities involving absolute value

2: Slopes and Linear Equations

- A: Determine whether if a relation is also a function
Identify the domain and range and use function notation
- B: Compute the rate of change or slope given tables or slope
Identify, write and graph a direct variation
- C: Write, interpret and graph linear equations using slope-intercept and/or point-slope form
Write equations that represent linear relationships in slope-intercept form
- D: Write, interpret and graph linear equations in standard form and horizontal & vertical lines
- E: Write, interpret and graph parallel & perpendicular lines
- F: Model data with a trend line equation and use it to make predictions

3: System of Equations, Graphs of Inequalities

- A: Solve a system of linear equations using four different methods:
graphing, substitution, elimination, and Cramer's Rule
- B: Analyze various types of systems
Graph and analyze a system of linear inequalities
- C: Choose the best method for solving a system of linear equations
Model real-world situations with a basic system of linear equations
- D: Model complex real-world situations with multiple systems of linear equations

4: Exponent Rules & Functions

- A: Write, convert and compare numbers in scientific notation
Apply exponent identities and simplify basic expressions involving exponents
- B: Multiply or divide numbers in scientific notation
Apply exponent rules and simplify complex expressions involving exponents
- C: Identify if the equation or situation represents a linear function or an exponential function,
specifically exponential growth & decay
Evaluate and graph exponential functions
- D: Develop and analyze exponential models in terms of percent rate of growth
Apply exponential models to real-life examples
Solve exponential equations using table of values or intelligent guess and check

REVIEW: Retention of Learning Standard(s) from 1A to 4D

5: Polynomials

- A: Classify, add, and subtract polynomials
- B: Multiply a polynomial by a monomial or binomial
Find the square of a binomial and the product of conjugates

2nd or 4th Term Learning Standards to be met in Algebra

5: Polynomials

- C: Factor basic binomials and trinomials
- D: Factor advanced polynomials
- E: Divide a polynomial using long division and/or synthetic division (when appropriate)

6: Square Roots

- A: Without calculator, define and evaluate a square root and its radical expression.
Without calculator, identify which number systems expressions belong to
Without calculator, identify right triangle and solve problems using Pythagorean's Theorem
- B: Without calculator, simplify products, quotients, sums and differences of radical expressions
- C: With calculator, define and evaluate a square root and its radical expression.
With calculator, identify which number systems expressions belong to
With calculator, identify right triangle and solve problems using Pythagorean's Theorem
- D: With calculator, simplify products, quotients, sums and differences of radical expressions
- E: Without calculator, solve equations containing radicals and identify extraneous solutions
- F: With calculator, solve equations containing radicals and identify extraneous solutions

7: Quadratics

- A: Given a quadratic function, graph and identify its properties.
- B: Given a quadratic equation and/or its graph, identify its properties and its roots.
- C: Find different parabolic graphs that share the same property
- D: Solve quadratic equations by factoring)2_
- E: Solve quadratic equations by completing the square first if necessary and square roots
Determine the number and nature of the roots and solve quadratic equations using the Quadratic Formula
- F: Apply quadratic equations and properties to answer real-life applications.
Determine if an equation or data is modeling linear, quadratic, or exponential tendencies

8: Rational Functions

- A: Simplify rational expressions
- B: Multiply and/or divide rational expressions and simplify
- C: Add and subtract rational expressions
- D: Solve rational equations and proportions

9: Univariate Statistics

- A: Classify data and analyze samples and surveys
Work with misleading graphs and statistics
Introduce Sigma-Notation
- B: Find measures of center (mean, median, mode) plus minimum, maximum and range
Make and interpret frequency tables and histograms
- C: Make and interpret box-and-whisker plots and stem-and-leaf plots
Find quartiles and percentiles
- D: Compute standard deviation, variance and z-scores for set of values
Use a normal distribution given its corresponding statistics
- E: Compute univariate statistics using a TI-83/84 graphing calculator
Recognize measures of centers, measures of spread and other statistical terms