



Portland Public Schools  
Middle Level  
Syllabus Template

School Year 2011-2012

Teacher: Barbara Kutasz		School: Mt. Tabor Middle School	
Subject: Mathematics	Course Title: Algebra 1-2	Grade Level: 7, 8	
<p>Course description: In this first year course in algebra the representation of functions is used as a unifying theme. Students are introduced to linear and quadratic functions through graphical, numerical and symbolic representations. Students learn to solve linear equations, inequalities, systems of equations, and quadratic equations. They deepen their understanding of basic algebraic concepts using hands-on activities, TI-84 calculator lessons, and problem solving, and develop confidence in their ability to think mathematically as they work both individually and collaboratively.</p> <p>Homework is required in this course.</p>			
<p>Course outline:</p> <p>1<sup>st</sup> quarter – Problem Solving Variables and Proportions Graphs &amp; Equations</p> <p>2<sup>nd</sup> quarter – Multiple Representations Multiplication &amp; Proportions</p> <p>3<sup>rd</sup> quarter – Systems of Equations Linear Relationships Quadratics</p>			

4<sup>th</sup> quarter -  
Inequalities  
Simplifying & Solving  
Functions & Relationships

Academic Vocabulary:  
Justify, generalize, apply, extend, reverse thinking, make connections

District adopted materials:  
College Preparatory Mathematics: Algebra Connections

Supplemental resources:

Differentiation/ accessibility strategies and support (TAG, ELL, SpEd):  
The differentiation strategies used in this course are based on the evidence (data) received through multiple forms of pre, ongoing, and formative assessments. Described here are the types of assessments used and specific differentiation strategies in place to meet the needs of ALL learners (including TAG, ESL, Special Ed...)

Flexible grouping  
Providing instruction in a variety of learning modes (visual, auditory, etc.)  
Multiple assessment tools  
Content vocabulary instruction  
Graphic organizers  
Repetition  
Collaborative learning activities  
Summarizing and note taking  
Nonlinguistic representations  
Advanced work and activities

Final proficiencies:  
H.1A.1. Compare, order, and locate real numbers on a number line.  
H.1A.2. Evaluate, compute with, and determine equivalent numeric and algebraic expressions with real numbers and variables that may also include absolute value, integer exponents, square roots, pi, and/or scientific notation.  
H.1A.3. Express square roots in equivalent radical form and their decimal

approximations when appropriate.

H.1A.4. Develop, identify, and/or justify equivalent algebraic expressions, equations, and inequalities using the properties of exponents, equality and inequality, as well as the commutative, associative, inverse, identity, and distributive properties.

H.1A.5. Factor quadratic expressions limited to factoring common monomial terms, perfect-square trinomials, differences of squares, and quadratics of the form  $x^2 + bx + c$  that factor over the integers.

H.2A.1. Identify, construct, extend, and analyze linear patterns and functional relationships that are expressed contextually, numerically, algebraically, graphically, in tables, or using geometric figures.

H.2A.2. Given a rule, a context, two points, a table of values, a graph, or a linear equation in either slope intercept or standard form, identify the slope of the line, determine the x and/or y intercept(s), and interpret the meaning of each.

H.2A.3. Determine the 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, determine an equation of a new line, parallel or perpendicular to a given line, through a given point.

H.2A.4. Fluently convert among representations of linear relationships given in the form of a graph of a line, a table of values, or an equation of a line in slope-intercept and standard form.

H.2A.5. Given a linear function, interpret and analyze the relationship between the independent and dependent variables. Solve for x given  $f(x)$  or solve for  $f(x)$  given x.

H.2A.6. Analyze how changing the parameters transforms the graph of  $f(x) = mx + b$ .

H.2A.7. Write, use, and solve linear equations and inequalities using graphical and symbolic methods with one or two variables. Represent solutions on a coordinate graph or number line.

H.2A.8. Solve systems of two linear equations graphically and algebraically, and solve systems of two linear inequalities graphically.

H.3A.1. Given a quadratic or exponential function, identify or determine a corresponding table or graph.

H.3A.2. Given a table or graph that represents a quadratic or exponential function, extend the pattern to make predictions.

H.3A.4. Given a quadratic or exponential function, interpret and analyze the relationship between the independent and dependent variables, and evaluate the function for specific values of the domain.

H.3A.5. Given a quadratic equation of the form  $x^2 + bx + c = 0$  with integral roots, determine and interpret the roots, the vertex of the parabola that is the graph of  $y = x^2 + bx + c$ , and an equation of its axis of symmetry graphically and algebraically.

Behavioral expectations:

**ATTENDANCE:** Students are expected to make every effort to attend class. They are responsible for work missed during excused absences and will have time to make up missed work according to district policy. Work from unexcused absences will be made up only at the teacher's discretion. It is the student's responsibility to find out what work they have missed. A weekly report of missing work will be sent home to parents, via students.

**TARDINESS:** Students are expected to arrive to class on time and prepared for class. Tardy students will be so marked in the esis online attendance system and consequences may apply. Parents will be contacted regarding chronically late or unprepared students.

**RULES:** Students are expected to follow all school rules and to treat each other, the teacher and classroom supplies with respect.

**CONSEQUENCES:** The majority of discipline in Cedar Lodge is done through a relationship-based approach. Students, families and teachers work together to solve problems and decide on appropriate consequences for infractions. The various levels of discipline are outlined below. They are generally listed in the order in which they would take place, although serious offenses may result in early stages being skipped.

1. An informal meeting between student and teacher to discuss behavior, identify areas for improvement and outline next steps. Teachers will use Level 1 Referral form.
2. A formal meeting between teacher and student, which generally takes place before or after school and will result in an agreement to modify behavior and consequences (loss of break, detention, apology, community service, etc.) for the infraction. Parents are informed by phone call or email at this point.
3. A meeting between student, teacher and parents with same outcome as number 2.
4. A meeting with all Cedar Lodge teachers to establish a behavior plan. The plan may be written or agreed to verbally.
5. Referral to building-level discipline (Level 2 Referral) and a conference with student, teacher and parent. This is generally done for physical assault, repeated harassment, or other problems not solved by steps 1 –4. Referral to building-level discipline is always done in the case of drug or alcohol-related infractions, fighting

and truancy.

*CONTACT INFORMATION:* If you need to contact me my email address is bkutasz@pps.net. You can contact me by phone at 503-916-5646 during school hours.