

**Course: Pre-Algebra**

**GRADE: 8**

Revised 9/14/07

## **PLANNED COURSE CURRICULUM GUIDE**

### **I. COURSE DESCRIPTION AND INTENT:**

All students will be investigating algebraic expressions and integers, solving one-step equations and inequalities, decimals and equations, factors, fractions, and exponents, operations with fractions, ratios, proportions and percents. Additionally, the high level will solve multi-step equations and inequalities and compute area and volume. They will also do linear functions and graphing. All classes will also be spending time preparing for the PSSA test which coincides with the PA math standards.



### **II. INSTRUCTIONAL TIME:**

**Class Periods: 180**

**Length of Class Periods (minutes): 70**

**Length of Course: Full year**

**Unit of Credit:**

# PLANNED COURSE ADAPTATIONS/MODIFICATIONS

## Introduction

The instructional adaptations that follow are provided as suggestions to be implemented with all students, particularly with those in need of special education services including the gifted. This listing is in no way intended to be exhaustive. Rather, it is reflective of some major considerations in the area of curriculum adaptations/modifications.

These instructional adaptations will work with any student, but are especially beneficial to those in need of learning support. Some may argue that these modifications are simply *good teaching*. Indeed, modifications of this type do represent good teaching. These principles of good teaching become instructional modifications whenever: (1) certain students in a particular class require such modifications *above and beyond* what is typically required by *most* students in that class and (2) without these modifications, these same students would not succeed.

Assessment is an integral part of instruction reflecting student progress as well as achievement. Therefore, also included are suggestions for assessment modifications.

- Peer Support
- Cooperative learning among peers
- Modeling
- Development of Information Organizer
- Development of Graphic Organizer
- Development of structured study guides
- Student selection of instructional material (i.e., reading, writing, math)
- Taped lessons
- Copy notes (peer or teacher)
- Student conferencing
- Combine and vary modes of lesson presentation
- Adjust language level to match the developmental and intellectual levels of students
- Let student practice given examples first. Then assign tasks to be completed.
- Provide opportunity for guided and independent practice in a variety of situations
- Limit number and length of directions
- Have students repeat/review directions (i.e., peer to peer, student to teacher)
- Give feedback that is as immediate, specific, and objective as possible
- Clarify error responses so that students do not make the same errors over and over again
- Reinforce progress towards desired outcomes
- Breakdown complex tasks into smaller, more manageable units
- Use verbal prompts to elicit desired results
- Use manual guidance (i.e., hand over hand) to facilitate correct responses
- Computer assisted instruction
- Assessment based upon teacher observation of student performance (i.e., daily work, portfolio, artifacts, projects)
- Extended test time
- Test read to student by teacher or peer
- Oral testing (i.e., student retelling of information)
- Open book/note test
- Alternate testing (any demonstration of a student's understanding of concepts)
- Retesting
- Reduce the number of responses required on tests
- Use of curriculum based assessment
- Vary test format
- Objectively define mastery as related to each task. Tasks should be learned to mastery
- Reduce or remove distracting stimuli
- Use of concrete objects and manipulatives in all stages of instruction and assessment
- Emphasize important information
- Allow extra time to complete assignments/projects
- Limit the number of assigned tasks in the initial stages of learning. As the student's competency increases, expect the student to complete the same number of tasks as the rest of the class
- Use supplemental materials
- Alternate assignments accepted (i.e., modification to homework assignments)
- Flexible grouping/individual assistance
- Seating to accommodate needs
- Teacher proximity
- Use behavioral management techniques (i.e., contracts, time-out, token system, charts)

## PREFACE

Users and information seekers should familiarize themselves with the purpose and terminology of this **Planned Course Curriculum Guide (PCCG)**. We suggest that you first read the following:

- **PCCG PURPOSE AND INTENT**
- **PCCG DEFINITIONS**

The PCCG specifies the unit lesson outcome, essential content, standards, activities, resources, and evaluation of student performance. This sector provides the means to initiate the learning activities to attain the program goal as identified in the course description and intent.

The standards and outcomes are minimal expectations; further embellishment of the course is discretionary with the instructor depending upon the capability of the students.

This PCCG is designed as an ACTIVE document capable of technological modification as required.

The instructional delivery of this curriculum is quality controlled through the lesson plan development of the teacher.

## **PLANNED COURSE CURRICULUM GUIDE (PCCG) PURPOSE AND INTENT**

### **The Planned Course Curriculum Guide (PCCG) is a multi-purpose document:**

- All staff, particularly new teachers, can understand instructional expectations through the WRITTEN curriculum
- A continuing district-wide instructional process and scope and sequence of subject matter are enhanced. The WRITTEN curriculum is delivered through the TAUGHT curriculum [instructional content and learning activities] and is evaluated through the TESTED curriculum [expected levels of student achievement - learning outcomes]
- Priority student-centered outcomes are identified and attained through suggested learning activities and content designed to help insure a balanced and comprehensive basic curriculum
- Essential content and course standards provide an efficient basis for selecting appropriate instructional materials and resources
- Staff development areas for curriculum improvement are provided
- The PCCG conforms with current Pennsylvania Department of Education curriculum regulations and serves the dual feature of providing both an administrative document and an instructional guide
- Content and subject format remain flexible and adaptable to modification - an “active” document
- Special Pennsylvania Department of Education [PDE] legislation is identified
- Parents and students are provided with an overview of the instructional program and each course in particular

## PLANNED COURSE CURRICULUM GUIDE (PCCG) DEFINITIONS

- **Course Description and Intent:** a brief overview of the course and program goals
- **Instructional Time:** frequency of class meetings and time/appropriate credit at the secondary level
- **Special Notes:** emphatic features or highlights and identification of Department of Education mandates found in the course
- **Unit Lesson Outcome:** describes the knowledge, skills, attitudes, student performance behaviors and areas of study that have been identified as appropriate to help the student attain the rigorous standards of a quality education
- **Teaching-Learning Activities:** suggested activities designed to help all students achieve the learning outcomes and standards
- **Outcomes/Standards:** statements establishing the minimal knowledge, skills, performance behaviors, and essential learning (content) a student must attain
- **Expected Levels of Achievement (Learning Outcomes):** what students will be expected to do as a result of the application of teaching-learning activities and content
- **Evaluation Criteria (Actual Level of Attainment):** student performance level achieved and measured through specified evaluation criteria

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

**Subject Title:** Pre-Algebra

**Discipline/Grade Level:** 8

**UNIT LESSON OUTCOME:** 1

**Students will be able to solve expressions with integers and variables.**

<b>RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)</b>																						
<b>Communications</b>	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input type="checkbox"/>	1.5	<input checked="" type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
<b>Mathematics</b>	2.1	<input checked="" type="checkbox"/>	2.2	<input checked="" type="checkbox"/>	2.3	<input type="checkbox"/>	2.4	<input checked="" type="checkbox"/>	2.5	<input checked="" type="checkbox"/>	2.6	<input checked="" type="checkbox"/>	2.7	<input checked="" type="checkbox"/>	2.8	<input checked="" type="checkbox"/>	2.9	<input checked="" type="checkbox"/>	2.10	<input type="checkbox"/>	2.11	<input type="checkbox"/>
<b>Science &amp; Technology</b>	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
<b>Environment &amp; Ecology</b>	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
<b>Civics &amp; Government</b>	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
<b>Economics</b>	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
<b>Geography</b>	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
<b>History</b>	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
<b>Arts &amp; Humanities</b>	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
<b>Health, Safety &amp; PE</b>	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
<b>Family &amp; Consumer Science</b>	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
<b>Career Education &amp; Work</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																		

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b>  <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 1</b></p> <p>How are whole numbers added, subtracted, multiplied and divided?</p> <p>How are whole numbers compared?</p> <p>How are numbers identified by graphing integers, finding opposites and absolute values?</p> <p>How are variables and variable expressions used?</p> <p>How are operations performed with integers?</p> <p>How are points graphed in the coordinate plane?</p> <p>How are problems solved by looking for a pattern?</p> <p>What is the order of operations?</p>	<p>Identify and write numerical and variable expressions</p> <p>Use the order of operations and grouping symbols</p> <p>Evaluate and solve variable expressions</p> <p>Compare integers and find absolute value</p> <p>Use models and rules to add and subtract integers</p> <p>Write rules for patterns</p> <p>Make predictions and test conjectures</p> <p>Find patterns</p> <p>Multiply and divide integers</p> <p>Name coordinates and quadrants</p> <p>Graph points</p>	<p>Diagrams</p> <p>Observations</p> <p>Oral questioning</p> <p>Short answers</p> <p>Quizzes</p> <p>Tests</p>	<p>Prentice Hall text and workbook Title: <u>Pre-Algebra</u> Author: Davison, Landau, McCrackin, Thompson Copyright: 2001 ISBN: 0-13-437331-6</p> <p>Math manipulatives</p> <p>Supplemental handouts</p> <p>CD-ROM</p> <p>Math notes</p>

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

Subject Title: Pre-Algebra

Discipline/Grade Level: 8

UNIT LESSON OUTCOME: 2

Students will be able to solve a variety of one-step equations by using appropriate strategies, properties and operations.

RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)																						
Communications	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input type="checkbox"/>	1.5	<input type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
Mathematics	2.1	<input checked="" type="checkbox"/>	2.2	<input checked="" type="checkbox"/>	2.3	<input checked="" type="checkbox"/>	2.4	<input checked="" type="checkbox"/>	2.5	<input checked="" type="checkbox"/>	2.6	<input checked="" type="checkbox"/>	2.7	<input type="checkbox"/>	2.8	<input checked="" type="checkbox"/>	2.9	<input type="checkbox"/>	2.10	<input type="checkbox"/>	2.11	<input type="checkbox"/>
Science & Technology	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
Environment & Ecology	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
Civics & Government	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
Economics	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
Geography	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
History	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
Arts & Humanities	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
Health, Safety & PE	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
Family & Consumer Science	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
Career Education & Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																		

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b>  <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 2</b></p> <p>How are variable expressions simplified?</p> <p>What properties are used in simplifying expressions?</p> <p>What are the types of expressions?</p> <p>How are one-step equations solved?</p> <p>What are the steps of the Try, Test and Revise strategy?</p> <p>How are inequalities graphed?</p> <p>What is an inverse operation?</p> <p>How is an inverse operation useful?</p>	<p>Identify and use properties</p> <p>Identify and simplify the parts of variable expressions</p> <p>Classify types of equations</p> <p>Solve one-step inequalities and equations using subtraction, addition, multiplication and division</p> <p>Use the Try, Test and Revise strategy</p> <p>Graph and write inequalities</p> <p>Solve inequalities and variable expressions using inverse operations</p>	<p>Observations</p> <p>Short answers</p> <p>Oral questioning</p> <p>Visuals</p> <p>Quizzes</p> <p>Tests</p>	<p>Prentice Hall Pre-Algebra text and workbook</p> <p>Math manipulatives</p> <p>Notes</p> <p>Supplemental handouts</p> <p>CD-ROM</p>

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

Subject Title: Pre-Algebra

Discipline/Grade Level: 8

UNIT LESSON OUTCOME: 3

Students will be able to generalize unit conversion, simplification and estimation to use with fractions, decimals and exponents.

RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)																						
Communications	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input type="checkbox"/>	1.5	<input type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
Mathematics	2.1	<input checked="" type="checkbox"/>	2.2	<input checked="" type="checkbox"/>	2.3	<input checked="" type="checkbox"/>	2.4	<input checked="" type="checkbox"/>	2.5	<input checked="" type="checkbox"/>	2.6	<input checked="" type="checkbox"/>	2.7	<input type="checkbox"/>	2.8	<input checked="" type="checkbox"/>	2.9	<input type="checkbox"/>	2.10	<input type="checkbox"/>	2.11	<input type="checkbox"/>
Science & Technology	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
Environment & Ecology	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
Civics & Government	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
Economics	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
Geography	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
History	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
Arts & Humanities	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
Health, Safety & PE	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
Family & Consumer Science	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
Career Education & Work	13.1	<input type="checkbox"/>	13.2	<input type="checkbox"/>	13.3	<input type="checkbox"/>	13.4	<input type="checkbox"/>														

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b>  <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 3</b></p> <p>How are formulas used to find perimeter?</p> <p>What are the steps for converting metric units?</p> <p>How are the measures of central tendency found?</p> <p>How are prime factorization, scientific notation and divisibility rules applied?</p> <p>How are rounding and estimation used to analyze the reasonableness of an answer?</p> <p>What is the purpose of simplifying?</p> <p>What are real-life applications of conversion and simplifying skills?</p>	<p>Apply rounding and estimation skills to decimals</p> <p>Solve mean, median and mode problems</p> <p>Use a formula to solve perimeter problems</p> <p>Perform equations with decimals</p> <p>Identify and convert units using the metric system</p> <p>Find factors, greatest common factor, power of a power, fractions in lowest terms and least common multiple</p> <p>Compute prime factorization, scientific notation and divisibility rules</p> <p>Generalize the use of simplifying strategies to fractions, decimals and exponents</p>	<p>Diagrams</p> <p>Observations</p> <p>Oral questioning</p> <p>Short answers</p> <p>Quizzes</p> <p>Tests</p>	<p>Prentice Hall Pre-Algebra text and workbook</p> <p>Math manipulatives</p> <p>Notes</p> <p>CD-ROM</p> <p>Supplemental handouts</p>

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

Subject Title: Pre-Algebra

Discipline/Grade Level: 8

UNIT LESSON OUTCOME: 4

Students will be able to apply and explain the relationship between fractions and decimals.

RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)																						
Communications	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input type="checkbox"/>	1.5	<input checked="" type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
Mathematics	2.1	<input checked="" type="checkbox"/>	2.2	<input checked="" type="checkbox"/>	2.3	<input checked="" type="checkbox"/>	2.4	<input type="checkbox"/>	2.5	<input checked="" type="checkbox"/>	2.6	<input checked="" type="checkbox"/>	2.7	<input type="checkbox"/>	2.8	<input checked="" type="checkbox"/>	2.9	<input type="checkbox"/>	2.10	<input type="checkbox"/>	2.11	<input type="checkbox"/>
Science & Technology	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
Environment & Ecology	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
Civics & Government	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
Economics	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
Geography	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
History	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
Arts & Humanities	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
Health, Safety & PE	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
Family & Consumer Science	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
Career Education & Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																		

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b>  <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 4</b></p> <p>How are fractions converted to decimals?</p> <p>How are decimals converted to fractions?</p> <p>What are equivalent fractions?</p> <p>When are exponents computed during the order of operations?</p> <p>How are fractions and mixed numbers added, subtracted, multiplied and divided?</p> <p>How are fractions which contain variables evaluated?</p> <p>What are the customary units of measurement?</p> <p>How is customary measurement accurately completed?</p> <p>What are the customary units of measure?</p> <p>How is accurate measurement completed?</p>	<p>Compare fractions</p> <p>Convert fractions to decimals and decimals to fractions</p> <p>Simplify and divide expressions with exponents</p> <p>Find equivalent fractions</p> <p>Evaluate fractions containing variables</p> <p>Use the order of operations with exponents</p> <p>Add and subtract fractions and mixed numbers</p> <p>Multiply and divide fractions</p>	<p>Diagrams</p> <p>Observations</p> <p>Oral questioning</p> <p>Short answers</p> <p>Visuals</p> <p>Quizzes</p> <p>Tests</p>	<p>Prentice Hall Pre-Algebra text and workbook</p> <p>Math manipulatives</p> <p>Notes</p> <p>Supplemental handouts</p> <p>CD-ROM</p>

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

**Subject Title:** Pre-Algebra

**Discipline/Grade Level:** 8

**UNIT LESSON OUTCOME:** 5

Students will be able to apply the use of ratios and proportions to identify probability, odds and rates of change.

<b>RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)</b>																						
Communications	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input type="checkbox"/>	1.5	<input checked="" type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
Mathematics	2.1	<input checked="" type="checkbox"/>	2.2	<input checked="" type="checkbox"/>	2.3	<input checked="" type="checkbox"/>	2.4	<input checked="" type="checkbox"/>	2.5	<input checked="" type="checkbox"/>	2.6	<input checked="" type="checkbox"/>	2.7	<input checked="" type="checkbox"/>	2.8	<input checked="" type="checkbox"/>	2.9	<input checked="" type="checkbox"/>	2.10	<input checked="" type="checkbox"/>	2.11	<input checked="" type="checkbox"/>
Science & Technology	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
Environment & Ecology	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
Civics & Government	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
Economics	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
Geography	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
History	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
Arts & Humanities	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
Health, Safety & PE	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
Family & Consumer Science	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
Career Education & Work		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>														

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b> <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 5</b></p> <p>What is the purpose of scale in drawings, maps and diagrams?</p> <p>How can similar figures be created using scale?</p> <p>What are the definitions of probability and ratio?</p> <p>How does the application of probability define odds?</p> <p>How do ratios compare to unit rates?</p> <p>How are tables used to identify, explain and continue proportional patterns?</p>	<p>Apply customary units of measure to tasks</p> <p>Find and use ratios and unit rates</p> <p>Solve proportions</p> <p>Create tables to solve problems</p> <p>Rewrite information using percents</p> <p>Solve problems by working backwards</p> <p>Find powers of products and quotients</p> <p>Identify and create similar figures and scale drawings</p> <p>Find the percent of increase and decrease</p> <p>Explain probability and odds</p>	<p>Diagrams</p> <p>Essays</p> <p>Observation</p> <p>Oral questioning</p> <p>Short answers</p> <p>Quizzes</p> <p>Tests</p>	<p>Prentice Hall Pre-Algebra text and workbook</p> <p>Math manipulatives</p> <p>Notes</p> <p>Supplemental handouts</p> <p>CD-ROM</p>

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

Subject Title: Pre-Algebra

Discipline/Grade Level: 8

UNIT LESSON OUTCOME: 6

Students will be able to apply the use of equations to solve problems.

RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)																						
Communications	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input type="checkbox"/>	1.5	<input checked="" type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
Mathematics	2.1	<input checked="" type="checkbox"/>	2.2	<input checked="" type="checkbox"/>	2.3	<input checked="" type="checkbox"/>	2.4	<input type="checkbox"/>	2.5	<input checked="" type="checkbox"/>	2.6	<input type="checkbox"/>	2.7	<input type="checkbox"/>	2.8	<input checked="" type="checkbox"/>	2.9	<input type="checkbox"/>	2.10	<input type="checkbox"/>	2.11	<input checked="" type="checkbox"/>
Science & Technology	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
Environment & Ecology	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
Civics & Government	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
Economics	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
Geography	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
History	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
Arts & Humanities	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
Health, Safety & PE	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
Family & Consumer Science	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
Career Education & Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																		

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b> <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 6</b></p> <p>How is the distributive property used to solve equations?</p> <p>What are the steps in figuring simple and compound interest?</p> <p>What are examples of word or real-life problems that can be solved through the use of equations?</p> <p>Why are like terms combined when solving equations?</p>	<p>Solve two-step equations using properties</p> <p>Combine like terms in equations</p> <p>Use the distributive property</p> <p>Solve two-step equations containing fractions, decimals, inequalities and variables</p> <p>Use the formulas to solve problems</p> <p>Calculate simple and compound interest</p> <p>Convert English expressions into variable equations</p> <p>Apply use of equations to real-life problems</p> <p>Solve multi-step equations</p> <p>Apply the problem solving strategy: Write an Equation</p>	<p>Diagrams</p> <p>Observation</p> <p>Oral Questioning</p> <p>Short Answers</p>	<p>Prentice Hall Pre-Algebra text and workbook</p> <p>Math manipulatives</p> <p>CD-ROM</p> <p>Calculators</p> <p><a href="http://www.phschool.com">www.phschool.com</a></p> <p>Supplemental handouts</p>

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

**Subject Title:** Pre-Algebra

**Discipline/Grade Level:** 8

**UNIT LESSON OUTCOME:** 7

Students will be able to identify, graph and explain linear functions and inequalities.

<b>RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)</b>																						
Communications	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
Mathematics	2.1	<input type="checkbox"/>	2.2	<input type="checkbox"/>	2.3	<input checked="" type="checkbox"/>	2.4	<input type="checkbox"/>	2.5	<input checked="" type="checkbox"/>	2.6	<input checked="" type="checkbox"/>	2.7	<input checked="" type="checkbox"/>	2.8	<input checked="" type="checkbox"/>	2.9	<input type="checkbox"/>	2.10	<input type="checkbox"/>	2.11	<input checked="" type="checkbox"/>
Science & Technology	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
Environment & Ecology	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
Civics & Government	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
Economics	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
Geography	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
History	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
Arts & Humanities	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
Health, Safety & PE	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
Family & Consumer Science	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
Career Education & Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																		

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b>  <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 7</b></p> <p>How are relations and functions identified?</p> <p>What are the steps in graphing linear equations and inequalities?</p> <p>How are scatter plots used to identify trends?</p> <p>How are equations with two variables graphed on the coordinate plane?</p> <p>What are the rules for linear functions?</p> <p>What are the applications for use of functions and the graphing of functions?</p>	<p>Identify and graph relations and functions</p> <p>Graph equations with two variables</p> <p>Find the slope of a line</p> <p>Use slope to graph linear equations</p> <p>Write rules from words, tables and graphs</p> <p>Interpret, draw and use scatter plots to identify trends</p> <p>Solve linear equations and inequalities</p> <p>Graph points on the coordinate plane</p> <p>Determine whether a relation is a function</p> <p>Solve a problem by graphing</p> <p>Identify the slope and y-intercept</p> <p>Identify rules for linear functions</p>	<p>Diagrams</p> <p>Essay</p> <p>Observation</p> <p>Oral Questioning</p> <p>Short Answers</p> <p>Quizzes</p> <p>Tests</p>	<p>Prentice Hall Pre-Algebra text and workbook</p> <p>CD-ROM</p> <p>Supplemental handouts</p> <p>Math manipulatives</p> <p>Notes</p> <p><a href="http://www.phschool.com">www.phschool.com</a></p>

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

**Subject Title:** Pre-Algebra

**Discipline/Grade Level:** 8

**UNIT LESSON OUTCOME:** 8

Students will be able to identify, recreate and classify figures and shapes.

RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)																						
Communications	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input type="checkbox"/>	1.5	<input checked="" type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
Mathematics	2.1	<input checked="" type="checkbox"/>	2.2	<input type="checkbox"/>	2.3	<input checked="" type="checkbox"/>	2.4	<input checked="" type="checkbox"/>	2.5	<input checked="" type="checkbox"/>	2.6	<input type="checkbox"/>	2.7	<input type="checkbox"/>	2.8	<input type="checkbox"/>	2.9	<input checked="" type="checkbox"/>	2.10	<input checked="" type="checkbox"/>	2.11	<input type="checkbox"/>
Science & Technology	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
Environment & Ecology	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
Civics & Government	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
Economics	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
Geography	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
History	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
Arts & Humanities	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
Health, Safety & PE	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
Family & Consumer Science	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
Career Education & Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																		

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b>  <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 8</b></p> <p>What are the characteristics of polygons?</p> <p>What is the relationship between the radius and diameter of a circle?</p> <p>What is the difference between reflections, rotations and translations?</p> <p>How do nets represent shapes?</p> <p>How can figures and diagrams be applied to solve problems?</p> <p>How is area of a polygon found?</p> <p>How is circumference found?</p> <p>How do you identify a line of symmetry?</p> <p>How do you identify rotational symmetry?</p> <p>How do you graph reflections, rotations and translations?</p>	<p>Find area of polygons and irregular figures</p> <p>Name and identify shapes, figures and nets of shapes</p> <p>Classify polygons and geometric figures</p> <p>Identify and find the radius, diameter and circumference of a circle</p> <p>Use properties of a figure to solve problems</p> <p>Design and create figures</p> <p>Solve a problem by drawing a diagram</p> <p>Identify and apply knowledge of lines, angles, rotations, reflections, translations, symmetry and congruence to graphing</p> <p>Construct circle graphs</p> <p>Construct bisectors</p>	<p>Diagrams</p> <p>Observation</p> <p>Oral Questioning</p> <p>Short Answers</p> <p>Essay</p> <p>Quizzes</p> <p>Tests</p>	<p>Prentice Hall Pre-Algebra text and workbook</p> <p>Math manipulatives</p> <p>Notes</p> <p>Supplemental handouts</p> <p>CD-ROM</p> <p><a href="http://www.phschool.com">www.phschool.com</a> website</p>

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

Subject Title: Pre-Algebra

Discipline/Grade Level: 8

UNIT LESSON OUTCOME: 9

Students will be able to organize, format and analyze information in tables, graphs and spreadsheets.

RELATIONSHIP TO PA OUTCOMES/STANDARDS (Check Appropriate Graduation Outcomes)																						
Communications	1.1	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	1.3	<input type="checkbox"/>	1.4	<input type="checkbox"/>	1.5	<input type="checkbox"/>	1.6	<input checked="" type="checkbox"/>	1.7	<input type="checkbox"/>	1.8	<input type="checkbox"/>						
Mathematics	2.1	<input checked="" type="checkbox"/>	2.2	<input checked="" type="checkbox"/>	2.3	<input type="checkbox"/>	2.4	<input type="checkbox"/>	2.5	<input type="checkbox"/>	2.6	<input checked="" type="checkbox"/>	2.7	<input type="checkbox"/>	2.8	<input checked="" type="checkbox"/>	2.9	<input type="checkbox"/>	2.10	<input type="checkbox"/>	2.11	<input type="checkbox"/>
Science & Technology	3.1	<input type="checkbox"/>	3.2	<input type="checkbox"/>	3.3	<input type="checkbox"/>	3.4	<input type="checkbox"/>	3.5	<input type="checkbox"/>	3.6	<input type="checkbox"/>	3.7	<input type="checkbox"/>	3.8	<input type="checkbox"/>	3.9	<input type="checkbox"/>				
Environment & Ecology	4.1	<input type="checkbox"/>	4.2	<input type="checkbox"/>	4.3	<input type="checkbox"/>	4.4	<input type="checkbox"/>	4.5	<input type="checkbox"/>	4.6	<input type="checkbox"/>	4.7	<input type="checkbox"/>	4.8	<input type="checkbox"/>	4.9	<input type="checkbox"/>				
Civics & Government	5.1	<input type="checkbox"/>	5.2	<input type="checkbox"/>	5.3	<input type="checkbox"/>	5.4	<input type="checkbox"/>														
Economics	6.1	<input type="checkbox"/>	6.2	<input type="checkbox"/>	6.3	<input type="checkbox"/>	6.4	<input type="checkbox"/>	6.5	<input type="checkbox"/>												
Geography	7.1	<input type="checkbox"/>	7.2	<input type="checkbox"/>	7.3	<input type="checkbox"/>	7.4	<input type="checkbox"/>														
History	8.1	<input type="checkbox"/>	8.2	<input type="checkbox"/>	8.3	<input type="checkbox"/>	8.4	<input type="checkbox"/>														
Arts & Humanities	9.1	<input type="checkbox"/>	9.2	<input type="checkbox"/>	9.3	<input type="checkbox"/>	9.4	<input type="checkbox"/>														
Health, Safety & PE	10.1	<input type="checkbox"/>	10.2	<input type="checkbox"/>	10.3	<input type="checkbox"/>	10.4	<input type="checkbox"/>	10.5	<input type="checkbox"/>												
Family & Consumer Science	11.1	<input type="checkbox"/>	11.2	<input type="checkbox"/>	11.3	<input type="checkbox"/>	11.4	<input type="checkbox"/>														
Career Education & Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																		

## LEARNING OUTCOMES/STANDARDS AND CONTENT/ACTIVITIES

*Statements of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.*

<b>ESSENTIAL CONTENT OUTCOMES/STANDARD</b>	<b>CONTENT &amp; INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES</b> <i>(Individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful:</i>	<b>ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT</b>	<b>RESOURCES AND MATERIALS</b>
<p><b>STANDARD 9</b></p> <p>How do you gather, organize, and display data using pictures, tallies, charts, tables, and graphs?</p> <p>How do you express mathematical problems and solutions using charts, graphs, pictures, and tables?</p> <p>When given a chart, graph, picture, or table, how do you interpret the results to formulate and answer questions?</p>	<p>Define picture, tally, chart, graph, table.</p> <p>Create a picture, chart, tally, table, and graph from a set of data.</p> <p>Analyze and interpret a picture, chart, tally, table, and graph.</p> <p>Utilize various methods of creating pictures, tallies, charts, tables, and graphs, including computerized spreadsheets.</p>	<p>Test Quiz Spreadsheet assignment</p>	<p>Textbook Worksheets Calculator Spreadsheets Computer program</p>