I. PHILOSOPHY

The 7th Grade PSSA Math Prep course of the Pine Grove Area School District has been structured to review and build upon the five core mathematical concepts including numbers and operations, measurement, geometry, algebraic concepts, and data analysis and probability. Developmentally appropriate activities will include opportunities for collaborative learning using manipulatives. The course will allow for the accommodation of many learning styles, motivational levels, and academic abilities.

CORE CONCEPTS

1. Open Ended Questions – Understand and apply strategies for solving open-ended questions

2. Number Systems – Ability to complete fraction operations

3. Processes of Measurement – Use appropriate formulas to determine measurements

4. Algebraic Concepts – Use appropriate strategies to solve expressions or equations and demonstrate an understanding of patterns.

5. Data Analysis – Ability to organize, display, and analyze data

6. Probability – Calculate probabilities in lowest terms

7. Geometric Relationships – Identify and compare properties of two-dimensional shapes

III. COURSE OF STUDY

A. Course Name: PSSA Math Prep

B. Grade Level: 7

C. Length of Course: One semester

1. Frequency: 30 Days per school year

2. Duration: 44 minutes

D. Academic Level: 7th grade, Basic and Below Basic PSSA students

E. Credits: 0.333

F. Prerequisites: None

G. Course Description:

The PSSA Math Prep course will provide remediation to students in the five core areas of mathematics. The course will help prepare to students to successfully complete the PSSA Math Test. Emphasis will be placed on meeting every student's needs and learning style. Accommodations will be made for students who need additional assistance. Extra help will always be provided as necessary.

IV. CONTENT: Grade 7 Mathematics
CORE CONCEPT 1: Open-Ended Questions
MAJOR OBJECTIVE: Understand and apply strategies for solving open-ended questions

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.5.8.A Invent, select, use, and justify the appropriate methods, materials, and strategies to solve problems.	Teacher will guide students to: View examples of responses ranging from 1 – 5 to find differences. Use correct technique in answering open ended questions. Explain how their work was done in finding a solution. Solve and explain work during journal examples.	Teacher evaluation of: Students' written responses Individuals during small group work Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials

CONTENT: Grade 7 Mathematics
CORE CONCEPT 2: Number Systems
MAJOR OBJECTIVE: Ability to complete fraction operations

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.1.8.B Simplify numerical expressions involving exponents, scientific notation and using order of operations.	Teacher will guide students to: Record vocabulary terms such as ratio, rate, and proportion. Write a ratio to compare quantities. Use proportions to determine if two quantities are equivalent. Calculate and apply unit rates or unit prices to find a "better deal".	Teacher evaluation of: Students' written responses Teacher observation Independent activities Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials
PA Standard 2.1.8.D Apply ratio and proportion to mathematical problem situations involving distance, rate, time, and similar triangles.	Teacher will guide students to: Record vocabulary terms such as ratio, rate, and proportion. Write a ratio to compare quantities. Use proportions to determine if two quantities are equivalent. Calculate and apply unit rates or unit prices to find a "better deal".	Teacher evaluation of: Students' written responses Teacher observation Independent activities Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials

CONTENT: Grade 7 Mathematics
CORE CONCEPT 3: Processes of Measurement
MAJOR OBJECTIVE: Use appropriate formulas to determine measurements

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.3.8.A Develop formulas and procedures for determining measurements.	Teacher will guide students to: Review properties of quadrilaterals and circles. Using different sized quadrilaterals calculate the area and perimeter. Calculate circumference and area of circles using given formulas.	Teacher evaluation of: Students' written responses Teacher observation Independent activities Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials Teacher will guide students to: Quadrilateral cutouts
PA Standard 2.3.8.B Solve rate problems (e.g., rate x time = distance, principal x interest rate = interest).	Teacher will guide students to: Review properties of quadrilaterals and circles. Using different sized quadrilaterals calculate the area and perimeter. Calculate circumference and area of circles using given formulas.	Teacher evaluation of: Students' written responses Teacher observation Independent activities Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials Teacher will guide students to: Quadrilateral cutouts

CONTENT: Grade 7 Mathematics
CORE CONCEPT 3: Processes of Measurement
MAJOR OBJECTIVE: Use appropriate formulas to determine measurements

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.3.8.D Estimate, use, and describe measures of distance, rate, perimeter, area, volume, weight, mass, and angles.	Teacher will guide students to: Discuss formulas for finding perimeter and area of figures. Make measurements in classroom including lengths and weights. Use formulas to determine perimeter, area, and weights of objects in the classroom.	Teacher evaluation of: Students' written responses Teacher observation Independent activities Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials

CONTENT: Grade 7 Mathematics
CORE CONCEPT 4: Algebraic Concepts
MAJOR OBJECTIVE: Use appropriate strategies to solve expressions or equations and demonstrate an understanding of patterns.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.8.8.D Use concrete objects to model algebraic concepts.	Teacher will guide students to: Introduce vocabulary terms such as equation, inequality, expression, and variable. Use mental math to identify the value of the variable in an equation then show your work to check your answer. Explain or Predict a way to solve an equation for the variable if you cannot do it mentally.	Teacher evaluation of: Students' written responses Teacher observation Independent activities Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials
PA Standard 2.8.8.E Select and/or use appropriate strategies to solve an equation or inequality, explain the solution and check the solution for accuracy.	Teacher will guide students to: Introduce vocabulary terms such as equation, inequality, expression, and variable. Use mental math to identify the value of the variable in an equation then show your work to check your answer. Explain or Predict a way to solve an equation for the variable if you cannot do it mentally.	Teacher evaluation of: Students' written responses Teacher observation Independent activities Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials

CONTENT: Grade 7 Mathematics
CORE CONCEPT 5: Data Analysis
MAJOR OBJECTIVE: Ability to organize, display, and analyze data

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.6.8.A Compare and contrast different plots of data using values of mean, median, mode, quartiles, and range.	Teacher will guide students to: Review the measures of central tendency. Practice finding the measures using different data samples provided. Discuss the positives and negatives of each measure of central tendency. Analyze which measure would be best or most appropriate for a given situation.	Teacher evaluation of: Students' written responses Partner work Independent activities Student observations Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials

CONTENT: Grade 7 Mathematics
CORE CONCEPT 5: Data Analysis
MAJOR OBJECTIVE: Ability to organize, display, and analyze data

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.6.8.B Explain effects of sampling procedures and missing or incorrect information of reliability.	Teacher will guide students to: Review the measures of central tendency. Practice finding the measures using different data samples provided. Discuss the positives and negatives of each measure of central tendency. Analyze which measure would be best or most appropriate for a given situation.	Teacher evaluation of: Students' written responses Partner work Independent activities Student observations Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials

CONTENT: Grade 7 Mathematics
CORE CONCEPT 5: Data Analysis
MAJOR OBJECTIVE: Ability to organize, display, and analyze data

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.6.8.E Analyze and display data in stem-and-leaf and box-and-whisker plots.	Teacher will guide students to: Review the measures of central tendency. Practice finding the measures using different data samples provided. Discuss the positives and negatives of each measure of central tendency. Analyze which measure would be best or most appropriate for a given situation.	Teacher evaluation of: Students' written responses Partner work Independent activities Student observations Whole class discussion	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials

CONTENT: Grade 7 Mathematics
CORE CONCEPT 6: Probability
MAJOR OBJECTIVE: Calculate probabilities in lowest terms

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.7.8.B Present the results of an experiment using visual representation (e.g., tables, charts, graphs).	Teacher will guide students to: Review probability of simple events. Create a tally chart to record results from dice rolling experiment. Create a bar graph to show the results of the dice rolling experiment.	Teacher evaluation of: Students' written responses Partner work Independent activities Individuals during small group work	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials Dice
PA Standard 2.7.8.E Make valid inferences, predictions, and arguments based on probability.	Teacher will guide students to: Review probability of simple events. Predict the outcome of experiments involving die and coins based on theoretical probability. Explain whether theoretical probability and experiment probability will definitely align.	Teacher evaluation of: Students' written responses Partner work Independent activities Individuals during small group work	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials Dice

CONTENT: Grade 7 Mathematics
CORE CONCEPT 7: Geometric Relationships
MAJOR OBJECTIVE: Identify and compare properties of two-dimensional shapes

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.9.8.A Construct figures incorporating perpendicular and parallel lines, the perpendicular dissector of a line segment and an angle bisector using computer software.	Teacher will guide students to: Memorize vocabulary words (e.g., symmetry, tessellations, congruence). Identify all letters that have each type of symmetry. Describe a tessellation you have seen in the real world. Create an example of a tessellation.	Teacher evaluation of: Students' written responses Partner work Independent activities Individuals during small group work	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials Dice
PA Standard 2.9.8.B Draw, label, measure and list the properties of complementary, supplementary and vertical angles.	Teacher will guide students to: Memorize vocabulary words (e.g., symmetry, tessellations, congruence). Identify all letters that have each type of symmetry. Describe a tessellation you have seen in the real world. Create an example of a tessellation.	Teacher evaluation of: Students' written responses Partner work Independent activities Individuals during small group work	Textbook resources Library/AV resources Computer programs/web sites Journal or notebook Publisher's supplemental materials Dice

V. EXPECTED LEVELS OF ACHIEVEMENT

A. Students are expected to reach the 7th Grade level of achievement in mathematics. These skills include all of those noted in the specific content area of this curriculum.

B. Grading system for PSSA Math Prep class is as follows:

Grading Scale	
Proficient	62% – 100%
Basic	0% – 61%

C. Each student's grade will be determined at the conclusion of each marking period.