

Planned Course of Study

ALGEBRA TOPICS

Grades 8 - 12

Mathematics Department

Salisbury Township School District

1140 Salisbury Road

Allentown, PA 18103

ALGEBRA TOPICS
Grades 8 - 12
Full Year

Learning Objectives/ Content	Teaching/Learning Activities	Evaluation Criteria	State Standard
1. The student will be able to: To work with all real numbers	students will use number lines to add and subtract numbers students will solve expressions using addition, subtraction, multiplication, division and absolute value of real numbers	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.1.8F 2.1.8G 2.5.8A
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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Learning Objectives/ Content	Teaching/Learning Activities	Evaluation Criteria	State Standard
<p>2. The student will be able to:</p> <p>To simplify expressions using the correct order of operations</p>	<p>students will solve expressions in the proper arithmetic order</p>	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	<p>2.1.8B 2.2.8A 2.3.8A 2.1.8F</p>
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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3. The student will be able to: simplify algebraic expressions	<p style="text-align: center;">students will use various bottle caps to distinguish like and unlike terms</p> <p style="text-align: center;">students will simplify algebraic expressions involving addition, subtraction, multiplication, and division</p>	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	<p>2.1.8G 2.5.8A</p>
Resources/Materials			
bottle caps.			
Additional Resources/Inter-disciplinary Relationships			

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4. The student will be able to: use substitution method to simplify algebraic expressions	students will use bottle caps of several products and substitute the cost of each product to compute a total value	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.1.11A 2.8.8J
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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5. The student will be able to: to translate word problems into algebraic equations and solve using replacement sets	make charts of word relating to arithmetic operations demonstrate with examples of words into algebraic expressions solve equations using student input	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.1.11A 2.8.8J
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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6. The student will be able to: solve equations using several transformations	students will solve equations using algebra tiles students will solve equations after being shown many examples	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.1.8G 2.3.8A
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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7. The student will be able to: evaluate equations and inequalities with more than one variable when given replacements sets	<p style="text-align: center;">students will check replacement sets in given equations</p> <p style="text-align: center;">students will be able to use a number line to solve and represent solutions to linear inequalities</p>	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	<p>2.2.8A</p> <p>2.3.8A</p> <p>2.5.11CD</p>
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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8. The student will be able to: plot points in linear equations in a Cartesian Plane	<p style="text-align: center;">students will plot points in a Cartesian Plane</p> <p style="text-align: center;">students will graph linear equations in a Cartesian Plane</p> <p style="text-align: center;">students will use graphing calculators to plot points in lines</p>	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.8.11E
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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<p>9. The student will be able to: determine the slope of a line</p>	<p>students will compute the slope given 2 points</p> <p>students will identify the slope in slope-intercept form of linear equations</p> <p>students will graph many lines and formulate postulates regarding parallel, perpendicular, and intersecting lines</p>	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	<p>2.8.11G 2.8.11J 2.8.11K 2.8.11L 2.8.8G</p>
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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10. The student will be able to: determine the equation of a line	students will learn slope-intercept, 2 point, and slope point equations by teacher examples	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.8.11G
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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11. The student will be able to: understand what a function is and to define a function using tables and graphs	students will use newspapers to draw and interpret graphs	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.2.8F
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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12. Students will be able to: compute the range of a function given the domain	students will follow teacher directed examples	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.8.11K
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			

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13. The student will be able to: use proportions to solve problems	teacher directed examples	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.1.8G 2.3.8A 2.8.8J
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Additional Resources/Inter-disciplinary Relationships			

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14. Students will be able to: solve systems of linear equations	students will use graphing calculators to find solutions of the system teachers will use power point demonstration to show solving systems using addition, subtraction, multiplication, and division methods	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.2.11C 2.5.11B 2.8.11F 2.8.11G 2.2.11F 2.5.11C
Resources/Materials			
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15. Students will be able to: solve inequalities using several transformations and graph the solutions	students will “experiment” with arithmetic inequalities and develop rules for inequalities teacher directed examples	<ul style="list-style-type: none"> homework assignments, discussion and class activities, quizzes and tests 	2.3.8B 2.5.11ABCD
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Additional Resources/Inter-disciplinary Relationships			

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16. Students will be able to: solve problems that involve inequalities	teacher directed examples	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.3.8B 2.5.11ABCD
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Additional Resources/Inter-disciplinary Relationships			

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17. Students will be able to: find the solution sets of combined inequalities	teacher directed examples	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.2.11C 2.5.11B 2.8.11F 2.8.11G 2.2.11F 2.5.11C
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18. Students will be able to: solve equations and inequalities involving absolute values	teacher directed examples of equations and inequalities	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	2.5.11D
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Additional Resources/Inter-disciplinary Relationships			

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19. Students will be able to: graph linear inequalities in two variables	students will use graphing calculators to graph 2 linear inequalities teacher directed examples	<ul style="list-style-type: none"> homework assignments, discussion and class activities, quizzes and tests 	2.8.11EGJK
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Additional Resources/Inter-disciplinary Relationships			

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20. Students will be able to: identify the basic number properties of real numbers	students will be given a complex arithmetic expression and must use the properties to justify each step used to simplify the expression	<ul style="list-style-type: none"> • homework assignments, discussion and class activities, quizzes and tests 	
Resources/Materials			
Additional Resources/Inter-disciplinary Relationships			