Common Core 7th Grade Accelerated

Curriculum Guide

Scranton School District

Scranton, PA

Common Core 7th Grade Accelerated

Prerequisite :

Students must pass the required placement exam with a grade of 85% or higher and must meet 4 out of the 5 following criteria:

- A grade of 90% or higher in Grade 6 Mathematics
- Teacher recommendation from the 6th grade mathematics teacher
- Students must maintain an average or 90% or above by the end of the 1st quarter to remain in the class
- Students must perform in the top 1/3 of the proficient or advanced scores on the sixth grade PSSA test
- Parent's consent

Intended Audience: This course is designed for the student who has successfully completed grade 6 with 4 out of the 5 criteria listed above, by the end of the 6th grade.

Year-at-a-glance

This course differs from the Common Core Math 7 course in that it contains some content from 8th grade. While coherence is retained, in that it logically builds from the 6th Grade, the additional content when compared to the non-accelerated course demands a faster pace for instruction and learning. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. The critical areas are as follows:

- Students develop a unified understanding of number, recognizing fractions, decimals, and percents as different representations of rational numbers.
- Students extend addition, subtraction, multiplication and division to all rational numbers, and view negative numbers in terms of everyday contexts. Students explain and interpret the rules of for adding, subtracting, multiplying and dividing with negative numbers. They extend their mastery of the properties of operations to develop an understanding of integer exponents.

- Students use linear equations to represent, analyze, and solve a variety of problems. Students strategically choose and efficiently implement procedures to solve linear equations in one variable.
- Students learn to identify triangles by sides and angles and identify angles formed when parallel lines are cut by a transversal.
- Students will solve problems involving area and circumference of a circle and surface area of three-dimensional objects. They solve real-world and mathematical problems involving area, surface area, and volumes of two- and three- dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Students show that the sum of the angles in a triangle is the angle formed by a straight line.
- Students calculate probability of simple and compound events. Students analyze the measures of central tendency to make predictions of a population.
- Students are introduced to the slope intercept form of an equation and use it to graph lines and interpret the equation.

After successfully completing the course, students will be allowed to enroll in Algebra I Accelerated K/CC or Common Core 8P Concepts of Algebra.

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Subject: Common Core 7th Grade Accelerated	Grade Level 7	Date Completed:

1st Quarter

Topic	Resources	CCSS
The integer and rational number operations, absolute value, properties of zero, real-world applications	Big Ideas Red Accelerated Chapter 1 and 2	7.NS.1, 1a,1b,1c,1d,2,2a,2b,2c
Using real-world multi-step problems involving rational numbers	Big Ideas Red Accelerated Chapter 2	7 EE.3
Converting between decimals and fractions	Big Ideas Red Accelerated Chapter 2	7 NS.2
Combining algebraic like terms and using distributive property	Big Ideas Red Accelerated Chapter 3	7. EE. 1, 2, 3, 4a, 4b
Writing expressions and combining linear expressions to solve real-world problems	Big Ideas Red Accelerated Chapter 3	7 EE.2; 7EE.3, 7 EE.4

2nd Quarter

Topic	Resources	CCSS
Solve one and two-step equations and inequalities; use these to solve real-world problems	Big Ideas Red Accelerated Chapter 3 & 4	7 EE.3, 7EE.4
Compute unit rates with ratios of fractions	Big Ideas Red Accelerated Chapter 5	7 RP.1, 1a, 1b,1c, 1d
Decide whether two quantities are proportional	Big Ideas Red Accelerated Chapter 5	7 RP.2
Identify the constant of proportionality; represent proportional relationships with equations; Explain what a point (x,y) on the graph of a proportional relationship is	Big Ideas Red Accelerated Chapter 5	7RP.2
Graphing proportional relationships	Big Ideas Red Accelerated Chapter 5	7 RP. 2
Scale drawings: using proportions to find missing dimensions in a drawing	Big Ideas Red Accelerated Chapter 7	7.G.1

3rd Quarter

Percents -Solving percent problems (finding part, whole and %); real world applications (discount, markup, tax)	Big Ideas Red Accelerated Chapter 6	7.RP.2
Identify all types of triangles by sides and angles	Big Ideas Red Accelerated Chapter 7	7.G.2
Triangle Inequality Theorem	Big Ideas Red Accelerated Chapter 7	7.G.2
Angle Relationships	Big Ideas Red Accelerated Chapter 7	7.G.2
Identifying cross sections of three-dimensional figures	Big Ideas Red Accelerated Chapter 7	7.G.2
Identifying parts and finding circumference and area of a circle	Big Ideas Red Accelerated Chapter 7	7.G.4
Classify quadrilaterals using properties	Big Ideas Red Accelerated Chapter 7	7.G.2
Using equations to solve for angles in a triangle and quadrilateral	Big Ideas Red Accelerated Chapter 7	7.G.5
Volume and surface area of cube, triangular, rectangular prisms	Big Ideas Red Accelerated Chapter 7	7.G.4,6

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4th Quarter

Topic	Resources	CCSS
Making inferences and predictions from a sample, using measures of central tendency	Big Ideas Red Accelerated Chapter 10	7.SP.1, 2, 3, 4, 5, 6, 7a, 7b, 8a,8b 8c
Finding the probability of an event, compound events	Big Ideas Red Accelerated Chapter 10	7.SP.7, 8
ALL TOPICS ABOVE MUST BE COMPLETED PRIOR TO PSSA TESTING		
Simplify radicals and integer exponents	Big Ideas Red Accelerated Chapter 16	8.EE
Understand and apply the Pythagorean Theorem	Big Ideas Red Accelerated Chapter 14	8. G
Solving Multi-Step Linear Equations, including literal equations	Big Ideas Red Accelerated Topic 1,2 &3	8.EE.7
Graphing & Writing Linear Equations (y=mx +b)	Big Ideas Red Accelerated Chapter 13	8.EE.6

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Pacing guide will change as common core becomes more implemented. This is a suggested timeline.

General Topic	Academic Standard(s)	Essential Knowledge, Skills & Vocabulary	Resources & Activities	Best Practices	Suggested Time
Integer Addition/ Subtraction/Multiplication/Division	7.NS.1	• Add and subtract rational number • horizontal and vertical number line	Big Ideas Red Accelerated Chapter 1.1	• Introducing integer operations using situational word problems • Using the number line to show addition and subtraction	8 days
Absolute Value	7.NS.1a	• Absolute Value • Opposites • Describe situations in which opposite quantities combine to make 0. • Additive Inverse • Apply real world context to opposites and absolute value.	Big Ideas Red Accelerated Chapter 1.1, 1.2, 2.2 Crosswalk Coach Lesson 7		3 days

Rational Operations	**7.NS.1d**	• **Apply properties of operations strategies** • **add and subtract rational numbers**	**Crosswalk Coach Lesson 7** **Big Ideas Red Accelerated Chapter 1.1, 1.2, 1.3, 2.2, 2.3**		**10 days**
Types of decimals	**7.NS.2d**	• **Terminating decimal** • **repeating decimal**	**Big Ideas Red Accelerated Chapter 2.1**	• **Use Long division to determine repeating or terminating**	**4 days**
Distributive property	**7.NS.2a**	• **Repeated addition**	**Crosswalk Coach Lesson 8** **Big Ideas Red Accelerated Chapter 1.4, 2.4**	• **Area Model**	**4 days**
Expressions	**7.EE.1**	• **Coefficient** • **like/unlike terms** • **Apply operations as strategies to add, subtract expressions**	**Crosswalk Coach Lesson 14,15** **Triumph Learning CC Lesson 13** **Big Ideas Red Accelerated Chapter 3.1, 3.2, Ext 3.2**	• **Algebra tiles** • **Utilize colors or symbols to identify like terms**	**6 days**
Writing Expressions	**7.EE.2**		**Crosswalk Coach Lesson 13, 16**	• **Key words for 4 operations**	**4 days**

			Big Ideas Red Accelerated Chapter 3.1, 3.2		
Equations	7.EE.4	Use equations to solve problems	Crosswalk Coach Lesson 17 Triumph Learning CC Lesson 16	• Algebra tiles • Vertical solving of equations	12 days
Inequalities	7.EE.4b	• Compare inequalities to mathematical solutions	Crosswalk Coach Lesson 18 Big Ideas Red Accelerated Chapter 4.1, 4.2, 4.3, 4.4	• Focus on specific vocabulary that seems contrary to symbol;	8 days
Unit rates	7.RP.1	• Compute unit rates • associated with ratios of fractions	Big Ideas Red Accelerated Chapter 5.1	• Stress that unit rate is division • Simplify complex fractions.	4 days
Proportions	7.RP.2a	• two equal quantities • proportional relationship	Crosswalk Coach Lesson 17 Triumph Learning CC Lesson 16	• Solving a proportion by cross products	3 days

Unit rate/Constant of proportionality/slope	**7.RP.2b**	• **Unit rate** • **Constant of proportionality** • **Slope**	**Crosswalk Coach Lesson 17** **Big Ideas Red Accelerated Chapter 3.3, 3.4, 3.5**	• **Stress that Unit rate/Constant of proportionality /slope are all the same-USE PROPER TERMINOLOGY**	**2 days**
Graphing proportional relationships	**7.RP.2d**	• **Explain what a point (x,y) on the graph means** • **proportional relationship**	**Crosswalk Coach-lesson 12** **Common Core Coach –Lesson 3** **Big Ideas Red Accelerated Chapter Ext 5.2, Ext 5.6**	• **Have students graph lines using a t-table to see that line passes through origin**	**4 days**
Percent-Fraction-Decimal Equivalence	**7. RP**	• **Converting between percent, fractions and decimals** • **Finding whole, part and %**	**Big Ideas Red Accelerated Chapter 6.1,6.2**	• **Percent model/grid to show equivalence** • **Use equation or proportion to solve**	**4 days**
Percent- Real world applications	**7.RP**	• **Discount, mark** • **-up** • **Tax** • **Commission**	**Big Ideas Red Accelerated Chapter 6**	• **Solve using equation or proportion**	**6 days**
Scale drawings	**7.G.1**	• **Scale drawings** • **reproducing a scale**	**Crosswalk Coach Lesson 20** **Triumph Learning CC Coach Lesson 18**	• **Solve by writing a proportion**	**2 days**

			Big Ideas Red Accelerated Chapter 7.5		
Triangles	7.G.1	• Classify by sides • Classify by angles • Sum of interior angles	Big Ideas Red Accelerated Chapter 7.5	• Utilize definitions to identify triangles by sides and angles	2 days
Triangle Inequality	7.G.1.13	• Apply the triangle inequality theorem	Big Ideas Red Accelerated Chapter 7.5	• Sum of any two sides of a triangle must be greater than the third side	0.5 day
Quadrilaterals	7.G.2	• Squares • Rectangles • Parallelograms • Trapezoid	Big Ideas Red Accelerated Chapter 7	• Classify by characteristics	1 day
Relationships for angles	7.G.5	• Supplementary • Complementary • Vertical • Adjacent	Crosswalk Coach Lesson 24 Triumph Learning CC Lesson 22 Big Ideas Red Accelerated	• Show angles that are created when parallel lines are cut by a transversal	3 days

			Chapter 7.1, 7.2, Ext 7.3		
Angles formed by Parallel Lines	8.G.1c, 7.G.1.13	• Identify and use properties of angles formed when two parallel lines are cut by a transversal • Identify alternate interior, alternate exterior, vertical, corresponding	Big Ideas Red Accelerated Chapter 11.2, 11.3, 11.4		2 days
Circles	7.G.4	• Radius and diameter • Area of a circle • circumference	Crosswalk Coach Lesson 23 Triumph Learning CC Lesson 21 Big Ideas Red Accelerated Chapter 8.1, 8.2, 8.3, 9.3	• Review parts of circle	4 days
Surface area and volume	7.G.6	• Two and three dimensional figures • Triangles, quadrilaterals,	Crosswalk Coach Lesson 25,26,27 Triumph Learning CC Lesson 23,24 Big Ideas Red Accelerated Chapter 8.4, 9.1, 9.2, 9.4, 9.5	• Find areas of nets or use formulas	3 days

		polygons, cubes, right prisms			
Cross Sections	7.G.3	• Describe the 2-d figures that result from slicing 3-d rect. prisms and pyramids	Crosswalk Coach Lesson 22 Triumph Learning CC Lesson 20 Big Ideas Red Accelerated Chapter Ext 9.5	• Use 3-D models to visualize cross-sections	1 day
Probability/Likelihood of Events	7.SP.2, 7.SP.3.2	• Find the probability of a simple event • probability of a simple event not occurring • Probability is a number between 0 and 1	Crosswalk Coach Lesson 30, 35 Triumph Learning CC Lesson 27 Big Ideas Red Accelerated Chapter 10.6, Ext 10.6	• Use real world events to determine likelihood (impossible,unlikely, equally likely or unlikely, likely or definite)	1 day
Measures of central tendency	7.SP.4	• Variability of data • draw inferences	Crosswalk Coach Lesson 31,32,34,35 Triumph Learning CC Lesson 27 Big Ideas Red Accelerated Chapter 10.7	• Review mean, median and mode	2 days

Variability	**7.SP.3**	• **Absolute deviation** • **dot plot**	**Crosswalk Coach Lesson 33,35** **Triumph Learning CC Lesson 27** **Big Ideas Red Accelerated Chapter 10.7**	• **Review Interquartile Range (IQR) and Mean Absolute Deviation (MAD)**	**2 days**
Theoretical and Experimental Probability	**7.SP.6**	• **Rolling a number cube** • **Frequency of an event** • **Collecting data**	**Crosswalk Coach Lesson 28** **Triumph Learning CC Lesson 9** **Big Ideas Red Accelerated Chapter 10.3**	• **Know differences between theoretical and experimental**	**2 days**
Probability model	**7.SP.7b**	• **Develop a probability model by observing**	**Crosswalk Coach Lesson 28** **Big Ideas Red Accelerated Chapter 10.3**		**2 days**
Probability of compound events	**7.SP.8a**	**Find the probability of a compound event**	**Crosswalk Coach Lesson 29** **Triumph Learning CC Lesson 30** **Big Ideas Red Accelerated Chapter 10.4, 10.5**		**2 days**
Integer Exponents	**8.EE**	• **Base** • **Square Root** • **Exponent Rules**	**Big Ideas Red Accelerated Chapter 11.2, 11.3, 11.4**	**Exponent Rules**	**3 days**
Pythagorean Theorem	**8.G.6,7,8**	• **Legs**	**Big Ideas Red Accelerated**		**2 days**

		• Hypotenuse	Chapter 11.2, 11.3, 11.4		
Graphing & writing linear equations	8.EE.5	• Unit rate • Slope Graph proportional relationships • $Y = mx + b$	Big Ideas Red Accelerated Chapter 13.1, 13.3		2 days
Slope of a linear equation	8.EE.6	• Use similar figures explain why slope m is the same between two points • a non-vertical line	Big Ideas Red Accelerated Chapter 13.2, Ext13.2, 13.3, 13.4, 13.5, 13.6, 13.7		4 days
Solve linear equations	8.EE.7	Solve linear equations in one variable	Extension Topic 1 and Topic 2		2 days
Irrational Numbers	8NS.1	• Rational • Irrational • Repeating • Terminating	Big Ideas Red Accelerated Chapter 14.4, Ext 14.4		2 days

Square and Cube Roots	**8NS.2**	• **Finding a decimal approx. for an irrational number** • **Square roots**	**Big Ideas Red Accelerated Chapter Ext 14.4**	• **Use Factor Trees to simplify square and cube roots**	**2 days**