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| **Curriculum Management System** | |
| ***PAULSBORO PUBLIC SCHOOLS*** | |
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| **Math Curriculum Grade 6** | |
| **UPDATED JUNE 2016** | |
| **For adoption by all regular education programs as specified and for adoption or adaptation by all Special Education Programs in accordance with Board of Education Policy.** | **Board Approved: September 2016** |

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| **Paulsboro Public Schools** |
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| **Paulsboro Public Schools** |
| **MissionStatement**  The mission of the Paulsboro School District is to provide each student the educational opportunities to assist in attaining their full potential in a democratic society. Our instructional programs will take place in a responsive, community based school system that fosters respect among all people.Our expectation is that all students will achieve the New Jersey Core Curriculum Content Standards (NJCCCS) at every grade level. |

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| New Jersey State Department of Education  21st Century College and Career Readiness Standards  **The 12 Career Ready Practices**  These practices outline the skills that all individuals need to have to truly be adaptable, reflective, and proactive in life and careers. These are researched practices that are essential to career readiness.  CRP1. Act as a responsible and contributing citizen and employee.  CRP2. Apply appropriate academic and technical skills.  CRP3. Attend to personal health and financial well-being.  CRP4. Communicate clearly and effectively and with reason.  CRP5. Consider the environmental, social and economic impacts of decisions.  CRP6. Demonstrate creativity and innovation.  CRP7. Employ valid and reliable research strategies.  CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.  CRP9. Model integrity, ethical leadership and effective management.  CRP10. Plan education and career paths aligned to personal goals.  CRP11. Use technology to enhance productivity.  CRP12. Work productively in teams while using cultural global competence.  Reading and Writing Standards   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Reading Unit** | **Reading Standards** | **Writing Unit** | **Writing Standards** | **Speaking & Listening Standards** | **Language Standards** | **Foundational Skills Standards** | | Launching Reading with Experienced Readers | RL.6.1, RL.6.2, RL.6.5 | Launching Writing Workshop | W.6.3, W.6.4 | SL.6.1 | L.6.2, L.6.4 | RF.6.3, RF.6.4 | | Following Characters into Meaning | RL.6.1, RL.6.2, RL.6.5, RL.6.6 | Narrative Craft Writing | W.6.3, W.6.4, W.6.5 | SL.6.1, SL.6.3 | L.6.1, L.6.3, L.6.4 | RF.6.3, RF.6.4 | | Nonfiction Reading | RI.6.4, RI.6.8, RI.6.9 | Informational Writing | W.6.2, W.6.5, W.6.8 | SL.6.1, SL.6.2 | L.6.1, L.6.4, L.6.5, L.6.6 | RF.6.3, RF.6.4 | | Nonfiction Research Projects | RI.6.1, RI.6.4, RI.6.5, RI.6.6, RL.6.4 | Research Reports | W.6.2, W.6.5, W.6.6, W.6.7, W.6.9 | SL.6.1, SL.6.4 | L.6.3, L.6.4, L.6.5, L.6.6 | RF.6.3, RF.6.4 | | Historical Fiction Book Clubs | RL.6.2, RL.6.3, RL.6.4, RI.6.3 | Research Reports | W.6.1, W.6.4, W.6.5, W.6.6, W.6.7, W.6.10 | SL.6.1, SL.6.2 | L.6.4, L.6.5, L.6.6 | RF.6.3, RF.6.4 | | Interpretation Text Sets | RI.6.1, RI.6.3, RI.6.4, RI.6.5, RI.6.8, RL.6.3 | Research Based Argument Writing | W.6.1, W.6.4, W.6.5, W.6.10 | SL.6.1, SL.6.4 | L.6.4, L.6.5, L.6.6 | RF.6.3, RF.6.4 | | Informational Reading | RI.6.4, RI.6.6, RI.6.7, RL.6.7, RL.6.4 | Research Based Argument Writing | W.6.1,W.6.4, W.6.5, W.6.10 | SL.6.1, SL.6.3, SL.6.5 | L.6.4, L.6.5, L.6.6 | RF.6.3, RF.6.4 | | Test Preparation | RI.6.2, RI.6.4, RI.6.10, RL.6.3 | Test Preparation | W.6.5, W.6.9, W.6.10 | SL.6.1 | L.6.1, L.6.4, L.6.5, L.6.6 | RF.6.3, RF.6.4 | | Fantasy Fiction or Author Study | Rl.6.9, RL.6.10 | Shaping Texts: Memoir | W.6.5, W.6.10 | SL.6.1, SL.6.6 | L.6.4, L.6.5, L.6.6 | RF.6.3, RF.6.4 | |
| **Standards for Mathematical Practice**  MP.1 Make sense of problems and persevere in solving them.  MP.2 Reason abstractly and quantitatively.  MP.3 Construct viable arguments & critique the reasoning of others.  MP.4 Model with mathematics.  MP.5 Use appropriate tools strategically.  MP.6 Attend to precision.  MP.7 Look for and make use of structure.  MP.8 Look for and express regularity in repeated reasoning.  Pacing Guide   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **TOPIC** | **# OF DAYS** | **DATES** | **COMMENTS** | **EMPHASIS** | | 1 – Numeration | 7 | 9/8 – 9/16 | Focus On Understanding Decimals | Major | | 2 – Variables | 10 | 9/17 – 9/30 | Complete Entire Unit | Major | | 3 – Operations With Dec. | 13 | 10/1 – 10/17 | Include 3-5A, 3-9A, Exclude 3-9 | Major | | 4 – Solving Equations | 7 | 10/20 – 10/28 | Complete Entire Unit | Major | | 5 – Number/Frac. Concepts | 8 | 10/29 – 11/5 | Combine Lessons When Possible | Major | | 6 – Dec./Frac./Mixed #’s | 7 | 11/12 – 11/21 | Complete Entire Unit | Major | | 7 – Add/Sub Mixed #’s | 7 | 11/24 – 12/5 | Should Be Able to Skip 7-1 & 7-2 | Major | | 8 – Mult. Frac/Mixed #’s | 7 | 12/8 – 12/16 | Review Unit | Major | | 17 – Perimeter/Area | 5 | 12/17 – 12/23 | Use This Topic If Time Before Christmas | Supporting | | 9 – Div. Frac/Mixed #’s | 9 | 1/5 – 1/16 | Complete All Lessons | Major | | 10 – Integers | 7 | 1/12 – 1/23 | Skip 10-4, 10-5, 10-6, 10-7, 10-8, 10-10 | Major | | 12 – Ratio/Proportions | 8 | 1/26 – 2/6 | Complete Entire Unit | Major | | 13 – Solving Proportions | 7 | 2/9 – 2/18 | Skip 13-3, 13-5, 13-6, Include 13-3A, 13-3B | Supporting | | 14 – Understanding Percent | 8 | 2/19 – 3/3 | Skip 14-3, 14-6 & Include 14-6A | Supporting | | 18 – Volume & Surface Area | 6 | 3/4 – 3/13 | Skip 18-4, 18-5, Include 18-4A | Supporting | | 15 – Equations & Graphing | 10 | 3/16 – 3/27 | Skip 15-6 & Include 15-6A | Supporting | | 11 – Properties of 2D Shapes | 7 | 4/6 – 4/14 | Exclude 11-3, 11-6 & 11-7 | Additional | | 16 – Measurement | 7 | 4/15 – 4/24 | Exclude 16-3 | Additional | | 19 – Data & Graphs | 14 | 4/27 – 5/15 | Exclude 19-1, 19-2, 19-3, 19-4, 19-7, 19-9  Include: 19-5A, 19-5B, 19-5C, 19-5D,  19-8A, 19-8B, 19-9A | Additional | | 20 – Probability | 0 | If Time Allows | Complete If Time Allows | Additional | |

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| **Scope and Sequence** | |
| **Quarter 1 – Grade \_\_6\_\_** | |
| **Big Idea #1: Apply and extend previous understandings of multiplication and division to divide fractions** (NJ DOE Unit 1)  (EnVision Topic 12)  **Big Idea #3: Understand Ratio concepts and use ratio reasoning to solve problems** (NJ DOE Unit 1) (EnVision Topic 9-11) | **Big Idea #2: Compute fluently with multi-digit numbers and find common factors and multiples** (NJ DOE Unit 1)  (EnVision Topic 6,7)  **Big Idea #4: Compute fluently with multi-digit numbers and find common factors and multiples** (NJ DOE Unit 1) (EnVision Topic 8) |

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| **Scope and Sequence** | |
| **Quarter 2 – Grade \_\_6\_\_** | |
| **Big Idea #1: Apply and extend previous understanding of arithmetic to algebraic expressions** (NJ DOE Unit 2)  (EnVision Topic 1, 6, 7, 12-14) | **Big Idea #2: Apply and extend previous understandings of arithmetic to algebraic expressions** (NJ DOE Unit 2) (EnVision Topic 1, 2) |

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| **Scope and Sequence** | |
| **Quarter 3 – Grade \_\_6\_\_** | |
| **Big Idea #1: Apply and extend previous understandings of numbers to the system of rational numbers** (NJ DOE Unit 3) (EnVision Topic 3)  **Big Idea #3: Reason about and solve one-variable equations and inequalities** (NJ DOE Unit 3) (EnVision Topic 1, 2, 5-7, 12, 14) | **Big Idea #2: Apply and extend previous understandings of numbers to the system of rational numbers** (NJ DOE Unit 3)  (EnVision Topic 3, 4, 13)  **Big Idea #4: Solve real-world and mathematical problems**  (NJ DOE Unit 3) (NJ DOE Unit 4, 13) |

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| **Scope and Sequence** | |
| **Quarter 4 – Grade \_\_6\_\_** | |
| **Big Idea #1: Develop understanding of statistical variability**  (NJ DOE Unit 4) (EnVision Topic 15, 16)  **Big Idea #3: Summarize and describe distributions** (NJ DOE Unit 4)  (EnVision Topic 15, 16) | **Big Idea #2: Represent and analyze relationships between dependent and independent variables** (NJ DOE Unit 4)  (EnVision Topic 5) |

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| **QUARTER 1 –  Big Idea #1: Apply and extend previous understandings of multiplication and division to divide fractions**  **Topic: Operations and Reasoning about Ratios** | | |
| **Standards: Major Content**  **(Identified by PARCC Content Frameworks)**  6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because ¾ of 8/9 is 2/3. In general, (a/b) ÷ (c/d) = (ad/bc) How much chocolate will each person get if 3 people share 1`/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length ¾ mi and area ½ square mi.?  (EnVision Topic 12)  **Career Ready Practices**  CRP2. Apply appropriate academic and technical skills.  CRP4. Communicate clearly and effectively and with reason.  CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. | **GOAL** | |
| NJ DOE Unit 1: Students will apply and extend previous understandings of multiplication and division to divide fractions by fractions, compute fluently with multi-digit numbers and find common factors and multiples, and understand ration concepts and use ration reasoning to solve problems. | |
| **Essential Questions Assessments** | |
| 1. Explain how to create a story context using visual fraction models and equations to represent the problem**.** | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Compute quotients of fractions. 2. Construct visual fraction models to represent quotients and explain the relationship between multiplication and division of fractions. 3. Solve real-world problems involving quotients of fractions and interpret the solutions in the context given. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 1 –  Big Idea #2: Computer fluently with multi-digit numbers and find common factors and multiples**  **Topic: Operations and Reasoning about Ratios** | | |
| **Standards: Additional Content**  **(Identified by PARCC Content Frameworks)**  6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.  (EnVision Topic 6, 7)  6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standards algorithm for each operation.  (EnVision Topic 7) | **GOAL** | |
| NJ DOE Unit 1: Students will apply and extend previous understandings of multiplication and division to divide fractions by fractions, compute fluently with multi-digit numbers and find common factors and multiples, and understand ration concepts and use ration reasoning to solve problems. | |
| **Essential Questions Assessments** | |
| 1. Using the standard algorithm, explain and show how to divide multi-digit numbers fluently. 2. Using the standard algorithm, explain and show how to add multi-digit decimals. 3. Using the standard algorithm, explain and show how to subtract multi-digit decimals. 4. Using the standard algorithm, explain and show how to multiply multi-digit decimals. 5. Using the standard algorithm, explain and show how to divide multi-digit decimals. | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Fluently add, subtract, multiply and divide multi-digit decimals and whole numbers using standard algorithms. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 1 –  Big Idea #3: Understand ratio concepts and use ratio reasoning to solve problems**  **Topic: Operations and Reasoning about Ratios** | | |
| **Standards: Major Content**  **(Identified by PARCC Content Frameworks)**  6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”  (EnVision Topic 9)  6.RP.2 Understand the concept of a unit rate a/b associated with a ratio a:b with b±0, and use rate language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar.” “We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.”  (EnVision Topic 10)  6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.  a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.  b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?  c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.  d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.  (EnVision Topic 9, 10, 11)  **Career Ready Practices**  CRP2. Apply appropriate academic and technical skills.  CRP4. Communicate clearly and effectively and with reason.  CRP8. Utilize critical thinking to make sense of problems and persevere in solving them | **GOAL** | |
| NJ DOE Unit 1: Students will apply and extend previous understandings of multiplication and division to divide fractions by fractions, compute fluently with multi-digit numbers and find common factors and multiples, and understand ration concepts and use ration reasoning to solve problems. | |
| **Essential Questions Assessments** | |
| 1. Using ratio language, describe a ration relationship between two quantities. 2. Describe unit rate a/b associated with a ration a:b. 3. Solve a real world problem using ratio and rate reasoning. | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Explain the relationship of two quantities or measures of a given ratio and use ratio language to describe the relationship between the two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.” 2. Use rate language in the context of a ratio relationship to describe a unit rate a/b associated with a ratio a:b with b≠0. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar.” “We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.” 3. Use ratio and rate reasoning to solve real world and mathematical problems that include making tables of equivalent ratios, solving unit rate problems, finding percent of a quantity as a rate per 100. 4. Use ratio and rate reasoning to convert measurement units (manipulate and transform units appropriately when multiplying or dividing quantities). | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |

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| **QUARTER 1–  Big Idea #4: Compute fluently with multi-digit numbers and find common factors and multiples**  **Topic: Operations and Reasoning about Ratios** | | |
| **Standards: Additional Content**  **(Identified by PARCC Content Frameworks)**  6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2).  (EnVision Topic 8)  **Career Ready Practices**  CRP2. Apply appropriate academic and technical skills.  CRP4. Communicate clearly and effectively and with reason.  CRP8. Utilize critical thinking to make sense of problems and persevere in solving them | **GOAL** | |
| NJ DOE Unit 1: Students will apply and extend previous understandings of multiplication and division to divide fractions by fractions, compute fluently with multi-digit numbers and find common factors and multiples, and understand ration concepts and use ration reasoning to solve problems. | |
| **Essential Questions Assessments** | |
| 1. What is the greatest common factor of two whole numbers less than or equal to 100? 2. What is least common multiple of two whole numbers less than or equal to 12? | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two numbers less than or equal to 12. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 2 –  Big Idea #1: Apply and extend previous understanding of arithmetic to algebraic expressions**  **Topic: Expressions and 3-D Geometry** | | |
| **Standards: Major Content**  **(Identified by PARCC Content Frameworks)**  6.EE.1 Write and evaluate numerical expressions involving whole number exponents.  (EnVision Topic 1)  6.EE.2 Read, write, and evaluate expressions in which letters stand for numbers.  a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as 5 – y.  b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2 (8 + 7) as a product of two factors; view  (8 + 7) as both a single entity and a sum of two terms.  c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas V = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2. (EnVision Topic 1, 6, 7,12-14)  6.EE.3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.  (EnVision Topic 1) | **GOAL** | |
| NJ DOE Unit 2: Students will apply and extend previous understandings of arithmetic to algebraic expressions, reason about and solve one-variable equations and inequalities, and solve real-world and mathematical problems involving area, surface area, and volume. | |
| **Essential Questions Assessments** | |
| 1. Identify parts of an expression using mathematical terms 2. Using whole-number exponents, write and evaluate a numerical expression. 3. What properties of operations are utilized to generate equivalent expressions? | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Use mathematical language to identify parts of an expression. 2. Write and evaluate numerical expressions involving whole number exponents. 3. Read, write, and evaluate expressions in which letters stand for numbers (Including formulas that arise from real-world contexts). | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |

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| **QUARTER 2–  Big Idea #2: Apply and extend previous understandings of arithmetic to algebraic expressions**  **Topic: Expressions and 3-D Geometry** | | |
| **Standards: Major Content**  **(Identified by PARCC Content Frameworks)**  6.EE.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.  (EnVision Topic 1, 2) | **GOAL** | |
| NJ DOE Unit 2: Students will apply and extend previous understandings of arithmetic to algebraic expressions, reason about and solve one-variable equations and inequalities, and solve real-world and mathematical problems involving area, surface area, and volume. | |
| **Essential Questions Assessments** | |
| 1. How can you determine that two expressions are equivalent? | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Apply the properties of operations to generate equivalent expressions (Including the distributive property; for example, express 36 + 8 as 4(9 + 2) and y + y + y = 3y. 2. Identify when two expressions are equivalent; for example, Are the two expressions equal? 81 + 18 and 9(9 + 2). | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 2 –  Big Idea #3: Solve real-world and mathematical problems involving area, surface area, and volume**  **Topic: Expressions and 3-D Geometry** | | |
| **Standards: Supporting Content**  **(Identified by PARCC Content Frameworks)**  6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.  (EnVision Topic 13)  6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.  (EnVision Topic 14)  6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.  (EnVision Topic 14) | **GOAL** | |
| NJ DOE Unit 2: Students will apply and extend previous understandings of arithmetic to algebraic expressions, reason about and solve one-variable equations and inequalities, and solve real-world and mathematical problems involving area, surface area, and volume. | |
| **Essential Questions Assessments** | |
| 1. Solve a real-world or mathematical area problem by composing or decomposing. 2. Using a net, represent a three-dimensional figure. 3. Explain how the volume is the same multiplying the edge length of a prism and by packing a right triangle prism with unit cubes. | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Find the area of right triangles, other triangles, special quadrilaterals and polygons by composing into rectangles or decomposing into triangles and other shapes to solve real world or mathematical problems. 2. Represent three dimensional figures using nets made of rectangles and triangles, and use the nets to find the surface area of the figures in the context of solving real world and mathematical problems. 3. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes. Show that the volume is the same as it would be if found by multiplying the edge lengths. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |

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| **QUARTER 3 –  Big Idea #1: Apply and extend previous understandings of numbers to the system of rational numbers**  **Topic: Equation, The Rational Number System, and 2-D Geometry** | | |
| **Standards: Major Content**  **(Identified by PARCC Content Frameworks)**  6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts explaining the meaning of 0 in each situation.  (EnVision Topic 3) | **GOAL** | |
| NJ DOE Unit 3: Students will reason about and solve one-variable equations and inequalities, apply and extend previous understandings of numbers to the system of rational numbers, and solve real-world and mathematical problems involving area, surface area, and volume. | |
| **Essential Questions Assessments** | |
| 1. Describe how quantities having opposite directions or values? | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Use positive and negative numbers to describe quantities in real-world situations. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 3 –  Big Idea #2: Apply and extend previous understandings of numbers to the system of rational numbers**  **Topic: Equation, The Rational Number System, and 2-D Geometry** | | |
| **Standards: Major Content**  **(Identified by PARCC Content Frameworks)**  6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.  a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.  b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.  c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.  (EnVision Topic 3, 4, 13)  6.NS.7 Understand ordering and absolute value of rational numbers.  a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.  b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write –3 oC > –7 oC to express the fact that –3 oC is warmer than –7 oC.  c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.  d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.  6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.  (EnVision Topic 3) | **GOAL** | |
| NJ DOE Unit 3: Students will reason about and solve one-variable equations and inequalities, apply and extend previous understandings of numbers to the system of rational numbers, and solve real-world and mathematical problems involving area, surface area, and volume. | |
| **Essential Questions Assessments** | |
| 1. Explain and show how a rational number as a point on a number line. 2. Explain a statement of order for rational numbers in real-world contexts. 3. By graphing points in all four quadrants of a coordinate plane, solve a real world problem. | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Locate positive and negative rational numbers on the number line and explain the meaning of absolute value of a rational number as indicating locations on opposite sides of zero on the number line and as magnitude for a positive or negative quantity in a real-world situation. 2. Use statements of inequality to determine relative positions of two rational numbers on a number line; Write and explain statements of order for rational numbers in real-world contexts. 3. Plot ordered pairs in all four quadrants on the coordinate plane and describe their reflections. 4. Solve real world problems mathematically by graphing points in all four quadrants of the coordinate plane. Use the absolute value of the differences of their coordinates to find distances between points with the same first coordinate or same second coordinate. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 3 –  Big Idea #3: Reason about and solve one-variable equations and inequalities**  **Topic: Equation, The Rational Number System, and 2-D Geometry** | | |
| **Standards: Major Content**  **(Identified by PARCC Content Frameworks)**  6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.  (EnVision Topic 2, 5)  6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (EnVision Topic 1, 2, 14)  6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.  (EnVision Topic 2, 6, 7, 12)  6.EE.8 Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.  (EnVision Topic 2) | **GOAL** | |
| NJ DOE Unit 3: Students will reason about and solve one-variable equations and inequalities, apply and extend previous understandings of numbers to the system of rational numbers, and solve real-world and mathematical problems involving area, surface area, and volume. | |
| **Essential Questions Assessments** | |
| 1. How can a variable represent an unknown number? 2. Which values from a specified set make an equation or inequality true? 3. Solve a real world problem using non-negative rational numbers with an equation in the form of x + p = q and px = q. 4. Using a number line diagram, represent solutions of inequalities that have many solutions. | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Use variables to represent numbers and write expressions when solving real world or mathematical problems. 2. Solve an equation or inequality to answer the question: which values from a specified set, if any, make the equation or inequality true? and check the solution using substitution to determine whether a given number in a specified set makes an equation or inequality true. (including formulas V=lwh and V=bh) . 3. Write and solve one step equations that represent real world or mathematical problems. 4. Write an inequality of the form x > c or x < c to represent a constraint or condition in a real world or mathematical problem and represent them on a number line diagram. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |

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| **QUARTER 3 –  Big Idea #4: : Solve real-world and mathematical problems**  **Topic: Equation, The Rational Number System, and 2-D Geometry** | | |
| **Standards: Supporting Content**  **(Identified by PARCC Content Frameworks)**  6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.  (EnVision Topic 4, 13)  **Career Ready Practices**  CRP2. Apply appropriate academic and technical skills.  CRP4. Communicate clearly and effectively and with reason.  CRP8. Utilize critical thinking to make sense of problems and persevere in solving them | **GOAL** | |
| NJ DOE Unit 3: Students will reason about and solve one-variable equations and inequalities, apply and extend previous understandings of numbers to the system of rational numbers, and solve real-world and mathematical problems involving area, surface area, and volume. | |
| **Essential Questions Assessments** | |
| 1. Use coordinates to find the length of a side joining points with the same first coordinate. | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Draw polygons in the coordinate plane given the coordinates of the vertices and use the coordinates to solve real-world distance, perimeter, and area problems. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 4 –  Big Idea #1: Develop understanding of statistical variability**  **Topic: Variability, Distributions, and Relationships Between Quantities** | | |
| **Standards: Additional Content**  **(Identified by PARCC Content Frameworks)**  6.SP.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.  (EnVision Topic 15)  6.SP.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.  (EnVision Topic 15, 16)  6.SP.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.  (EnVision Topic 15)  6.SP.5 Summarize numerical data sets in relation to their context, such as by:  c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute  deviation), as well as describing any overall pattern and any striking deviation from the overall pattern with reference to  the context in which the data were gathered.  d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which  the data were gathered.  (EnVision Topic 15, 16) | **GOAL** | |
| NJ DOE Unit 4: Students will represent and analyze quantitative relationships between dependent and independent variables, develop understanding of statistical variability, summarize and describe distributions, understand ration concepts and use ratio reasoning to solve problems, and apply and extend previous understandings of numbers to the system of rational numbers. | |
| **Essential Questions Assessments** | |
| 1. What is a characteristic of a statistical question? 2. How can you describe a set of data collected to answer a statistical question? 3. How is a measure of variation described? | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Calculate, compare, and interpret measures of center and variability in a data set to answer a statistical question. (Including median, mean, interquartile range, mean absolute deviation and overall pattern). | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 4 –  Big Idea #2: Represent and analyze quantitative relationships between dependent and independent variables**  **Topic: Variability, Distributions, and Relationships Between Quantities** | | |
| **Standards: Major Content**  **(Identified by PARCC Content Frameworks)**  6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.  (EnVision Topic 5) | **GOAL** | |
| NJ DOE Unit 4: Students will represent and analyze quantitative relationships between dependent and independent variables, develop understanding of statistical variability, summarize and describe distributions, understand ration concepts and use ratio reasoning to solve problems, and apply and extend previous understandings of numbers to the system of rational numbers. | |
| **Essential Questions Assessments** | |
| 1. Represent two quantities in a real world problem that change in relationship to one another. | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Use variables to represent two quantities that change in relationship to one another in a real world problem and write an equation to express one quantity, thought of as the dependent variable, in terms of another quantity, thought of as the independent variable. 2. Analyze the relationship between the dependent and independent variables in an equation using graphs and tables. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |
| **QUARTER 4 –  Big Idea #3: Summarize and describe distributions**  **Topic: Variability, Distributions, and Relationships Between Quantities** | | |
| **Standards: Additional Content**  **(Identified by PARCC Content Frameworks)**  6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.  (EnVision Topic 15, 16)  6.SP.5 Summarize numerical data sets in relation to their context, such as by:  a. Reporting the number of observations.  b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.  (EnVision Topic 15, 16) | **GOAL** | |
| NJ DOE Unit 4: Students will represent and analyze quantitative relationships between dependent and independent variables, develop understanding of statistical variability, summarize and describe distributions, understand ration concepts and use ratio reasoning to solve problems, and apply and extend previous understandings of numbers to the system of rational numbers. | |
| **Essential Questions Assessments** | |
| 1. Describe how to display plots on a number line to represent numerical data. 2. Summarize and explain numerical data sets in relation to their context. | Formative:  questioning, discussion, exit slip, graphic organizers, self -assessment, polling, individual white boards  Summative:  diagnostic test, quick check, multiple-choice topic test, free-response topic test, performance assessment, cumulative test, benchmark test |
| **Enduring Understanding Resources** | |
| 1. Display numerical data in plots on the number line (including dot plots, histograms, and box plots) and summarize in relation to their context. | EnVision Math Series 2.0, Pearson, 2016  Student manipulatives  Pearson Success Net (online tools)  Math Instructional Coach  Compass Learning Odyssey |