

Orange Public Schools

Office of Curriculum & Instruction
2019-2020 Mathematics Curriculum Guide



Newcomers Academy

Grades 6 & 7 Mathematics

Pacing Guide

2019 - 2020

ORANGE TOWNSHIP BOARD OF EDUCATION

Tyrone Tarver
President

Brenda Daughtry
Vice President

Members

Guadalupe Cabido
Shawneque Johnson

Sueann Gravesande
Cristina Mateo
Jeffrey Wingfield

Derrick Henry
Siaka Sherif

SUPERINTENDENT OF SCHOOLS

Gerald Fitzhugh, II, Ed.D.

BUSINESS ADMINISTRATOR/BOARD SECRETARY

Adekunle O. James

EXECUTIVE DIRECTOR OF HUMAN RESOURCES

Glasshebra Jones-Dismuke

DIRECTORS

Karen Harris, *English Language Arts/Testing*
Tina Powell, Ed.D., *Math/Science*

Shelly Harper, *Special Services*
Terri Russo, D.Litt., *Curriculum & Instruction*

SUPERVISORS

Olga Castellanos, *Math (K-4)*
Meng Li Chi Liu, *Math (9-12)*
Daniel Ramirez, *Math (5-8)*
Donna Sinisgalli, *Visual & Performance Arts*
Kurt Matthews, *ELA (8-12) & Media Specialist*
Linda Epps, *Social Studies (5-12) / Tech Coordinator*
Tia Burnett, *Testing*
Jahmel Drakeford, *CTE (K-12)/ Health & Phys Ed*

Janet McCloudden, Ed.D., *Special Services*
Rosa Lazzizzera, *ELA (3-7) & Media Specialist*
Adrianna Hernandez, *ELA (K-2) & Media Specialist*
Frank Tafur, *Guidance*
Henie Parillon, *Science (K-12)*
Caroline Onyesonwu, *Bilingual/ ESL & World Lang*
David Aytas, *STEM Focus (8-12)*
Amina Mateen, *Special Services*

PRINCIPALS

Faith Alcantara, *Heywood Avenue School*
Yancisca Cooke, Ed.D., *Forest St. Comm School*
Robert Pettit, *Cleveland Street School (OLV)*
Cayce Cummins, Ed.D., *Newcomers Academy*
Debra Joseph-Charles, Ed.D., *Rosa Parks Comm School*
Denise White, *Oakwood Ave. Comm School*

Jason Belton, *Orange High School*
Jacquelyn Blanton, *Orange Early Childhood Center*
Dana Gaines, *Orange Prep Academy*
Myron Hackett, Ed.D., *Park Ave. School*
Karen Machuca, *Scholars Academy*
Erica Stewart, Ed.D., *STEM Academy*
Frank Iannucci, Jr., *Lincoln Avenue School*

ASSISTANT PRINCIPALS

Carrie Halstead, *Orange High School*
Mohammed Abdelaziz, *Orange High/ Athletic Director*
Oliverto Agosto, *Orange Prep Academy*
Terence Wesley, *Rosa Parks Comm School*
Samantha Sica-Fossella, *Orange Prep. Academy*
Kavita Cassimiro, *Orange High School*
Lyle Wallace, *Twilight Program*
Isabel Colon, *Lincoln Avenue School*

Nyree Delgado, *Forest Street Comm School*
Devonii Reid, Ed.D., *STEM Academy*
Joshua Chuy, *Rosa Parks Comm School*
Gerald J. Murphy, *Heywood Ave School*
Shadin Belal, Ed. D. *Orange Prep Academy*
April Stokes, *Park Avenue School*
Noel Cruz, *Dean of Students/Rosa Parks Comm School*
Patrick Yearwood, *Lincoln Avenue School*

Language Acquisition: Money (Eureka Math)

8 Instructional Days

Module/Unit	Topic	Lesson	Student Lesson Objective / Supportive Videos
Grade 2 Module 7: Length, Money, & Data	Topic B: Problem Solving with Coins And Bills	Lesson 6	Recognize the value of coins and count up to find their total value https://www.youtube.com/watch?v
		Lesson 7	Solve word problems involving the total value of a group of coins. https://www.youtube.com/watch?v
		Lesson 8	Solve word problems involving the total value of a group of bills https://www.youtube.com/watch?v
		Lesson 9	Solve word problems involving different combinations of coins with the same total value https://www.youtube.com/watch?v
		Lesson 10	Use the fewest number of coins to make a given value https://www.youtube.com/watch?v
		Lesson 11	Use different strategies to make \$1 or make change from \$1. https://www.youtube.com/watch?v
		Lesson 12	Solve word problems involving different ways to make change from \$1 https://www.youtube.com/watch?v
		Lesson 13	Solve two-step word problems involving dollars or cents with totals within \$100 or \$1 https://www.youtube.com/watch?v

Language Acquisition: Time (Eureka Math)

9 Instructional Days

Module/Unit	Topic	Lesson	Student Lesson Objective / Supportive Videos
Grade 2 Module 8: Time, Shapes, Fractions	Topic D: Applicatio n of Fractions to Tell Time	Lesson 13	Construct a paper clock by partitioning a circle into halves and quarters, and tell time to the half hour or quarter hour. https://www.youtube.com/watch?v
		Lesson 14	Tell time to the nearest five minutes https://www.youtube.com/watch?v
		Lesson 15	Tell time to the nearest five minutes; relate a.m. and p.m. to time of day https://www.youtube.com/watch?v
		Lesson 16	Solve elapsed time problems involving whole hours and a half hour https://www.youtube.com/watch?v
Grade 3 Module 2: Place Value and Problem Solving with Units of Measure	Topic A: Time Measur ement and Problem Solving	Lesson 1	Explore time as a continuous measurement using a stopwatch.
		Lesson 2	Relate skip-counting by 5 on the clock and telling time to a continuous measurement model, the number line. https://www.youtube.com/watch?v
		Lesson 3	Count by fives and ones on the number line as a strategy to tell time to the nearest minute on the clock. https://www.youtube.com/watch?v
		Lesson 4	Solve word problems involving time intervals within 1 hour by counting backward and forward using the number line and clock
		Lesson 5	Solve word problems involving time intervals within 1 hour by adding and subtracting on the number line. https://www.youtube.com/watch?v

Language Acquisition: Shapes (Eureka Math)

9 Instructional Days

Module/Unit	Topic	Lesson	Student Lesson Objective / Supportive Videos
Grade 2 Module 8: Time, Shapes, Fractions	Topic A: Attributes of Geometric Shapes	Lesson 1	Describe two-dimensional shapes based on attributes. https://www.youtube.com/watch?v
		Lesson 2	Build, identify, and analyze two-dimensional shapes with specified attributes. https://www.youtube.com/watch?v
		Lesson 3	Use attributes to draw different polygons including triangles, quadrilaterals, pentagons, and hexagons. https://www.youtube.com/watch?v
		Lesson 4	Use attributes to identify and draw different quadrilaterals including rectangles, rhombuses, parallelograms, and trapezoids. https://www.youtube.com/watch?v
		Lesson 5	Relate the square to the cube, and describe the cube based on attributes https://www.youtube.com/watch?v
Grade 3 Module 7: Geometry and Measurement Word Problem	Topic B: Attributes of Two- Dimensional Figures	Lesson 4	Compare and classify quadrilaterals. https://www.youtube.com/watch?v
		Lesson 5	Compare and classify other polygons. https://www.youtube.com/watch?v
		Lesson 6	Draw polygons with specified attributes to solve problems. https://www.youtube.com/watch?v
		Lesson 7	Reason about composing and decomposing polygons using tetrominoes. https://www.youtube.com/watch?v

Language Acquisition: Measurement (Eureka Math)

5 Instructional Days

Module/Unit	Topic	Lesson	Student Lesson Objective/ Supportive Videos
Grade 2 Module 2: Addition and Subtraction of Length Units	Topic A: Understand Concepts about the Ruler	Lesson 1	Connect measurement with physical units by using multiple copies of the same physical unit to measure https://www.youtube.com/watch?v
		Lesson 2&3	Use iteration with one physical unit to measure. Apply concepts to create unit rulers and measure lengths using unit rulers https://www.youtube.com/watch?v https://www.youtube.com/watch?v
	Topic B: Measure and Estimate Length Using Different Measurement Tools	Lesson 4 & 5	Measure various objects using centimeter rulers and meter sticks Develop estimation strategies by applying prior knowledge of length and using mental benchmarks https://www.youtube.com/watch?v https://www.youtube.com/watch?v
	Topic C: Measure and Compare Lengths Using Different Length Units	Lesson 6	Measure and compare lengths using centimeters and meters https://www.youtube.com/watch?v
		Lesson 7	Measure and compare lengths using standard metric length units and non-standard length units; relate measurement to unit size https://www.youtube.com/watch?v

Content Focus: Introducing Rates (Illustrative Math)

19 Instructional Days

Module/Unit	Topic	Lesson	Lesson Titles
Grade 6 Unit 2: Introducing Rates	Topic A: What are Ratios?	Lesson 1	Introducing Ratios and Ratio Language
		Lesson 2	Representing Ratios with Diagrams
	Topic B: Equivalent Ratios	Lesson 3	Recipes
		Lesson 4	Color Mixtures
		Lesson 5	Defining Equivalent Ratios
	Topic C: Representing Equivalent Ratios	Lesson 6	Introducing Double Number Line Diagrams
		Lesson 7	Creating Double Number Line Diagrams
		Lesson 8	How much for one?
		Lesson 9	Constant Speed
		Lesson 10	Comparing Situations by Examining Ratios
	Topic D: Solving Ratio and Rate Problems	Lesson 11	Representing Ratios with Tables
		Lesson 12	Navigating a Table of Equivalent Ratios
		Lesson 13	Tables and Double Number Lines
		Lesson 14	Solving Equivalent Ratio Problems
	Topic E: Part-part- whole Ratios	Lesson 15	Part-Part-Whole Ratios
		Lesson 16	Solving More Ratio Problems
		Lesson 17	A Fermi Problem

Content Focus: Unit Rates and Percentages (Illustrative Math)

19 Instructional Days

Module/Unit	Topic	Lesson	Lesson Titles
Grade 6 Unit 3: Unit Rates and Percentages	Topic A: Burj Khalifa	Lesson 1	The Burj Khalifa
	Topic B: Unit Conversion	Lesson 2	Anchoring Units of Measurement
		Lesson 3	Measuring with Different-Sized Units
		Lesson 4	Converting Units
	Topic C: Rates	Lesson 5	Comparing Speeds and Prices
		Lesson 6	Interpreting Rates
		Lesson 7	Equivalent Ratios Have the Same Unit Rates
		Lesson 8	More about Constant Speed
		Lesson 9	Solving Rate Problems
	Topic D: Percentages	Lesson 10	What are Percentages?
		Lesson 11	Percentages and Double Number Lines
		Lesson 12	Percentages and Tape Diagrams
		Lesson 13	Benchmark Percentages
		Lesson 14	Solving Percentage Problems
		Lesson 15	Finding This Percent of That
		Lesson 16	Finding the Percentage
		Lesson 17	Painting a Room

Content Focus: Introducing Proportional Relationships (Illustrative Math)

17 Instructional Days

Module/Unit	Topic	Lesson	Lesson Titles
Grade 7 Unit 2: Introducing Proportional Relationships	Topic A: Representing Proportional Relationships with Tables	Lesson 1	One of These Things Is Not Like the Others
		Lesson 2	Introducing Proportional Relationships with Tables
		Lesson 3	More about Constant of Proportionality
	Topic B: Representing Proportional Relationships with Equations	Lesson 4	Proportional Relationships and Equations
		Lesson 5	Two Equations for Each Relationship
		Lesson 6	Using Equations to Solve Problems
	Topic C: Comparing Proportional & Nonproportional Relationships	Lesson 7	Comparing Relationships with Tables
		Lesson 8	Comparing Relationships with Equations
		Lesson 9	Solving Problems about Proportional Relationships
	Topic D: Representing Proportional Relationships with Graphs	Lesson 10	Introducing Graphs of Proportional Relationships
		Lesson 11	Interpreting Graphs of Proportional Relationships
		Lesson 12	Using Graphs to Compare Relationships
		Lesson 13	Two Graphs for Each Relationship
		Lesson 14	Four Representations
		Lesson 15	Using Water Efficiently

Modifications	
Special Education/ 504:	English Language Learners:
<ul style="list-style-type: none"> -Adhere to all modifications and health concerns stated in each IEP. -Give students a MENU options, allowing students to pick assignments from different levels based on difficulty. -Accommodate Instructional Strategies: reading aloud text, graphic organizers, one-on-one instruction, class website (Google Classroom), handouts, definition list with visuals, extended time -Allow students to demonstrate understanding of a problem by drawing the picture of the answer and then explaining the reasoning orally and/or writing , such as Read-Draw-Write -Provide breaks between tasks, use positive reinforcement, use proximity -Assure students have experiences that are on the Concrete- Pictorial- Abstract spectrum by using manipulatives -Implement supports for students with disabilities (click here) - Make use of strategies imbedded within lessons -Common Core Approach to Differentiate Instruction: Students with Disabilities (pg 17-18) - Strategies for students with 504 plans 	<ul style="list-style-type: none"> - Use manipulatives to promote conceptual understanding and enhance vocabulary usage - Provide graphic representations, gestures, drawings, equations, realia, and pictures during all segments of instruction - During i-Ready lessons, click on “Español” to hear specific words in Spanish - Utilize graphic organizers which are concrete, pictorial ways of constructing knowledge and organizing information - Use sentence frames and questioning strategies so that students will explain their thinking/ process of how to solve word problems - Utilize program translations (if available) for L1/ L2 students - Reword questions in simpler language - Make use of the ELL Mathematical Language Routines (click here for additional information) -Scaffolding instruction for ELL Learners -Common Core Approach to Differentiate Instruction: Students with Disabilities (pg 16-17)
Gifted and Talented:	Students at Risk for Failure:
<ul style="list-style-type: none"> - Elevated contextual complexity - Inquiry based or open ended assignments and projects - More time to study concepts with greater depth - Promote the synthesis of concepts and making real world connections - Provide students with enrichment practice that are imbedded in the curriculum such as: <ul style="list-style-type: none"> ● Application / Conceptual Development ● Are you ready for more? - Provide opportunities for math competitions - Alternative instruction pathways available - Common Core Approach to Differentiate Instruction: Students with Disabilities (pg. 20) 	<ul style="list-style-type: none"> - Assure students have experiences that are on the Concrete- Pictorial- Abstract spectrum - Modify Instructional Strategies, reading aloud text, graphic organizers, one-on-one instruction, class website (Google Classroom), inclusion of more visuals and manipulatives, Peer Support - Constant parental/ guardian contact - Provide academic contracts to students & guardians - Create an interactive notebook with samples, key vocabulary words, student goals/ objectives. - Plan to address students at risk in your learning tasks, instructions, and directions. Anticipate where the needs will be, then address them prior to lessons. -Common Core Approach to Differentiate Instruction: Students with Disabilities (pg 19)

21st Century Life and Career Skills:

Career Ready Practices describe the career-ready skills that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

<https://www.state.nj.us/education/cccs/2014/career/9.pdf>

- | | |
|--|--|
| <ul style="list-style-type: none">● 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. | <ul style="list-style-type: none">● 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. |
|--|--|

Students are given an opportunity to communicate with peers effectively, clearly, and with the use of technical language. They are encouraged to reason through experiences that promote critical thinking and emphasize the importance of perseverance. Students are exposed to various mediums of technology, such as digital learning, calculators, and educational websites.

Technology Standards:

All students will be prepared to meet the challenge of a dynamic global society in which they participate, contribute, achieve, and flourish through universal access to people, information, and ideas.

<https://www.state.nj.us/education/cccs/2014/tech/>

8.1 Educational Technology:

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

- A. **Technology Operations and Concepts:** Students demonstrate a sound understanding of technology concepts, systems and operations.
- B. **Creativity and Innovation:** Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
- C. **Communication and Collaboration:** Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
- D. **Digital Citizenship:** Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
- E. **Research and Information Fluency:** Students apply digital tools to gather, evaluate, and use of information.
- F. **Critical thinking, problem solving, and decision making:** Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

- A. **The Nature of Technology: Creativity and Innovation-** Technology systems impact every aspect of the world in which we live.
- B. **Technology and Society:** Knowledge and understanding of human, cultural, and societal values are fundamental when designing technological systems and products in the global society.
- C. **Design:** The design process is a systematic approach to solving problems.
- D. **Abilities in a Technological World:** The designed world in a product of a design process that provides the means to convert resources into products and systems.
- E. **Computational Thinking: Programming-** Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.

Interdisciplinary Connections:	
English Language Arts:	
L.6.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
SL.6.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
W.6.1	Write arguments to support claims with clear reasons and relevant evidence.
Interdisciplinary Connections:	
English Language Arts:	
L.7.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
SL.7.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.
W.7.1	Write arguments to support claims with clear reasons and relevant evidence.