Office of Curriculum & Instruction
2019-2020 Mathematics Curriculum Guide

Newcomers Academy

Grade 3 Mathematics
Pacing Guide
2019-2020

			Money			

Module	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

Time			
Grade 2 Module 8: Time, Shapes, Fractions	**Topic D:** Application 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 Vale and Problem Solving with Units of Measure	**Topic A:** Time Measurement 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

Geometry

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

			Measurement
	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

Grade 3 Module 1: Properties of Multiplication and Division Solving Problems with Units 2-5 and 10 All Topics		
Topic	**Lesson**	**Lesson Objective/ Supportive Videos**
Topic A: Multiplication and the Meaning of the Factors	Lesson 1	Understand *equal groups* of as multiplication. https://www.youtube.com/watch?v
	Lesson 2	Relate multiplication to the array model. https://www.youtube.com/watch?v
	Lesson 3	Interpret the meaning of factors – the size of the group or the number of groups. https://www.youtube.com/watch?v
Topic B: Division as an Unknown Factor Problem	Lesson 4	Understand the meaning of the unknown as the size of the group in division. https://www.youtube.com/watch?v
	Lesson 5	Understand the meaning of the unknown as the number of groups in division. https://www.youtube.com/watch?v
	Lesson 6	Interpret the unknown in division using the array model. https://www.youtube.com/watch?v
Topic C: Multiplication Using Units of 2 and 3	Lesson 7	Demonstrate the commutativity of multiplication and practice related facts by skip-counting objects in array models. https://www.youtube.com/watch?v
	Lesson 8	Demonstrate the commutativity of multiplication and practice related facts by skip-counting objects in array models. https://www.youtube.com/watch?v
	Lesson 9	Find related multiplication facts by adding and subtracting equal groups in array models. https://www.youtube.com/watch?v
	Lesson 10	Model the distributive property with arrays to decompose units as a strategy to multiply. https://www.youtube.com/watch?v

Topic	Lesson	Description
Topic D: Division Using Units of 2 and 3	Lesson 11	Model division as the unknown factor in multiplication using arrays and tape diagrams. https://www.youtube.com/watch?v
	Lesson 12/13	Interpret the quotient as the number of groups or the number of objects in each group using units of 2 and 3. https://www.youtube.com/watch?v https://www.youtube.com/watch?v
Topic E: Multiplication and Division Using Units of 4	Lesson 14	Skip-Count objects in models to build fluency with multiplication facts using units of 4. https://www.youtube.com/watch?v
	Lesson 15	Relate arrays to tape diagrams to model the commutative property of multiplication. https://www.youtube.com/watch?v
	Lesson 16	Use the distributive property as a strategy to find related multiplication facts. https://www.youtube.com/watch?v
	Lesson 17	Model the relationship between multiplication and division. https://www.youtube.com/watch?v
Topic F: Distributive Property and Problem Solving Using Units of 2–5 and 10	Lesson 18-19	Apply the distributive property to decompose units. https://www.youtube.com/watch?v https://www.youtube.com/watch?v
	Lesson 20	Solve two-step word problems involving multiplication and division and assess the reasonableness of answers. https://www.youtube.com/watch?v
	Lesson 21	Solve two-step word problems involving all four operations and assess the reasonableness of answers. https://www.youtube.com/watch?v

Grade 3 Module 3: Multiplication and Division with Units 0,1,6-9, and Multiples of 10		
All Topics		
Topic	**Lesson**	**Lesson Objective/ Supportive Videos**
Topic A: The Properties of Multiplication and Division	Lesson 1	Study commutativity to find known facts of 6, 7, 8, and 9. https://www.youtube.com/watch?v
	Lesson 2	Apply the distributive and commutative properties to relate multiplication facts 5 × *n* + *n* to 6 × *n* and *n* × 6 where *n* is the size of the unit. https://www.youtube.com/watch?v
	Lesson 3	Multiply and divide with familiar facts using a letter to represent the un-known. https://www.youtube.com/watch?v
Topic B: Multiplication and Division Using Units of 6 and 7	Lesson 4	Count by units of 6 to multiply and divide using number bonds to decom-pose. https://www.youtube.com/watch?v
	Lesson 5	Count by units of 7 to multiply and divide using number bonds to decom-pose. https://www.youtube.com/watch?v
	Lesson 6	Use the distributive property as a strategy to multiply and divide using units of 6 and 7. https://www.youtube.com/watch?v
	Lesson 7	Interpret the unknown in multiplication and division to model and solve problems using units of 6 and 7. https://www.youtube.com/watch?v
Topic C: Multiplication and Division Using Units up to 8	Lesson 8	Understand the function of parentheses and apply to solving problems. https://www.youtube.com/watch?v
	Lesson 9	Model the associative property as a strategy to multiply. https://www.youtube.com/watch?v
Topic D: Multiplication and Division Using Units of 9	Lesson 12	Apply the distributive property and the fact 9 = 10 − 1 as a strategy to mul-tiply. https://www.youtube.com/watch?v
	Lesson 14	Identify and use arithmetic patterns to multiply. https://www.youtube.com/watch?v
	Lesson 15	Interpret the unknown in multiplication and division to model and solve problems. https://www.youtube.com/watch?v

Topic E: Analysis of Patterns and Problem Solving Including Units of 0 and 1	Lesson 16	Reason about and explain arithmetic patterns using units of 0 and 1 as they relate to multiplication and division. https://www.youtube.com/watch?v
	Lesson 17	Identify patterns in multiplication and division facts using the multiplication table. https://www.youtube.com/watch?v
	Lesson 18	Solve two-step word problems involving all four operations and assess the reasonableness of solutions. https://www.youtube.com/watch?v
Topic F: Multiplication of Single-Digit Factors and Multiples of 10	Lesson 19	Multiply by multiples of 10 using the place value chart. https://www.youtube.com/watch?v
	Lesson 20	Use place value strategies and the associative property $n \times (m \times 10) = (n \times m) \times 10$ (where n and m are less than 10) to multiply multiples of 10. https://www.youtube.com/watch?v
	Lesson 21	Solve two-step word problems involving multiplying single-digit factors and multiples of 10. https://www.youtube.com/watch?v

Modifications	
Special Education/ 504:	**English Language Learners:**
-Adhere to all modifications and health concerns stated in each IEP. -Give students a menu of 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 in 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 -Common Core Approach to Differentiate Instruction: Students with Disabilities (pg 17-18) - Strategies for Students with 504 Plans	- 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:**

- 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:
    ● Application / Conceptual Development
    ● Are you ready for more?
- Common Core Approach to Differentiate Instruction: Students with Disabilities (pg. 20)
- Provide opportunities for math competitions
- Alternative instruction pathways available
	- 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, Field Trips, Google Expeditions, Peer Support, one on one instruction
	- Assure constant parental/ guardian contact throughout the year with successes/ challenges
	- Provide academic contracts to students/guardians
	- Create an interactive notebook with samples, key vocabulary words, student goals/ objectives.
	- Always plan to address students at risk in your learning tasks, instructions, and directions. Try to anticipate where the needs will be and 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

- **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.

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:	
RF 3.4	Read with sufficient accuracy and fluency to support comprehension.
W.3.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
SL.3.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.