	Marietta City Schools **District Unit Planner**

	Grade Level 3		
Unit Name	**Unit 6:** Fractions as Numbers	**Unit duration (Days)**	4-5 weeks

GA K-12 Standards

In this unit, students will develop an understanding of fractions as numbers with an emphasis on unit fractions. Students understand that fractions are numbers that describe the division of a whole into equal parts. Students represent fractions with models, diagrams, and number lines and use these models to compare, find, and generate equivalent fractions.

3.NR.4 Represent fractions with denominators of 2, 3, 4, 6 and 8 in multiple ways within a framework using visual models.
- **3.NR.4.1** Describe a unit fraction and explain how multiple copies of a unit fraction form a non-unit fraction. Use parts of a whole, parts of a set, points on a number line, distances on a number line and area models.
- **3.NR.4.2** Compare two unit fractions by flexibly using a variety of tools and strategies.
- **3.NR.4.3** Represent fractions, including fractions greater than one, in multiple ways.
- **3.NR.4.4** Recognize and generate simple equivalent fractions.

3.MDR.5: Solve real-life, mathematical problems involving length, liquid volume, mass, and time
- **3.MDR.5.1** Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life (dot plot only). MLT decision.
- **3.MDR.5.4** Use rulers to measure lengths in halves and fourths (quarters) of an inch and whole inch. *MLT decision.*

3. MP: Display perseverance and patience in problem solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration and expression. Seek help and apply feedback. Set and monitor goals.
- **MP.1** Make sense of problems and persevere in solving them.
- **MP.2** Reason abstractly and quantitatively.
- **MP.3** Construct viable arguments and 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.

The [Framework for Statistical Reasoning](#) and the [Mathematical Modeling Framework](#) should be taught throughout the units. The [K-12 Mathematical Practices](#) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

Essential Questions

- (3.NR.4.1) What are the important features of a unit fraction?
- (3.NR. 4) How are fractions used in problem-solving situations?
- (3.NR.4.2) How can I compare fractions?
- (3.NR.4.3) What relationships can I discover about fractions?
- (3.NR.4.4) How can equivalent fractions be generated using patterns and known facts?

Tier II Vocabulary Words- High Frequency Multiple Meaning	**Tier III Vocabulary Words-** Subject/ Content Related Words
compare, greater than, less than, equivalent, distance, number line, point, area model, shaded, sections, line plot, length, measure, ruler, halves, quarters, fourths, nearest	numerator, denominator, partition, fraction, mixed number, unit fraction, non-unit fraction [K-12 Mathematics Glossary](#)

Assessments

Formative Assessment(s):	**Summative Assessment:**
● 3.NR.4 Savvas Topic 12 Assessment ● 3.NR.4.1 MIP Fraction Sundaes, p .212-213 ● 3.NR.4.1 MCS Mini ● 3.NR.4.2 and 3.NR.4.4 Savvas Topic 13 Assessment ● 3.NR.4.2 MIP Module 10 Formative Assessment, p 236 ● 3.NR.4.4 MCS Mini	● [MCS Unit 6 Grade 3 Summative Assessment](#)

It is the responsibility of each schools' grade level PLC to identify appropriate instructional lessons and resources, based on data and student needs, using the suggested pacing duration. The following learning tasks have been vetted to align to the standards included in this unit. The GA Dept. of Education strongly recommends that any additional tasks, resources, and/or assessments used for instruction should be vetted using the [Quality Assurance Rubric](#), to ensure alignment to the state standards.

Objective or Content	Learning Experiences		Differentiation Considerations

3.NR.4 Represent fractions with denominators of 2, 3, 4, 6 and 8 in multiple ways within a framework using visual models.	**GA DOE Learning Plans**	**MCS Curriculum Resources**	Hot Stuff: Find unit fractions of regions.

GA DOE Learning Plans

Mathematical Modeling/The Dining Experience:
In this learning plan, students will engage in an interdisciplinary mathematical modeling task that focuses on concepts of fractions. (Suggested TImeframe: Integrated throughout the entire unit)
- Teacher Guidance
- Student Reproducibles

Building Fractions:
In this learning plan, students will explore unit and non-unit fractions by creating area models. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

Pattern Block Fractions:
*Also Includes 3.PAR.2 and 3.MDR.5
In this learning plan, students will engage in counting collections, a structured opportunity for children to count a collection of objects. After students count the objects in their collection, they record how they counted. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

Exploring Cuisenaire Rods:
In this learning plan, students will use Cuisenaire rods to explore fractional relationships. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

Fractions on a Number Line:
In this learning plan, students will represent unit and non-unit fractions on a number line while recognizing and generating

MCS Curriculum Resources

MIP Module 8: Understanding Fractions and Fraction Notation
The key ideas focused on in this module include understanding what fractions are, being able to represent fractions using area models, number lines, and set models. It also includes understanding the meaning of the numerator and denominator in reading and writing fractions.
- Connecting to Geometry, p. 196-197
- Fraction kits, p. 197-198
- Pattern Block Explorations, p. 198
- Examples and Nonexamples, p199
- Geoboard Fractions, p. 202
- Creating Fraction Number Lines, p. 203-207
- Sticky Note Number Line Puzzles, p. 207-208
- Additional Ideas for support and Practice, p. 209-210
- Color Tile Fraction, p. 210-211
- Towers of Cubes, p. 212

MIP Module 9: Exploring Fraction Equivalence
The key ideas focused on in this module include using area, number line, and set models to visualize and explore fraction equivalence. It also includes understanding that whole numbers can be expressed as fractions.
- Fold and Explore, p. 216-217
- Fraction Kit Equivalence, p. 217-218
- Fraction Arrays, p. 218-220
- Sticky Note Number Lines, p. 220
- Equivalent Wholes, p. 221-222
- Yummy Brownies, p. 223
- Number Line Equivalence, p. 223
- Name My Array, p. 223
- Jump, Kangaroo, Jump, p. 224
- Talk About It/Write About It , p. 224
- Fraction Pizzas, p. 226
- Red Light, Green Light Challenge, p. 227

Differentiation Considerations

Hot Stuff: Find unit fractions of regions.

Making Fractions with Geoboards: Use geoboards to create fractions of regions.

Who Has More Cake?: Order and compare unit fractions.

Fractions on a Number Line: Position fractions, including fractions greater than one, on a number line.

Trains: Place unit fractions greater than one on a number line.

equivalent fractions. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

Sweet Treats:
In this learning plan, students will generate and compare unit fractions using length models. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

Birthday Bash:
In this learning plan, students will explore fractions of a set. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

Fractions Greater than One:
In this learning plan, students will use Cuisenaire rods and number lines to explore fractions greater than one. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

Pizza! Pizza!:
In this learning plan, students fill pizza orders by representing the ordered ingredients on the appropriate fractional parts of a pizza cut-out. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

Fractions as Whole Numbers:
In this learning plan, students use number lines and pattern blocks to explore fractions as whole numbers. (Suggested Timeframe 2-3 days)
- Teacher Guidance
- Student Reproducibles

MIP Module 10: Comparing Fractions
The key ideas focused on in this module include using an understanding of fractions to compare fractions with like denominators, using an understanding of fractions to compare fractions with like numerators, and understanding that when comparing fractions the whole must be the same.
- Same Denominator/Different Numerator, p. 231
- Order, Order, p .232-233
- More than 1/2 or Less than 1/2?, p. 234-235
- Additional Ideas for Support and Practice, p. 238-239

SAVVAS enVision Topic 12: Understand Fractions as Numbers
In Topics 12–13, students develop an understanding of fractions including unit fractions and equivalent fractions. They represent measurement data involving fractions on a line plot.
- Lesson 12-1: Partition Regions into Equal Parts
- Lesson 12-2: Fractions and Regions
- Lesson 12-3: Understand the Whole
- Lesson 12-4: Number Line: Fractions Less Than 1
- Lesson 12-5: Number Line: Fractions Greater Than 1

SAVVAS enVision Topic 13: Fraction Equivalence and Comparison
In Topics 12–13, students develop an understanding of fractions including unit fractions and equivalent fractions. They represent measurement data involving fractions on a line plot.
- Lesson 13-1: Equivalent Fractions: Use Models
- Lesson 13-2: Equivalent Fractions: Use the Number Line
- Lesson 13-3: Use Models to Compare Fractions: Same Denominator
- Lesson 13-4: Use Models to Compare Fractions: Same Numerator
- Lesson 13-5: Compare Fractions: Use Benchmarks
- Lesson 13-6: Compare Fractions: Use the Number Line
- Lesson 13-7: Whole Numbers and Fractions

	Going the Distance:	● Lesson 13-8: Problem Solving: Construct Arguments	
	In this learning plan, students will use number lines to explore equivalent fractions and fractions greater than 1. (Suggested Timeframe 2-3 days)		
	● Teacher Guidance		
	● Student Reproducibles		

Content Resources

MCS Links:
- MCS Math Curriculum Map
- MCS Math Instructional Framework

GA DOE Links:
Access all GADOE Curriculum Resources at the following site: GaDOE Inspire.

Additional Resources:
- Mathigon (Fraction Bars)
- Toy theater (Virtual manipulatives)
- K5 Math Learning (Fractions)
- Greg Tang Math

Possible Number Sense and Strategy-Development Routine
- Estimation 180
- Which one Doesn't belong
- Fraction Splat - Instant multiple splats
- Same or Different (Fractions)

Mathematical Discourse:
- ESOL Math Talk Starters
- Sentence Stems