Marietta City Schools

2024–2025 District Unit Planner

Grade 6 Mathematics

Unit title	Unit 2: Making Relevant Connections through Number System Fluency	MYP year	1	Unit duration (hrs)	20 Hours

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): *What will students learn?*

GA DoE Standards

Standards

6.NR.1: Solve relevant, mathematical problems involving operations with whole numbers, fractions, and decimal numbers.

6.NR.1.1 Fluently add and subtract any combination of fractions to solve problems.

6.NR.1.2 Multiply and divide any combination of whole numbers, fractions, and mixed numbers using a student-selected strategy. Interpret products and quotients of fractions and solve word problems.

6.NR.1.3 Perform operations with multi-digit decimal numbers fluently using models and student-selected strategies.

6.NR.2 Apply operations with whole numbers, fractions and decimals within relevant applications.

6.NR.2.1 Describe and interpret the center of the distribution by the equal share value (mean).
6.NR.2.4 Design simple experiments and collect data. Use data gathered from realistic scenarios and simulations to determine quantitative measures of center (median and/or mean) and variability (interquartile range and range). Use these quantities to draw conclusions about the data, compare different numerical data sets, and make predictions.

Concepts/Skills to support mastery of standards

Expectations		Evidence of Student Learning (not all inclusive; see Grade Level Overview for more details)		
6.NR.1.1	Fluently add and subtract any combination of fractions to solve problems.	**Terminology** • Fluently/Fluency – Students choose flexibly among methods and strategies to solve mathematical problems accurately and efficiently.	**Strategies and Methods** • Students should be able to use numerical reasoning to interpret applicable, mathematical situations involving fractions. • Students should be given the opportunity to apply reasoning strategies while solving problems. • Students may solve problems in different ways and have the flexibility to choose a mathematical strategy that allows them to make sense of and strategically solve problems using efficient methods that are most comfortable for and makes sense to them.	**Age/Developmentally Appropriate** • Students should be allowed to choose an appropriate strategy to demonstrate fluency.
6.NR.1.2	Multiply and divide any combination of whole numbers, fractions, and mixed numbers using a student-selected strategy. Interpret products and quotients of fractions and solve word problems.	**Strategies and Methods** • Students should be able to utilize fractions with denominators including 2, 3, 4, 5, 6, 8, 10, and 12. • Students should be able to use numerical reasoning to interpret applicable, mathematical situations involving fractions. • Students can use a variety of strategies, including but not limited to concrete models, visual fraction models, student-generated strategies, a standard algorithm, or other strategies based on numerical reasoning to represent and solve problems. • Students should be given the opportunity to apply reasoning strategies and use written methods that make sense to them. • Students should use flexible, accurate, and efficient written methods to express computational thinking based on numerical reasoning and sense-making developed from learning experiences that focus on the numbers as quantities. • Students may solve problems in different ways and have the flexibility to choose a mathematical strategy that allows them to make sense of and strategically solve problems using efficient methods that are most comfortable for and makes sense to them.	**Fundamentals** • Students should use their understanding of equivalency to flexibly reason with equivalent fractions based on the context of the problem. Simplifying fractions is not an expectation of this grade level. • Students should be able to use the meanings of fractions, multiplication, division and the inverse relationship between multiplication and division to make sense of multiplying and dividing fractions.	**Example** • How many $\frac{3}{4}$-cup servings are in $\frac{2}{3}$ of a cup of yogurt?

6.NR.1.3	Perform operations with multi-digit decimal numbers fluently using models and student-selected strategies.	**Fundamentals** • Fluently/Fluency – Students choose flexibly among methods and strategies to solve mathematical problems accurately and efficiently.	**Strategies and Methods** • Students should be able to use a variety of part-whole strategies to compute efficiently (area model, partial product, partial quotient). • The part-whole strategies used should be flexible and extend from previous computation strategies and future work with computation. • Students should use models and student-selected strategies as an efficient written method of demonstrating place value understanding for each operation (addition, subtraction, multiplication, and division). • Students may solve problems in different ways and have the flexibility to choose a mathematical strategy that allows them to make sense of and strategically solve problems using efficient methods that are most comfortable for and makes sense to them.	**Terminology** • Decimal number – a number whose whole number part and fractional part are separated by a decimal point.
6.NR.2.1	Describe and interpret the center of the distribution by the equal share value (mean).	**Age/Developmentally Appropriate** • The concept of mean should be explored visually and conceptually before introducing the formula. • This is the beginning of the progression of the concept of measures of center and will continue to be developed in 6th grade.	**Strategies and Methods** • Students should be given the opportunity to use manipulatives such as: snap cubes, tiles, etc...to model equal share value.	**Example** • "If we combined all of the 5th grade students' candies and shared them equally with each student so everyone has the same number of candies." (This is the mean or equal share value.)

		(symmetrical vs non-symmetrical). • Data sets can be limited to no more than 10 data points when exploring the mean absolute deviation. • Students should be able to describe the nature of the attribute under investigation, including how it was measured and its units of measurement.			MAD; Arthur has less variability than Aaron.
6.NR.2.4	Design simple experiments and collect data. Use data gathered from realistic scenarios and simulations to determine quantitative measures of center (median and/or mean) and variability (interquartile range and range). Use these quantities to draw conclusions about the data, compare different numerical data sets, and make predictions.	**Fundamentals** • Students should be able to use quantitative measures of center and variability to draw conclusions about data sets and make predictions based on comparisons. • Students should be able to identify that each quartile represents 25% of the data set.		**Strategies and Methods** • Students should apply understanding of the measures of center (mean, median) and variability (interquartile range and range) to determine quantitative measures of center and variability, draw conclusions about the data, compare different-numerical data sets and make predictions using data gathered from realistic scenarios and simulations.	

Vocabulary:

Algorithm	Quotient	Reciprocal	Skewed Data	Subtrahend	Product
Difference	Dividend	Divisor	Factor	Mean	Sum
Measurement Model of Division	Median	Multiple	Partitive Model of Divisions		

Key concept	Related concept(s)	Global context
Logic A method of reasoning and a system of principles used to build arguments and reach conclusions	Model Representation	Globalization and Sustainability Population and demography

Statement of inquiry
Making decisions can be improved by using a model to represent relationships.

Inquiry questions

Factual:

- How do you add or subtract decimals?
- How do you divide whole numbers and decimals?
- How do you divide a fraction by a fraction?

Conceptual:

- How do you use decimal operations to solve real-world problems?
- How are decimal/fraction operations similar to whole number operations?
- In what situations do we use division in our lives?
- When is it useful to decompose a number?

Debatable:

- Does being fluent in operations with decimal operations make our everyday lives easier?

MYP Objectives	Assessment Tasks	
What specific MYP __objectives__ will be addressed during this unit?	*Relationship between summative assessment task(s) and statement of inquiry:*	*List of common formative and summative assessments.*

| Criterion A: Knowing and Understanding

Criterion D: Applying Mathematics in Real-life Contexts | Students will use models to represent the relationship between whole numbers, fractions and decimals after performing the four basic operations. | **Formative Assessment(s):**

Unit 2 CFA

Topic 1 Performance Assessment Form A (Volunteer Food Bank/ Bean Soup Recipe)

Summative Assessment(s):

Unit 2 Test |
|---|---|---|

Approaches to learning (ATL)

Category: Social
Cluster: Collaboration Skills
Skill Indicator:
- Give and receive meaningful feedback.

<table>
<tr><td colspan="3" align="center"><u>Learning Experiences</u>
Add additional rows below as needed.</td></tr>
<tr><td align="center">Objective or Content</td><td align="center">Learning Experiences</td><td align="center">Personalized Learning and Differentiation</td></tr>
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6.NR.1.3 Perform using operations with multi-digit decimals numbers fluently using models and student-selected strategies.

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<u>Topic 1 Mid Topic Performance Task pg. 26</u>
<u>Savvas Resource</u>
In this learning plan, students will build upon their understanding of adding, subtracting, multiplying, and dividing multi-digit decimals.
The learning goals are:

Fluently divide multi-digit numbers using the standard algorithm.
Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

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This activity can be implemented using stations and strategically grouped students. Teachers can provide scaffolded questioning to groups needing more support.
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<tr><td colspan="3" align="center">Content Resources</td></tr>
<tr><td colspan="3">
DOE Unit 2

Savvas
Savvas Topic 1

Intervention Tasks (DOE)

Additional Resources
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