Marietta City Schools

District Unit Planner

Everything on the unit planner must be included on the unit curriculum approval statement.

Honors Grade 6 Mathematics

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

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

6.MP.1-8
MCS.Gifted.S2 Students will develop and utilize creative thinking through a variety of products and problem solving.
MCS.Gifted.S3C Use a variety of strategies for solving authentic, complex, real world problems through evaluative thinking and the engineering design processes.
MCS.Gifted.S4B Recognize and examine the value of others strengths, thoughts, ideas, and feelings during collaboration.
MCS.Gifted.S4D Respectfully collaborate and effectively communicate exchanges of constructive/critical feedback.
MCS.Gifted.S6 Students will become self-directed, independent learners.

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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: K12 Mathematics Glossary

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

Key concept	Related concept(s)	Global context
Logic	Model Representation	Globalization and Sustainability

Statement of inquiry

Problems can be solved using a variety of strategies.

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.*

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Criterion A: Knowing and Understanding Criterion D: Applying Mathematics in Real-life Contexts	Students are encouraged to use a variety of strategies to solve problems encountered in the tasks.	**Formative Assessment(s):** Unit 2 CFA **Summative Assessment(s):** Unit 2 Summative unit test MYP Task: Mercedes Benz Task
Approaches to learning (ATL)		
Category: Social **Cluster:** Collaboration **Skill Indicator:** ● Take responsibility for one's own actions ● Manage and resolve conflict and work collaboratively in teams ● Listen actively to other perspectives and ideas ● Encourage others to contribute		

Learning Experiences Add additional rows below as needed.		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation**
6.NR.2 Apply operations with whole numbers, fractions and decimals within relevant applications.	**How Many Staples?** *Illustrative Mathematics* This task provides an opportunity for students to use division to solve a real-world problem. There are several ways students can approach this task which will provide the teacher and students an opportunity for rich mathematical discussion. This task would fall on the Adaptation quadrant of the Rigor and Relevance framework because students must analyze and evaluate the correctness of a real-life staple package and then design a more accurate package.	This task has two versions. Version 1 does not have scaffolds and should be used with students who have shown mastery of the standard. Version 2 has explicit scaffolds for students who need support to accomplish the task. Teachers should assign versions based on student data from previous work with the standard.
6.NR.1 Solve relevant, mathematical problems involving operations with whole numbers, fractions, and decimal numbers.	**Exploring Fraction Division** In this learning plan, students will explore dividing fractions by representing various expressions and looking for patterns in repeated reasoning. A variety of instructional formats could be implemented in this lesson including a “number talks” format, group/pair collaboration, and individual work. Students are encouraged to use diagrams to represent division of fractions, but can extend their understanding into more abstract, numeric expressions.	Teachers should group students strategically and provide scaffolds through intentional questioning. A variety of instructional strategies are implemented in this task including a “Number Talks” format as well as group collaboration in problem solving.
Content Resources		
Savvas- Topic 1 Illustrative Mathematics NCTM Illuminations GaDOE Frameworks Number Lines, Fraction Models, Visual Models, and Various Physical Manipulatives.		

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