

Math Explorations 1

Instructor(s):

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Course Description: This comprehensive course is designed to provide a solid foundation of basic mathematical concepts and skills while developing critical thinking and problem-solving abilities. Students will become prepared to learn future mathematical concepts within the resource room setting.

Course Length/Credit: 1 year/1 credit

Graduation Standards: (the number of the standard is referenced in the performance indicators listed in each unit.)

Standard 1: Reason and model quantitatively, using units and number systems to solve problems.

Unit 1	Number Systems & Operations		
Summary	In this unit, students develop an understanding of fractions and decimals, as well as their ability to perform operations with rational numbers. Students will compare and order numbers and examine the relationships between them.		
Performance Indicators Assessed in Unit	<ul style="list-style-type: none"> • MLR.QR.EA.5.6.NS.C.6 • MLR.M.QR.EA.5.6.NS.C.7c • MLR.M.QR.EA.4.6.NS.B.4 		
Understandings:		Students will know...	Students will be able to...
<ul style="list-style-type: none"> • That positive and negative numbers are used together to describe quantities having opposite directions or values. • That absolute value is its distance from 0 on the number line. • That the GCF and LCM can be used to compare numbers. • That the division of fractions is the separation of the dividend into equal groups of the divisor. • That decimals are part of a whole. 		<ul style="list-style-type: none"> • How to identify and interpret integers using a number line; how to order integers from least to greatest and use inequalities to compare integers. • How to use absolute value and magnitude to describe real-world situations. • How to graph rational numbers on vertical and horizontal lines; how to compare numbers on a numberline using GCF/LCM; and 	<ul style="list-style-type: none"> • Make sense of problems and persevere in solving them. • Model with mathematics. • Reason abstractly and quantitatively.

	<p>strategies to order numbers</p> <ul style="list-style-type: none"> • How to divide fractions with the same and unlike denominators; divide mixed numbers; divide fractions and mixed numbers, and how to use LCM and GCF to add, subtract, multiply, and divide fractions. • How to add and subtract multi-digit decimals; multiply multi-digit decimals; divide multi-digit whole numbers; divide multi-digit decimals; and solve real-world problems involving operations with multi-digit decimals. 	
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Graduation Standards: (the number of the standard is referenced in the performance indicators listed in each unit.)

Standard 1: Reason and model quantitatively, using units and number systems to solve problems.

Unit 2	• Ratio and Rate Reasoning		
Summary	In this unit, students focus on ratios and proportional relationships. They will develop an understanding of ratios, rates, proportional reasoning and be able to solve problems involving proportional relationships.		
Performance Indicators Assessed in Unit	<ul style="list-style-type: none"> • MLR.M.QR.EA.27.7.RP.A.1 • MLR.M.QR.EA.1.6.RP.A.3B • MLR.M.AR.EA.1.6.RP.A.3C 		
Understandings:		Students will know...	Students will be able to...
<ul style="list-style-type: none"> • That ratios can be represented in different contexts such as part-to-part, part-to-whole, and rates. • That there is a relationship between ratios, fractions, and percents. • That percentages can be represented as fractions and decimals. 		<ul style="list-style-type: none"> • How to write ratios; to use tables and graphs to represent ratios and rates; to use a table or double number lines to compare ratios and rates; to find and use unit rates to solve problems, and how to use equivalent ratios to solve real-world problems. • How to apply ratio reasoning to make and 	<ul style="list-style-type: none"> • Make sense of problems and persevere in solving them. • Model with mathematics. • Reason abstractly and quantitatively.

	<p>interpret circle graphs; to convert units within a measurement system; and use equivalent ratios to convert measurements between measurement systems.</p> <ul style="list-style-type: none"> • How to write a ratio as a percent; find a percent of a quantity, and how to use percents to solve real-world problems. 	
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Graduation Standards: (the number of the standard is referenced in the performance indicators listed in each unit.)

Standard 1: Reason and model quantitatively, using units and number systems to solve problems.

Unit 3	Expressions, Equations, and Inequalities
Summary	In this unit, students focus on algebraic expressions, equations, and solving equations and inequalities. Students will also apply algebraic reasoning to solve real-world problems.
Performance Indicators Assessed in Unit	<ul style="list-style-type: none"> • MLR.M.AR.EA.1.6.EE.A.2 • MLR.M.AR.EA.2.6.EE.B.8 • MLR.M.AR.EA.4.7.EE.A.1 • MLR.M.AR.EA.8.8.EE.C.7B

Understandings:	Students will know...	Students will be able to...
<ul style="list-style-type: none"> • That variables and symbols can be used to represent unknown quantities. • That like-terms and the Order of Operations are used to simplify expressions and solve equations. • That inequalities compare two quantities. • That by applying inverse operations and properties of equality they can solve multi-step equations. 	<ul style="list-style-type: none"> • How to 	<ul style="list-style-type: none"> • Make sense of problems and persevere in solving them. • Model with mathematics. • Reason abstractly and quantitatively.

Summative Assessments/Retake

- Summative assessments will count as 70% of the grade.
- Students have the opportunity to retake summative assessments.
- The student must submit a retake form to the teacher within five (5) school days

of the date that the summative assessment score is reported to the student.

- The highest score a student can receive on a retake or late assessment is a 75.
- The score achieved on a retake will replace the current score (even if the score is lower).
- If a student is making up a test from an absence, that assessment will be graded up to 100.

Make-up Work

Upon their return to school from an absence, it is the student's responsibility to secure make-up work from their teacher. The due date of the missed work will be one additional class period for each day of absence from that class or at the discretion of the teacher.

Grading of Formative Assessments

- Formative assessments will count as 30% of the grade.
- Formative assessments may be scored on either a 0-100 scale or a 0-4 scale.
- The 0-4 scale will be represented in Power School as 4=100, 3=87, 2=77, and 1=67.
- The method of scoring of formative assessments will be determined by assignment.

Finals / Midterms

An end of course Final Exam will be conducted, making up 10% of the students overall grade.