Unit 1 Reveal Grade 5

Content Area: **Math**
Course(s): **Math**
Time Period: **September**
Length: **2 weeks**
Status: **Published**

Unit overview

UNIT 1 PLANNER
Math Is...

PACING: 8 days

LESSON		MATH OBJECTIVE	LANGUAGE OBJECTIVE	SOCIAL AND EMOTIONAL LEARNING OBJECTIVE	LESSON	KEY VOCABULARY
Unit Opener	MATH Map It	Explore how many different colors are needed to color a region so that no adjacent spaces are the same color.				
						Math Terms
1-1	Math Is Mine	Students discuss the role of math in their and other people's lives.	Students talk about how to use math while answering *Wh-* questions.	Students describe their feelings and attitudes toward mathematics.	1-1	hobby
1-2	Math Is Exploring and Thinking	Students discuss approaches for making sense of a problem and determining strategies for solving it. Students look for connections among quantities.	Students talk about making sense of a problem and represent it in different ways while answering *Wh-* questions and using *another way*.	Students recognize when they feel frustration during math class.	1-2	strategy
1-3	Math Is in My World	Students consider different ways to use mathematics to represent a real-world situation.	Students explain and show real-world phenomena with mathematical models while answering *Wh-* questions and using *visualize* and *represent* as needed.	Students show appreciation for the different perspectives of their classmates.	1-3	grid model
1-4	Math Is Explaining and Sharing	Students refine their skills in constructing arguments to support their thinking. Students respond to the ideas and arguments of others.	Students discuss arguments to support their thinking while answering *Wh-* questions and using *carefully* as needed and able.	Students practice showing respect for classmates as they share ideas and thinking.	1-4	fractional
1-5	Math Is Finding Patterns	Students consider strategies for uncovering patterns and for using patterns to solve problems. Students consider efficient strategies derived from repeated reasoning.	Students talk about strategies for uncovering patterns and for using patterns to solve problems while answering *Wh-* and Yes/No questions and using the verb *can* as needed.	Students practice self-control as they learn to take turns when sharing ideas with a partner or in a group.	1-5	
1-6	Math Is Ours	Students discuss classroom norms of interaction for a productive learning environment.	Students talk about the behaviors and mindsets that contribute to a productive learning environment while answering *Wh-* and Yes/No questions and using the verb *disagree* and the adverb *respectfully* as needed.	Students make decisions about classroom norms for working productively with classmates.	1-6	
Unit Review						
Fluency Practice						

Enduring Understandings

See Above.

Essential Questions

See Above.

Instructional Strategies and Learning Activities



LESSON 1-1

Math Is Mine

Learning Targets

- I can tell my math biography.
- I can recognize the ways in which we are all doers of math.

Standards ◆ Major ▲ Supporting ● Additional

Content

○ **4.OA.C.5** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

Math Practices and Processes

MPP Make sense of problems and persevere in solving them.

MPP Construct viable arguments and critique the reasoning of others.

Focus

Content Objective	Language Objective	SEL Objective
• Students discuss the role of math in their and other people's lives.	• Students talk about how to use math while answering *Wh-* questions. • To support cultivating language, ELs participate in MLR8: Discussion Supports.	• Students describe their feelings and attitudes toward mathematics.

Coherence

Previous	Now	Next
• Students identified their superpowers and those of others.	• Students think about their own and others' math biographies. They reflect on the mindsets that help them be effective doers of math.	• Students continue to make connections between math and the real world. They increase awareness of the mindsets that help them do math.

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students understand that we each have our own math biography. Students investigate the role of math in our lives.	• Students develop proficiency with identifying their areas of strength in doing mathematics.	• Students apply their understanding of their math biography to target areas of strength in math.

LESSON 1-2

Math Is Exploring and Thinking

Learning Targets

- I can make sense of a problem and represent it in different ways.
- I can explain different ways to think about numbers.

Standards ◆ Major ▲ Supporting ● Additional

Content

○ **4.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

○ **4.NF.B.4.c** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.

Math Practices and Processes

MPP Make sense of problems and persevere in solving them.

MPP Reason abstractly and quantitatively.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students discuss approaches for making sense of a problem and determining strategies for solving it. • Students look for connections among quantities.	• Students talk about making sense of a problem and represent it in different ways while answering *Wh-* questions and using *another way*. • To support optimizing output, ELs participate in MLR7: Compare and Connect.	• Students recognize when they feel frustration during math class.

Coherence

Previous	Now	Next
• Students considered their own and others' math biographies. They reflected on the mindsets that help them be effective doers of math.	• Students discuss approaches for making sense of a problem and determining strategies for solving it. They relate ways to represent quantities.	• Students consider strategies for constructing arguments to support their ideas and solutions.

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students demonstrate understanding of the problem-solving process, with a focus on making sense of a problem and determining a viable solution plan.	• Students build proficiency with the problem-solving process.	• Students apply their understanding of the problem-solving process as they solve real-world problems.

LESSON 1-3

Math Is in My World

Learning Targets

- I can represent a real-world situation using mathematics.
- I can describe tools I can use to solve a problem.

Standards ◆ Major ▲ Supporting ● Additional

Content

○ **4.NF.B.3.d** Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

Math Practices and Processes

MPP Model with mathematics.

MPP Use appropriate tools strategically.

Focus

Content Objective	Language Objective	SEL Objective
• Students consider different ways to use mathematics to represent a real-world situation.	• Students explain and show real-world phenomena with mathematical models while answering *Wh-* questions and using *visualize* and *represent* as needed. • To support optimizing output, ELs participate in MLR4: Info Gap.	• Students show appreciation for the different perspectives of their classmates.

Coherence

Previous	Now	Next
• Students discussed and refined their problem solving skills and process. They related ways to represent quantities.	• Students consider models to represent real-world situations and problems. They choose tools that are appropriate for solving a given problem.	• Students refine their skill in constructing arguments and in critiquing the reasoning of their classmates.

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students demonstrate understanding of how real-world situations and problems can be modeled with mathematics.	• Students build proficiency with modeling with mathematics.	• Students apply their understanding of modeling with mathematics to model real-world problems with mathematics.

LESSON 1-4

Math Is Explaining and Sharing

Learning Targets

- I can construct an argument to explain my thinking.
- I can explain my thinking with clear and appropriate terms.

Standards ◆ Major ▲ Supporting ○ Additional

Content

○ **4.NF.A.2** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as ½. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Math Practices and Processes

MPP Construct arguments and critique the reasoning of others.

MPP Attend to precision.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students refine their skills in constructing arguments to support their thinking. • Students respond to the ideas and arguments of others.	• Students discuss arguments to support their thinking while answering *Wh-* questions and using *carefully* as needed and able. • To support optimizing output, ELs participate in MLR1: Stronger and Clearer Each Time.	• Students practice showing respect for classmates as they share ideas and thinking.

Coherence

Previous	Now	Next
• Students considered models to represent real-world situations and problems. They choose appropriate tools for solving a given problem.	• Students refine their skill in constructing arguments and in critiquing the reasoning of their classmates.	• Students analyze and generate patterns.

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students demonstrate understanding of the importance of supporting their solutions and ideas with viable arguments and responding constructively to the arguments of others.	• Students build proficiency with building viable arguments.	• Students apply their understanding of argumentations to evaluate the reasonableness of the arguments of others.

LESSON 1-5

Math Is Finding Patterns

Learning Targets

- I can use patterns to develop efficient strategies to solve problems.
- I can explain why patterns are useful to solve problems.

Standards ◆ Major ▲ Supporting ● Additional

Content

○ **4.OA.C.5** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

Math Practices and Processes

MPP Look for and make use of structure.

MPP Look for and express regularity in repeated reasoning.

Focus

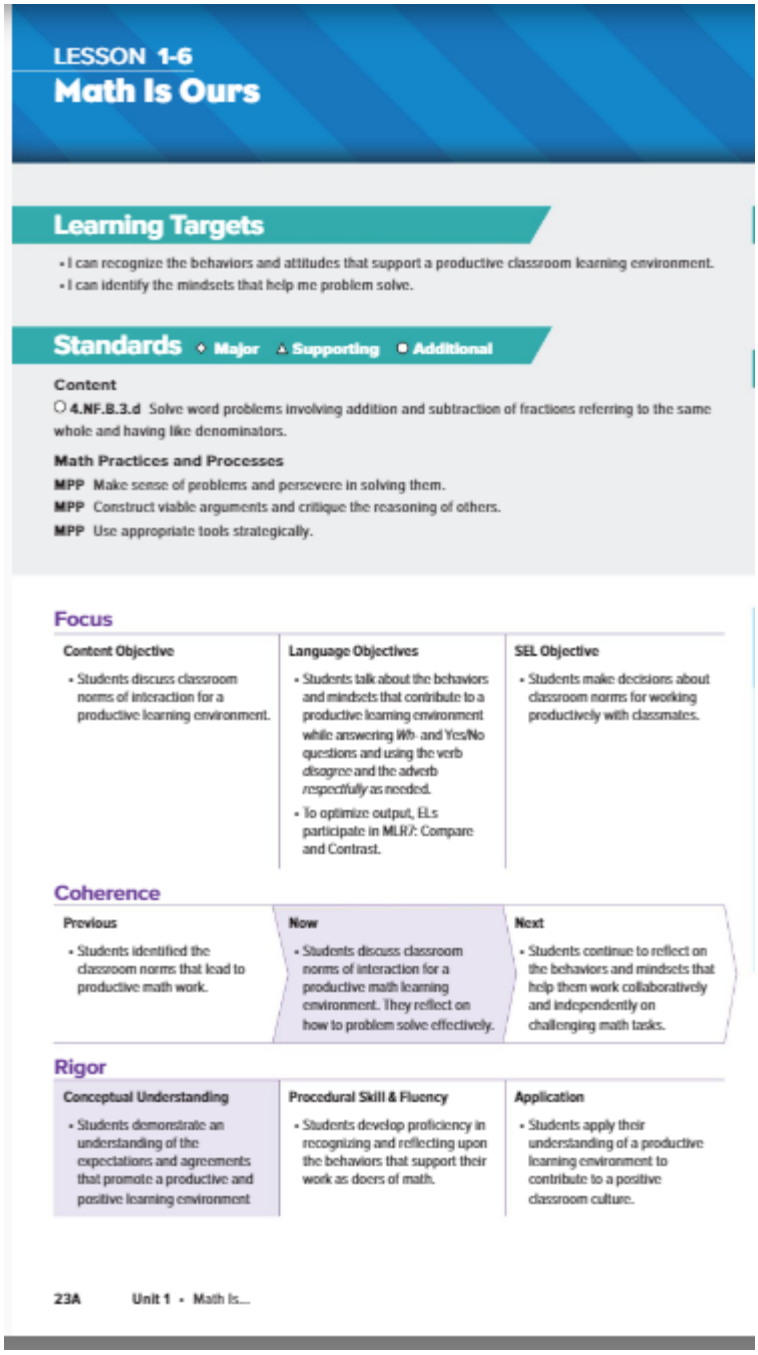
Content Objectives	Language Objectives	SEL Objective
• Students consider strategies for uncovering patterns and for using patterns to solve problems. • Students consider efficient strategies derived from repeated reasoning.	• Students talk about strategies for uncovering patterns and for using patterns to solve problems while answering *Wh-* and Yes/No questions and using the verb *can* as needed. • To support sense-making, ELs participate in MLR2: Collect and Display.	• Students practice self-control as they learn to take turns when sharing ideas with a partner or in a group.

Coherence

Previous	Now	Next
• Students refined their skill in constructing arguments and in critiquing the reasoning of their classmates.	• Students analyze and generate patterns.	• Students determine classroom norms for a productive math learning environment.

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students demonstrate understanding of pattern analysis.	• Students build proficiency with analyzing and generating patterns.	• Students apply their understanding of patterns to solve problems.



LESSON 1-6

Math Is Ours

Learning Targets

- I can recognize the behaviors and attitudes that support a productive classroom learning environment.
- I can identify the mindsets that help me problem solve.

Standards ◆ Major ▲ Supporting ● Additional

Content

○ **4.NF.B.3.d** Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.

Math Practices and Processes

MPP Make sense of problems and persevere in solving them.
MPP Construct viable arguments and critique the reasoning of others.
MPP Use appropriate tools strategically.

Focus

Content Objective	Language Objectives	SEL Objective
• Students discuss classroom norms of interaction for a productive learning environment.	• Students talk about the behaviors and mindsets that contribute to a productive learning environment while answering *Wh-* and Yes/No questions and using the verb *disagree* and the adverb *respectfully* as needed. • To optimize output, ELs participate in MLR7: Compare and Contrast.	• Students make decisions about classroom norms for working productively with classmates.

Coherence

Previous	Now	Next
• Students identified the classroom norms that lead to productive math work.	• Students discuss classroom norms of interaction for a productive math learning environment. They reflect on how to problem solve effectively.	• Students continue to reflect on the behaviors and mindsets that help them work collaboratively and independently on challenging math tasks.

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students demonstrate an understanding of the expectations and agreements that promote a productive and positive learning environment	• Students develop proficiency in recognizing and reflecting upon the behaviors that support their work as doers of math.	• Students apply their understanding of a productive learning environment to contribute to a positive classroom culture.

Integration of Career Readiness, Life Literacies and Key Skills

9.4.8.CI.1	Assess data gathered on varying perspectives on causes of climate change (e.g., cross-cultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4).
9.2.5.CAP.1	Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
9.2.5.CAP.2	Identify how you might like to earn an income.
9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and

	occupations.
9.4.8.CI.4	Explore the role of creativity and innovation in career pathways and industries.
9.2.5.CAP.4	Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
9.1.2. FI.1	Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards).
9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.
9.4.8.DC.2	Provide appropriate citation and attribution elements when creating media products (e.g., W.6.8).
9.1.2.PB.2	Explain why an individual would choose to save money.
9.4.8.DC.4	Explain how information shared digitally is public and can be searched, copied, and potentially seen by public audiences.
9.4.8.DC.5	Manage digital identity and practice positive online behavior to avoid inappropriate forms of self-disclosure.
9.4.8.DC.8	Explain how communities use data and technology to develop measures to respond to effects of climate change (e.g., smart cities).
9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect (e.g., 1.5.8.C1a).
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.2	Identify specific examples of distortion, exaggeration, or misrepresentation of information.
9.4.8.IML.3	Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b).
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.
9.4.8.IML.5	Analyze and interpret local or public data sets to summarize and effectively communicate the data.
9.4.8.IML.7	Use information from a variety of sources, contexts, disciplines, and cultures for a specific purpose (e.g., 1.2.8.C2a, 1.4.8.CR2a, 2.1.8.CHSS/IV.8.AI.1, W.5.8, 6.1.8.GeoSV.3.a, 6.1.8.CivicsDP.4.b, 7.1.NH. IPRET.8).
9.4.8.IML.12	Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.
9.4.8.TL.1	Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.
9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.
9.4.8.TL.5	Compare the process and effectiveness of synchronous collaboration and asynchronous collaboration.
9.4.8.TL.6	Collaborate to develop and publish work that provides perspectives on a real-world problem.

Technology and Design Thinking

8.1.5.CS.3	Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
	Data can be organized, displayed, and presented to highlight relationships.
8.1.5.DA.1	Collect, organize, and display data in order to highlight relationships or support a claim.
8.1.5.DA.3	Organize and present collected data visually to communicate insights gained from different views of the data.
8.1.5.DA.4	Organize and present climate change data visually to highlight relationships or support a claim.

Interdisciplinary Connections

LA.RI.5.1	Quote accurately from a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
LA.RI.5.2	Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
LA.RI.5.3	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
LA.RI.5.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
LA.RI.5.5	Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
LA.RI.5.6	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
LA.RI.5.7	Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
LA.RI.5.8	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).
LA.RI.5.9	Integrate and reflect on (e.g., practical knowledge, historical/cultural context, and background knowledge) information from several texts on the same topic in order to write or speak about the subject knowledgeably.
LA.RI.5.10	By the end of year, read and comprehend literary nonfiction at grade level text-complexity or above, with scaffolding as needed.
LA.W.5.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
LA.SL.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
LA.L.5.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
LA.L.5.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.

- **Definitions of Differentiation Components**:

    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

Use Differentiation guide in Teacher's manual for each unit

Modifications and Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

DRA

Additional Benchmarks used in this unit:

End of Unit assessments

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

Teacher Observations

Checklists

Questions and Discussions

Quizzes

Summative Assessments

Summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

End of Unit Assessments

Instructional Materials

See Above

Standards

5.NF.A.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
5.NF.B.3	Interpret a fraction as division of the numerator by the denominator (□/□ = □ ÷ □). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
5.NF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.