Unit 7 Reveal Grade 3

Content Area: **Math**
Course(s):
Time Period: **January**
Length: **3 weeks**
Status: **Published**

Unit Overview

UNIT 7 PLANNER
Fractions

PACING: 10 days

LESSON		MATH OBJECTIVE	LANGUAGE OBJECTIVE	SOCIAL AND EMOTIONAL LEARNING OBJECTIVE	LESSON	KEY VOCABULARY
Unit Opener	IGNITE Sharing Muffins	Students apply the concept of fair and equal parts of a whole.				
7-1	Partition Shapes into Equal Parts	Students partition different shapes into equal parts. Students use the number of parts to describe the equal parts of the shape.	Students describe equal parts by using a clause with *when*.	Students discuss the value of hearing different viewpoints and approaches to problem solving.	7-1	Math Terms partition
7-2	Understand Fractions	Students identify and represent fractions. Students explain how to represent a fraction using the meanings of the numerator and the denominator.	Students explain a fraction by using the verb *represents*.	Students set learning goals and initiate work on tasks to accomplish their goals.	7-2	denominator fraction numerator unit fraction
Math Probe	Representing Fractions	Students understand the meaning of equal areas of a whole when considering representations for unit fractions.				
7-3	Represent Fractions on a Number Line	Students partition number lines into intervals and represent each interval with a unit fraction. Students identify and represent fractions on a number line.	Students articulate intervals by counting fractions on a number line.	Students recognize personal strengths through thoughtful self-reflection.	7-3	number line partition unit fraction
7-4	Represent One Whole as a Fraction	Students represent one whole as a fraction. Student represent fractions equal to one whole.	Students explain different ways to represent fractions by using *another way*.	Students collaborate with peers to complete a mathematical task and offer constructive feedback to the mathematical ideas posed by others.	7-4	denominator fraction tiles numerator unit fraction
7-5	Represent Whole Numbers as Fractions	Students represent whole numbers as fractions. Students represent fractions equal to whole numbers.	Students articulate possible strategies by using *can*.	Students break down a situation to identify the problem at hand.	7-5	denominator numerator whole number
7-6	Represent a Fraction Greater Than One on a Number Line	Students represent fractions greater than one on a number line.	Students make comparisons between fractions by using *greater than* and *less than*.	Students collaborate with peers and contribute to group effort to achieve a collective mathematical goal.	7-6	denominator numerator
Unit Review **Fluency Practice**						
Performance Task **Unit Assessment**						

1A Unit 7 • Fractions

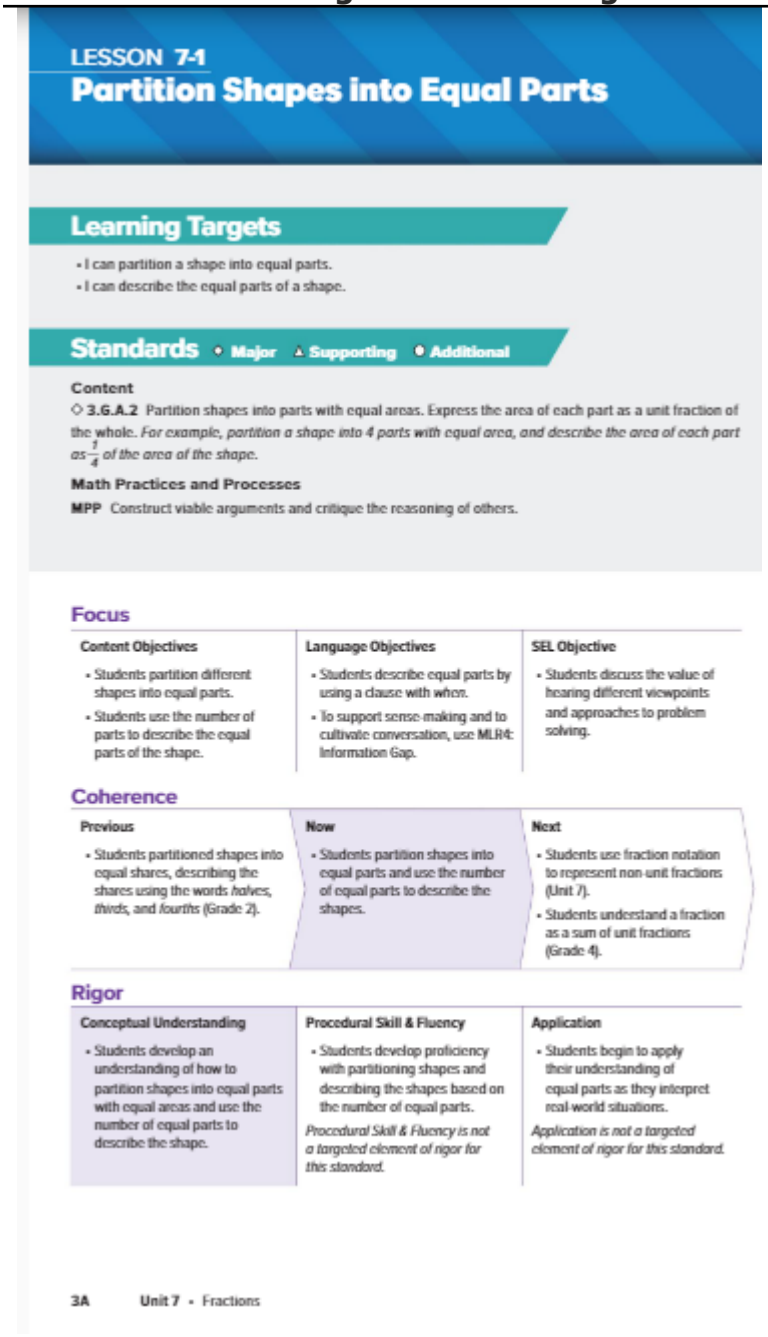
Enduring Understandings

See Above

Essential Questions

See Above

Instructional Strategies and Learning Activities



LESSON 7-1

Partition Shapes into Equal Parts

Learning Targets

- I can partition a shape into equal parts.
- I can describe the equal parts of a shape.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.G.A.2** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape.*

Math Practices and Processes

MPP Construct viable arguments and critique the reasoning of others.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students partition different shapes into equal parts. • Students use the number of parts to describe the equal parts of the shape.	• Students describe equal parts by using a clause with *when*. • To support sense-making and to cultivate conversation, use MLR4: Information Gap.	• Students discuss the value of hearing different viewpoints and approaches to problem solving.

Coherence

Previous	Now	Next
• Students partitioned shapes into equal shares, describing the shares using the words *halves*, *thirds*, and *fourths* (Grade 2).	• Students partition shapes into equal parts and use the number of equal parts to describe the shapes.	• Students use fraction notation to represent non-unit fractions (Unit 7). • Students understand a fraction as a sum of unit fractions (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students develop an understanding of how to partition shapes into equal parts with equal areas and use the number of equal parts to describe the shape.	• Students develop proficiency with partitioning shapes and describing the shapes based on the number of equal parts. *Procedural Skill & Fluency is not a targeted element of rigor for this standard.*	• Students begin to apply their understanding of equal parts as they interpret real-world situations. *Application is not a targeted element of rigor for this standard.*

LESSON 7-2

Understand Fractions

Learning Targets

- I can use a fraction to represent one or more parts of a whole.
- I can explain how to represent a fraction using the meanings of the *numerator* and the *denominator*.

Standards ◇ Major △ Supporting ○ Additional

Content

◇ **3.NF.A.1** Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by a parts of size $\frac{1}{b}$.

◇ **3.G.A.2** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape.*

Math Practices and Processes

MPP Look for and express regularity in repeated reasoning.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students identify and represent fractions. • Students explain how to represent a fraction using the meanings of the numerator and the denominator.	• Students explain a fraction by using the verb *represents*. • To maximize linguistic and cognitive meta-awareness, use MLR2: Collect and Display.	• Students set learning goals and initiate work on tasks to accomplish their goals.

Coherence

Previous	Now	Next
• Students partitioned shapes into equal shares and described the shares (Grade 2). • Students partitioned shapes into equal parts, using fraction notation to represent each part as a unit fraction (Unit 7).	• Students model the concept of unit fractions as one part of a whole. • Students extend their understanding of unit fractions to identify fractions that represent more than one part of a whole.	• Students represent fractions on a number line (Unit 7). • Students generate equivalent fractions (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students develop an understanding of a fraction as one or more parts of a whole and how to represent them.	• Students write fractions to describe models and shade shapes to represent fractions. *Procedural Skill & Fluency is not a targeted element of rigor for this standard.*	• Students begin to apply their knowledge of fractions to solve problems with real-world contexts. *Application is not a targeted element of rigor for this standard.*

LESSON 7-3

Represent Fractions on a Number Line

Learning Targets

- I can represent a fraction on a number line.
- I can explain how to represent a fraction on a number line.

Standards ◆ Major △ Supporting ○ Additional

Content

◇ **3.NF.A.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram.

◇ **3.NF.A.2.a** Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.

◇ **3.NF.A.2.b** Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a length $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.

Math Practices and Processes

MPP Look for and make use of structure.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students partition number lines into intervals and represent each interval with a unit fraction. • Students identify and represent fractions on a number line.	• Students articulate intervals by counting fractions on a number line. • To optimize output, use MLR7: Compare and Connect.	• Students recognize personal strengths through thoughtful self-reflection.

Coherence

Previous	Now	Next
• Students represented whole numbers as lengths from 0 on a number line (Grade 2). • Students learned that fractions represent one or more equal parts of a whole (Unit 7).	• Students partition the distance between 0 and 1 into equal parts where each part represents a unit fraction. • Students represent fractions on number lines.	• Students learn how to represent whole numbers as fractions (Unit 7). • Students generate equivalent fractions using multiplication (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students continue to build upon their understanding of fractions by representing them on a number line.	• Students develop proficiency representing fractions on number lines. *Procedural Skill & Fluency is not a targeted element of rigor for this standard.*	• Students apply their understanding of fractions to solve real-world problems. *Application is not a targeted element of rigor for this standard.*

LESSON 7-4

Represent One Whole as a Fraction

Learning Targets

- I can write 1 as a fraction.
- I can explain why 1 can be written as a fraction.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.NF.A.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

◇ **3.NF.A.3.c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form* $3 = \frac{3}{1}$*; recognize that* $\frac{6}{1} = 6$*; locate* $\frac{4}{4}$ *and 1 at the same point of a number line diagram.*

Math Practices and Processes

MPP Use appropriate tools strategically.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students represent one whole as a fraction. • Student represent fractions equal to one whole.	• Students explain different ways to represent fractions by using *another way*. • To maximize meta-awareness and optimize output, use MLR8: Discussion Supports.	• Students collaborate with peers to complete a mathematical task and offer constructive feedback to the mathematical ideas posed by others.

Coherence

Previous	Now	Next
• Students represented whole numbers as lengths from 0 on a number line (Grade 2). • Students represented fractions on a number line (Unit 7).	• Students express one whole, or 1, as different fractions. • Students build understanding of fractions that are equal to one whole, or 1.	• Students represent fractions greater than 1 (Unit 7). • Students compose and decompose fractions (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students develop an understanding of how the number 1 can be shown as a fraction. Students note that when the numerator and the denominator are the same, the fraction is equal to one whole, or 1.	• Students develop fluency representing a whole number as a fraction. *Procedural Skill & Fluency is not a targeted element of rigor for this standard.*	• Students begin to apply the understanding that one whole can be represented as a fraction to solve real-world problems. *Application is not a targeted element of rigor for this standard.*

LESSON 7-5

Represent Whole Numbers as Fractions

Learning Targets

- I can write any whole number as a fraction.
- I can explain why whole numbers can be written as fractions.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.NF.A.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

◇ **3.NF.A.3.c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form* $3 = \frac{3}{1}$*; recognize that* $\frac{6}{1} = 6$*; locate* $\frac{4}{4}$ *and 1 at the same point of a number line diagram.*

Math Practices and Processes

MPP Look for and express regularity in repeated reasoning.

Focus

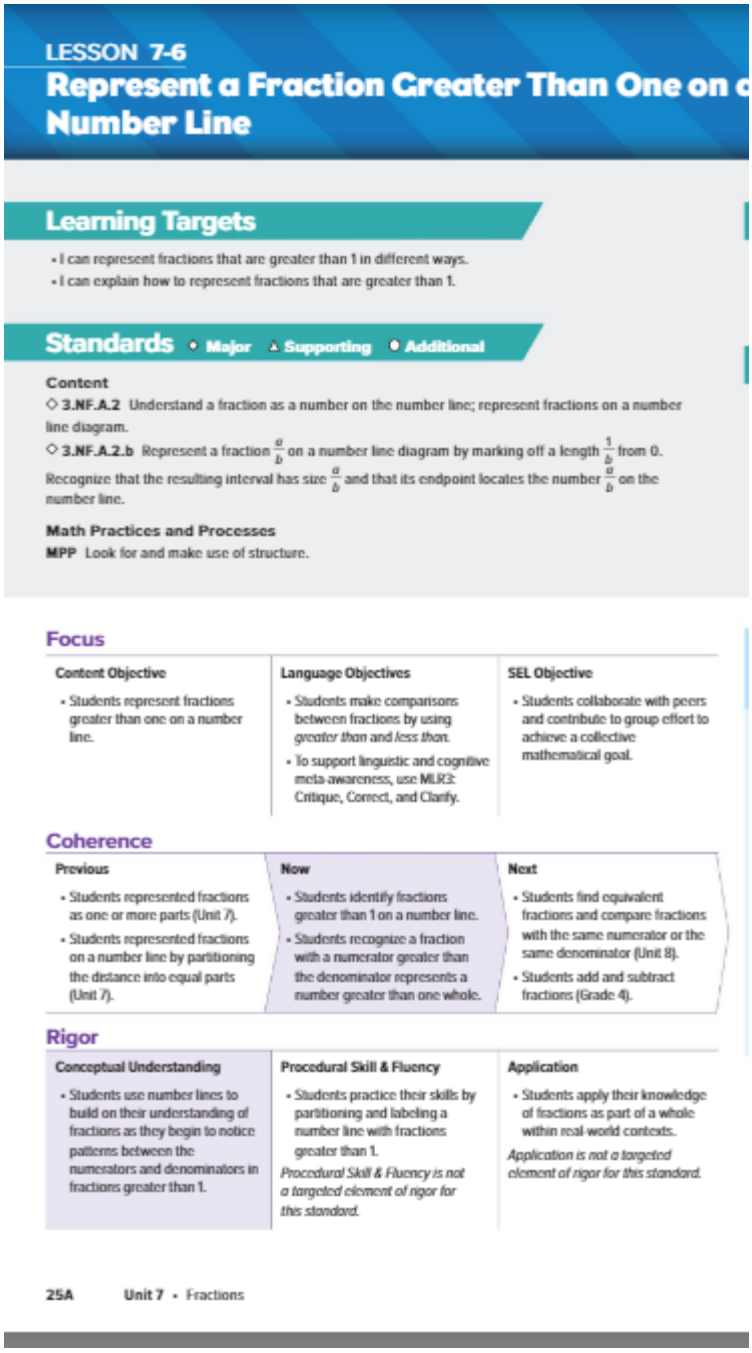
Content Objectives	Language Objectives	SEL Objective
• Students represent whole numbers as fractions. • Students represent fractions equal to whole numbers.	• Students articulate possible strategies by using *can*. • To maximize meta-awareness and optimize output, use MLR1: Stronger and Clearer Each Time.	• Students break down a situation to identify the problem at hand.

Coherence

Previous	Now	Next
• Students previously expressed 1 as a fraction (Unit 7).	• Students extend their understanding of fractions by writing any whole number as a fraction.	• Students represent fractions greater than 1 on a number line (Unit 7). • Students add and subtract fractions greater than 1 (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students extend their understanding of fractions by representing whole numbers greater than 1 as fractions.	• Students develop fluency in representing whole numbers as fractions. *Procedural Skill & Fluency is not a targeted element of rigor for this standard.*	• Students apply their understanding of fractions greater than 1 to solve contextual problems. *Application is not a targeted element of rigor for this standard.*



LESSON 7-6

Represent a Fraction Greater Than One on a Number Line

Learning Targets

- I can represent fractions that are greater than 1 in different ways.
- I can explain how to represent fractions that are greater than 1.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.NF.A.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram.

◇ **3.NF.A.2.b** Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a length $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.

Math Practices and Processes

MPP Look for and make use of structure.

Focus

Content Objective	Language Objectives	SEL Objective
• Students represent fractions greater than one on a number line.	• Students make comparisons between fractions by using *greater than* and *less than*. • To support linguistic and cognitive meta-awareness, use MLR3: Critique, Correct, and Clarify.	• Students collaborate with peers and contribute to group effort to achieve a collective mathematical goal.

Coherence

Previous	Now	Next
• Students represented fractions as one or more parts (Unit 7). • Students represented fractions on a number line by partitioning the distance into equal parts (Unit 7).	• Students identify fractions greater than 1 on a number line. • Students recognize a fraction with a numerator greater than the denominator represents a number greater than one whole.	• Students find equivalent fractions and compare fractions with the same numerator or the same denominator (Unit 8). • Students add and subtract fractions (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students use number lines to build on their understanding of fractions as they begin to notice patterns between the numerators and denominators in fractions greater than 1.	• Students practice their skills by partitioning and labeling a number line with fractions greater than 1. *Procedural Skill & Fluency is not a targeted element of rigor for this standard.*	• Students apply their knowledge of fractions as part of a whole within real-world contexts. *Application is not a targeted element of rigor for this standard.*

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Integration of Career Readiness, Life Literacies and Key Skills

PFL.9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
PFL.9.1.2.CR.2	List ways to give back, including making donations, volunteering, and starting a business.
PFL.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).
PFL.9.1.2.FP.1	Explain how emotions influence whether a person spends or saves.
PFL.9.1.2.FP.3	Identify the factors that influence people to spend or save (e.g., commercials, family, culture, society).

PFL.9.1.2.PB.1	Determine various ways to save and places in the local community that help people save and accumulate money over time.
PFL.9.1.2.PB.2	Explain why an individual would choose to save money.
TECH.9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
TECH.9.4.2.CI.2	Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
TECH.9.4.2.CT.2	Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
TECH.9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
TECH.9.4.2.DC.3	Explain how to be safe online and follow safe practices when using the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).
TECH.9.4.2.DC.6	Identify respectful and responsible ways to communicate in digital environments.
TECH.9.4.2.DC.7	Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).
TECH.9.4.2.TL.2	Create a document using a word processing application.
TECH.9.4.2.TL.5	Describe the difference between real and virtual experiences.
TECH.9.4.2.TL.6	Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).
TECH.9.4.2.TL.7	Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Technology and Design Integration

CS.K-2.8.1.2.AP.4	Break down a task into a sequence of steps.
CS.K-2.8.1.2.AP.5	Describe a program's sequence of events, goals, and expected outcomes.
CS.K-2.8.1.2.CS.1	Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
CS.K-2.8.1.2.DA.1	Collect and present data, including climate change data, in various visual formats.
CS.K-2.8.1.2.DA.3	Identify and describe patterns in data visualizations.
CS.K-2.8.1.2.DA.4	Make predictions based on data using charts or graphs.
CS.K-2.8.2.2.ITH.4	Identify how various tools reduce work and improve daily tasks.

Interdisciplinary Connections

LA.RI.3.1	Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
LA.RI.3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.
LA.RI.3.3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
LA.RI.3.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
LA.RI.3.5	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
LA.RI.3.6	Distinguish their own point of view from that of the author of a text.

LA.RI.3.8	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence) to support specific points the author makes in a text.
LA.RI.3.9	Compare, contrast and reflect on (e.g., practical knowledge, historical/cultural context, and background knowledge) the most important points and key details presented in two texts on the same topic.
LA.RI.3.10	By the end of the year, read and comprehend literary nonfiction at grade level text-complexity or above, with scaffolding as needed.
LA.W.3.4	With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
LA.SL.3.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
LA.L.3.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

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:

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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:

Reveal 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 observation

Checklists

Questioning and Discussion

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

MA.3.NF.A.1	Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.
MA.3.NF.A.2	Understand a fraction as a number on the number line; represent fractions on a number line diagram.
MA.3.NF.A.2a	Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.
MA.3.NF.A.2b	Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
MA.3.NF.A.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
MA.3.NF.A.3c	Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.

MA.3.G.A.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.