3 Math Unit 07: Fractions

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 2**
Length: **10 Days**
Status: **Published**

Unit Overview

Fractions, Unit Fractions, and Fractions Equal to or Greater Than One

Starting in Grade 3, students begin to explore fractions. They experiment with different ways to partition a whole into equal parts with equal areas. Student divide a 2-dimensional shape into equal parts and learn that they can use a fraction to represent one or more of those parts. The denominator is the bottom number in the fraction, and it represents the total number of equal parts in the whole. The numerator is the top number in the fraction, and it represents the number of equal parts being discussed. Students learn that the interval between two whole numbers on a number line represents one whole. They can partition the interval into equal parts. Each equal part can be represented using a unit fraction.

Students learn that a unit fraction has a numerator of one. Iterations of unit fractions can be used to write a fraction that represents more than one part of a whole. Whole numbers can also be represented as fractions. Fraction tiles, fraction circles, shapes, and number lines can be used to model, and skip counting, repeated addition, and multiplication can be used to determine how to write whole numbers. When a fraction is equal to a whole number, the numerator is the product of the denominator and the whole number.

What Students Are Learning

- Students partition shapes into equal areas and use unit fractions to describe each part.
- Students represent fractions by shading figures an on a number line.
- Students express whole numbers as fractions and recognize fractions that are equivalent to whole numbers.

Number Routines

- Would You Rather?
- About How Much?
- Decompose It
- Is It Always True?
- Notice & Wonder

Standards

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

MATH.3.NF.A.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
MATH.3.G.A.1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
MATH.3.G.A.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Materials

Core Materials:

Reveal Math

7.1 Partition Shapes into Equal Parts

7.2 Understand Fractions

7.3 Represent Fractions on a Number Line

7.4 Represent One Whole as a Fraction

7.5 Represent Whole Numbers as Fractions

7.6 Represent a Fraction Greater Than One on a Number Line

Supplemental Materials:

- ST Math
- Happy Numbers
- 3 Act Lessons
- Building Fact Fluency Kit
- Brainingcamp Manipulatives
- Nearpod Lessons
- Brainpop Resources
- Online Resources

Technology

CS.3-5.8.1.5.DA.1	Collect, organize, and display data in order to highlight relationships or support a claim.
CS.3-5.8.1.5.DA.3	Organize and present collected data visually to communicate insights gained from different views of the data.
CS.3-5.8.1.5.DA.4	Organize and present climate change data visually to highlight relationships or support a claim.

CS.3-5.8.2.5.ED.2	Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
CS.3-5.8.2.5.ED.3	Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
CS.3-5.DA	Data & Analysis Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data. Data can be organized, displayed, and presented to highlight relationships.

Assessment

Formative Assessment

- Unit Readiness Diagnostics
- Lesson Checks
- Exit Tickets
- Teacher Observation

Summative Assessment

- Unit Assessment Performance Task
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

Differentiated Instruction			
Accommodate Based on Students Individual Needs: Strategies			
Time/General • Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture	**Processing** • Extra response time • Have students verbalize steps • Repeat, clarify, or reword directions • Mini-breaks between tasks • Provide a warning for transitions	**Comprehension** • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide	**Recall** • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence

notes/outline	• Reading partners	immediate feedback • Small group instruction • Emphasize multi-sensory learning	• Visual and verbal reminders • Graphic organizers
Assistive Technology • Computer/whiteboard • Tape recorder • Spell-checker • Audio-taped books	**Tests/Quizzes/Grading** • Extended time • Study guides • Focused/chunked tests • Read directions aloud	**Behavior/Attention** • Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback	**Organization** • Individual daily planner • Display a written agenda • Note-taking assistance • Color code materials

504

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video
- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives

- Math Diagnosis & Intervention System

At-risk of Failure

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

Gifted & Talented

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

Interdisciplinary Connections

SCI.3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
ELA.RL.CR.3.1	Ask and answer questions and make relevant connections to demonstrate understanding of a literary text, referring explicitly to textual evidence as the basis for the answers.
ELA.RI.TS.3.4	Utilize and reference features of a text when writing or speaking about a text, using text features (e.g., graphics, images, captions, headings) and search tools (e.g., key words, sidebars, hyperlinks) to locate and integrate information relevant to a given topic efficiently.
ELA.W.IW.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
SCI.3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Career Readiness, Life Literacies & Key Skills

PFL.9.1.5.FI	Financial Institutions

PFL.9.1.5.FI.1	Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies.
	There are specific steps associated with creating a budget.
PFL.9.1.5.PB.1	Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.
WRK.9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
WRK.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.
TECH.9.4.5.CT	Critical Thinking and Problem-solving
TECH.9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
TECH.9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
TECH.9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
	The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.

Career Ready Practices

STEM in Action

STEM Career: Astronomer: Haley discusses her aspirations to become an astronomer.

Haley Watches the Moon: Haley uses fractions to help her describe the fraction of the moon that can be seen.

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.