3 Math Unit 08: Fraction Equivalence and Comparison

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 3**
Length: **12 Days**
Status: **Published**

Unit Overview

Fractions That Can Be Compared and Equivalent Fractions

In this unit, students continue their study of fractions as they develop strategies for comparing two fractions. They learn that fractions can only be compared when they come from wholes of the same size. When they refer to different-sized wholes, the lesser fraction, in reference to a larger whole, might actually refer to a greater quantity. This idea helps students learn about equivalent fractions. Two or more fractions that represent the same amount of the same-size whole are equivalent fractions. Representations such as pizzas, circles, rectangles, and fraction models all help students to visually understand how two fractions can be equivalent.

Two or more fractions are also equivalent if they represent the same point on a number line when the wholes are the same length. This means the distance from 0 to 1 on each line is the same for the fractions being compared.

Another way to determine whether fractions are equivalent is to use fraction tiles. These show two fractions are equivalent when they represent the same amount of the same-size whole. Fractions with the same denominator can be compared by comparing their numerators. Because the denominators are the same, the size of the parts is the same. Students conclude that when the denominators are the same, the greater the numerator, the greater the fraction.

The greater the number of parts in a whole, the smaller the size of each part. So, when two fractions have the same numerator, the one with the greater denominator has the smaller parts, and is, therefore, the lesser fraction. This is because the smaller pieces are being compared to the same number of larger pieces.

What Students Are Learning

- Students understand and represent equivalent fractions.
- Students understand fractions of different wholes.
- Students compare fractions with the same denominator.
- Students compare fractions with the same numerator.

Number Routines

- Decompose It
- Greater Than or Less Than
- Find the Missing Values
- What's Another Way to Write it?
- Which Doesn't Belong?
- Notice & Wonder
- Is It Always True?
- Numberless Word Problem

Standards

3.NF.A.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
3.NF.A.3.a	Understand two fractions as equivalent (equal) if they are the same size. Understand two fractions as equivalent if they are located at the same point on a number line.
3.NF.A.3.b	Recognize and generate simple equivalent fractions by reasoning about their size, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent with the support of a visual fraction model.
3.NF.A.3.d	Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions with the support of a visual fraction model.

Materials

Core Materials:

Reveal Math

8.1 Understand Equivalent Fractions

8.2 Represent Equivalent Fractions

8.3 Represent Equivalent Fractions on a Number Line

8.4 Understand Fractions of Different Wholes

8.5 Compare Fractions with the Same Denominator

8.6 Compare Fractions with the Same Numerator

8.7 Compare Fractions

Supplemental Materials:

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

Technology

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. Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.
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.
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.
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.

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	**Processing**	**Comprehension**	**Recall**
• Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system	• Extra response time • Have students verbalize steps • Repeat, clarify, or reword directions • Mini-breaks between tasks	• Precise step-by-step directions • Short manageable tasks • Brief and	• Teacher-made checklist • Use visual graphic organizers • Reference

between home and school • Provide lecture notes/outline	• Provide a warning for transitions • Reading partners	concrete directions • Provide immediate feedback • Small group instruction • Emphasize multi-sensory learning	resources to promote independence • 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

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.
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.
RL.TS.3.4	Utilize and reference features of a text when writing or speaking about a text, referring to parts of stories, dramas, and poems, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.
W.IW.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
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

9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
9.4.5.CT	Critical Thinking and Problem-solving
	The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.
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).
9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
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).
9.1.5.FI	Financial Institutions
	People can choose to save money in many places such as home in a piggy bank, bank, or credit union.
	There are specific steps associated with creating a budget.
9.1.5.PB.1	Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.

Career Ready Practices

STEM in Action

STEM Career: Entomologist: Owen talks about the work of an entomologist.

Owen Compares the Sizes of Two Gardens: Owen uses equivalent fractions to compare equal parts of two gardens.

- 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.