

Unit 3 Fractions as Numbers and Measurement

Content Area: **Mathematics**
Course(s):
Time Period: **Generic Time Period**
Length: **6 weeks**
Status: **Published**

Standards

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| CRP.K-12.CRP2 | Apply appropriate academic and technical skills. |
| TECH.8.1.5.A.CS1 | Understand and use technology systems |
| LA.3.SL.3.1.B | Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). |
| SOC.6.1.4.C.10 | Explain the role of money, savings, debt, and investment in individuals' lives. |
| MA.3.3.MD.A.2 | Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. |
| LA.3.SL.3.1.C | Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. |
| MA.3.3.NF.A.2a | 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. |
| LA.3.SL.3.1.D | Explain their own ideas and understanding in light of the discussion. |
| MA.3.3.NF.A.2b | Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a lengths $\frac{1}{b}$ 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. |
| MA.3.3.NF.A.3a | Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. |
| MA.3.3.MD.B.4 | Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. |
| MA.3.3.NF.A.3b | Recognize and generate simple equivalent fractions (e.g., $\frac{1}{2} = \frac{2}{4}$, $\frac{4}{6} = \frac{2}{3}$). Explain why the fractions are equivalent, e.g., by using a visual fraction model. |
| LA.3.L.3.4 | Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. |
| MA.3.3.NF.A.3c | Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. |
| MA.3.3.NF.A.3d | 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, e.g., by using a visual fraction model. |
| LA.3.L.3.6 | Acquire and use accurately grade-appropriate conversational, general academic, |

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| TECH.8.1.5.B.CS1 | and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them). |
| MA.3.3.MD.A.1 | Apply existing knowledge to generate new ideas, products, or processes. |
| MA.3.3.NF.A | Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. |
| LA.3.SL.3.1 | Develop understanding of fractions as numbers. |
| MA.3.3.NF.A.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.3.SL.3.1.A | 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 $1/b$. |
| PFL.9.1.4.B.3 | Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion. |
| TECH.8.1.5.A.1 | Explain what a budget is and why it is important. |
| | Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems |

Essential Questions

How can you use fractions to describe how much or how many?

Why do you need to have equal parts for fractions?

How can you solve problems that involve fractions?

How can you compare fractions?

What models can help you compare and order fractions?

How can you use the size of pieces to help you compare and order fractions?

How can you find equivalent fractions?

How can you tell time and use measurement to describe the size of something?

How can you tell time and find the elapsed time, starting time, or ending time of an event?

How can you measure the length of an object to the nearest inch?

Student Learning Objectives

Critical Area: Developing understanding of fractions, especially unit fractions

Chapter 8

Unit Project - Coins in the US

Vocabulary -Going to the Mint

- Explore and identify equal parts of whole.
- Divide models to make equal shares.
- Use a fraction to name one part of a whole that is divided into equal parts.
- Read, write, and model fractions that represent more than one part of a whole that is divided into equal parts.
- Represent and locate fractions on a number line.
- Model, read, and write fractional parts of a group.
- Find fractional parts of a group using unit fractions.
- Solve fraction problems by using the strategy Draw a Diagram
- Represent fractions and whole numbers by expressing whole numbers as fractions and recognizing fractions that are equivalent to whole numbers.

Chapter 9

Vocabulary- Pick It

- Solve comparison problems by using the strategy act it out.
- Compare fractions with the same denominator by using models and reasoning strategies.
- Compare fractions with the same numerator by using models and reasoning strategies.
- Compare fractions by using models and strategies involving the size of the pieces in the whole.
- Compare and order fractions by using models and reasoning strategies.
- Model equivalent fractions by folding paper, using area models, and using number lines.
- Generate equivalent fractions by using models.

Critical Area: Developing understanding of the structure of rectangular arrays and area.

Chapter 10

Unit Project/Plan a Playground

Vocabulary / Going to the Playground

- Read, write, and tell time on analog and digital clocks to the nearest minute.
- Decide when to use am or pm to tell time to the nearest minute
- Use a number line or an analog clock to measure time intervals in minutes.
- Use a number line or an analog clock to add or subtract time intervals to find starting times or ending times.
- Solve problems involving addition and subtraction of time intervals by using the strategy Draw a Diagram
- Measure length to the nearest half or fourth inch and use measurement data to make a line plot. inch (in.)
- Estimate and measure liquid volume in liters.
- Estimate and measure mass in grams and kilograms.
- Add, subtract, multiply, or divide to solve problems involving liquid volumes or masses.

Materials

Go Math Print Resources

Student Edition 8, 9, 10

Practice and Homework (in the Student Edition)

Reteach (in the Chapter Resources)

Enrich (in the Chapter Resources)

Grab-and-Go Centers Kit

Chapter 8 Activity Cards 11

Chapter 9 Activity Cards 11

Chapter 10 Activity Card 6, 8

Readers

Chapter 8- Pizza Parts; The Whole Picture

Chapter 9- Pizza Parts; The Whole Picture

Chapter 10 - How heavy? How much? Late for School; A Trip to the Pond; A Walk on the Path

Games

Chapter 9- Fraction Action

Chapter 10- Matching Time

Place Value Manipulative

Math Whiteboards

Go Math Digital Resources:

iStudent Edition

eTeacher Edition

Personal Math Trainer

Math on the Spot Video

Real World Video

Animated Math Models

iTools

HMH Mega Math

iPad

Computer

Achieve the Core:

<http://achievethecore.org/page/2853/go-math-k-5-guidance-documents>

Activities

Chapter 8

Unit Project: Coins in the US

Vocabulary: Going to the Mint

8. 1 Equal Parts of a Whole

8.2 Equal Shares

8.3 Unit Fractions of a Whole

8. 4 Fractions of a Whole

8.5 Fractions on a Number Lin

8.6 Relate Fractions and Whole Numbers

8. 7 Fractions of a Group

8.8 Find Part of a Group Using Unit Fractions

8. 9 Find the Whole Group

Chapter 9

Vocabulary: Pick It

9.1 Compare Fractions

9.2 Compare Fractions with the Same Denominator

9.3 Compare Fractions with the Same Numerator

9.4 Compare Fractions

9.5 Compare and Order Fractions

9.6 Model Equivalent Fractions

9.7. Equivalent Fractions

Critical Area Review Project: The Skate Board Designer [www.thinkcentral](http://www.thinkcentral.com) .com

Chapter 10

Unit Project: Plan a Playground

Vocabulary: Going to the Playground

10.1 Time to the Minute

10.2 A.M and P.M

10.3 Measure Time Intervals

10.4 Use Time Intervals

10.5 Time Intervals

10.6 Measure Length

10.7 Estimate and Measure Liquid Volume

10.8 Estimate and Measure Mass

10.9 Solve Problems about Liquid Volume and Mass

Other Educational Resources

[3.NF.A.2 Closest to \$\frac{1}{2}\$](#)

[3.NF.A.2 Find 1 Starting from \$\frac{5}{3}\$](#)

[3.NF.A.2 Locating Fractions Greater than One on the Number Line](#)

[3.NF.A.3b, 3.G.A.2, 3.MD.C.6 Halves, thirds, and sixths](#)

[3.MD.A.1 Dajuana's Homework](#)

[3.MD.A.2 How Heavy?](#)

[3.MD.D Shapes and their Insides](#)

Assessment

MAP Assessment

Diagnostic:

Show What You Know

Digital Personal Math Trainer

Formative:

Lesson Quick Check

Mid-Chapter Checkpoint

Digital Personal Math Trainer

- Assessment Animation

- Assessment Video

Summative:

Chapter Review/Test

Chapter Test

Performance Assessment Task

Digital Personal Math Trainer

Fact Fluency

- Fluency Standard Lessons (Student Edition)
- Fluency Builder(Teacher Edition)
- Strategies and Practice for Skills and Facts Fluency
- Teacher Resource Book
- HMH Mega Math
- Personal Math Trainer: Standards Quizzes
- Animated Math Models

Mad Minutes

Fast Math

Flashcards

Multiplication Websites

MA.3.3.NBT.A.2

Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

MA.3.3.OA.C.7

Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

Standards for Mathematical Processes

MP.1 Make sense of problems and persevere in solving them.

MP.2 Reason abstractly and quantitatively.

MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics

MP.5 Use appropriate tools strategically.

MP.6 Attend to precision.

MP.7 Look for and make use of structure.

MP.8 Look for and express regularity in repeated reasoning.

Accommodations and Modifications

Personal Math Trainer

-Leveled quizzes and tests

-Leveled performance tasks

-Grab & Go Differentiated Centers

-Intensive Intervention Resource

-Strategic Intervention Resource

-Reteach activities

-RTI tiered resources and activities

-Math on the Spot videos