

## Unit 4: Fraction and Decimal Detectives

### 5<sup>th</sup> Grade Math

26 Class Meetings

*Written December 2025*

#### Essential Questions

- How can we use addition and subtraction of fractions to solve real-world problems involving parts of a whole?
- Why is it important to find common denominators when adding and subtracting fractions?
- How are fractions and decimals related, and how does that relationship help us add and subtract decimals accurately?
- How does understanding place value support accurate decimal addition and subtraction?

#### Enduring Understandings with Unit Goals

**EU 1:** Fractions represent quantities that can be combined and compared.

- Understand fractions as numbers that represent parts of a whole or parts of a set.
- Add and subtract fractions with unlike denominators by using equivalent fractions.
- Use visual models (number lines, area models) to represent fraction addition and subtraction.
- Solve real-world and mathematical problems involving addition and subtraction of fractions.
- Interpret fraction sums and differences and explain reasoning using mathematical vocabulary.

**EU 2:** Decimals are another way to represent fractions and are based on place value.

- Understand decimals as fractions with denominators of 10, 100, and 1,000.
- Add and subtract decimals to the hundredths place using place value understanding.
- Use estimation to assess the reasonableness of decimal sums and differences.
- Explain decimal operations using models, drawings, and equations.

**EU 3:** Mathematical reasoning and precision help ensure accurate solutions.

- Choose efficient strategies for adding and subtracting fractions and decimals.
- Justify solutions using words, numbers, and models.
- Attend to precision by aligning place values and using appropriate units.

#### Standards

##### Common Core State Standards:

- **CCSS.Math.Content.5.NF.A.1:** Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
- **CCSS.Math.Content.5.NF.A.2:** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.
- **CCSS.Math.Content.5.NBT.A.3:** Read, write, and compare decimals to thousandths.
- **CCSS.Math.Content.5.NBT.B.7:** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value.

**Unit 4: Fraction and Decimal Detectives**  
**5<sup>th</sup> Grade Math**  
26 Class Meetings

*Written December 2025*

**ISAAC Vision of the Graduate Competencies**

**Competency 1:** Write effectively for a variety of purposes.

**Competency 2:** Speak to diverse audiences in an accountable manner.

**Competency 3:** Develop the behaviors needed to interact and contribute with others on a team.

**Competency 4:** Analyze and solve problems independently and collaboratively.

**Competency 5:** Be responsible, creative, and empathetic members of the community.

**Unit Content Overview**

- **Adding and Subtracting Fractions**

- Review fractions as parts of a whole using visual and concrete models.
- Generate equivalent fractions to create common denominators.
- Add and subtract fractions with unlike denominators.
- Solve word problems involving fraction sums and differences.
- Use estimation and benchmarks (0,  $\frac{1}{2}$ , 1) to check for reasonableness.

- **Adding and Subtracting Decimals**

- Explore the relationship between fractions and decimals.
- Use place value charts and base-ten models to represent decimals.
- Add and subtract decimals by aligning place values.
- Solve real-world problems involving decimal operations.
- Estimate decimal sums and differences to verify accuracy.

**Vocabulary and Key Terms:** Fraction, numerator, denominator, equivalent fractions, common denominator, sum, difference, benchmark fraction, decimal, tenths, hundredths, thousandths, place value, estimate, reasonableness, regroup, algorithm, number line, area model

**Interdisciplinary Connection:**

- ELA

**Daily Learning Objectives with TWPS**

**Students will be able to...**

- Explain what a fraction represents as part of a whole using visual models.
  - *How does a picture help you understand what the fraction  $\frac{3}{4}$  means compared to just seeing the numbers?*
- Represent fractions on a number line and explain their size relative to 0 and 1.
  - *Why is placing fractions correctly on a number line important when comparing their values?*
- Identify equivalent fractions using area models and fraction strips.
  - *How can two fractions look different but still represent the same amount?*

## Unit 4: Fraction and Decimal Detectives

### 5<sup>th</sup> Grade Math

26 Class Meetings

*Written December 2025*

- Generate equivalent fractions by multiplying the numerator and denominator by the same number.
  - *Why does multiplying the numerator and denominator by the same number not change the value of a fraction?*
- Add fractions with like denominators using visual models.
  - *What stays the same when adding fractions with like denominators, and why?*
- Subtract fractions with like denominators and explain my thinking using models.
  - *How does subtraction of fractions compare to subtraction with whole numbers?*
- Add fractions with unlike denominators by creating equivalent fractions.
  - *Why do fractions need the same denominator before they can be added?*
- Subtract fractions with unlike denominators using equivalent fractions.
  - *What strategies help you decide which equivalent fractions to create??*
- Use number lines and area models to add and subtract fractions with unlike denominators.
  - *Which model—number line or area model—helps you understand fraction operations best, and why?*
- Solve real-world word problems involving fraction addition and subtraction.
  - *How can you tell what operation a fraction word problem is asking you to use?*
- Explain how decimals represent fractions with denominators of 10, 100, and 1,000.
  - *How is the decimal 0.25 related to the fraction 25/100?*
- Read, write, and compare decimals to the thousandths place.
  - *How does understanding place value help you compare 0.356 and 0.365?*
- Represent decimals using base-ten models and number lines.
  - *How do models help make decimals easier to understand?*
- Add decimals to the hundredths using place value strategies.
  - *Why is it important to line up decimal points when adding decimals?*
- Subtract decimals to the hundredths using models and equations.
  - *How does regrouping with decimals compare to regrouping with whole numbers?*
- Estimate decimal sums and differences to check if my answer is reasonable.
  - *How can estimation help you know if your exact answer makes sense?*
- Solve real-world problems involving decimal addition and subtraction.
  - *When might decimals be more useful than fractions in real life?*
- Choose an efficient strategy to add or subtract fractions based on the problem.
  - *How do you decide whether to use a model, an equation, or mental math?*
- Choose an efficient strategy to add or subtract decimals.
  - *What makes one strategy more efficient than another?*
- Explain my fraction-solving process using words, numbers, and models.
  - *Why is explaining your thinking just as important as getting the correct answer?*
- Justify my decimal solutions using equations and place value reasoning.
  - *How can place value help prove that your decimal answer is correct?*
- Solve multi-step problems that involve both fractions and decimals.
  - *What strategies help you stay organized when solving multi-step problems?*
- Analyze and correct errors in fraction and decimal solutions.
  - *How can mistakes help you become a stronger mathematician?*

## Unit 4: Fraction and Decimal Detectives

### 5<sup>th</sup> Grade Math

26 Class Meetings

*Written December 2025*

#### **Instructional Strategies/Differentiated Instruction**

- Whole group instruction
- Paragraph frames and sentence starters
- Teacher modeling
- Think-write-pair-share and small-group discussions
- Graphic organizers
- Accountable talk
- Homework
- Word walls with visuals
- Small group instruction
- Visual exemplars with teacher and student critiques
- Text and video chunking
- Spiraling back to guiding questions

#### **EL Differentiation Strategies**

- Word Banks and Word Walls with visuals
- TWPS (Think, write, pair, share)
- Culturally responsive teaching
- Explicit teacher modeling
- Key vocabulary
- Graphic organizers
- Strategic Grouping
- Non-verbal assessments

#### **Assessments**

##### **FORMATIVE ASSESSMENTS:**

- Do Now
- Academic Discourse
- Exit Slips
- Accountable Talk Discussions
- Completed notes
- Homework
- Performance Task -- “School Carnival” Performance Task
  - Teacher’s rubric/scoring guide

##### **SUMMATIVE ASSESSMENTS:**

- Quiz: Fractions, Decimals, Mathematical Reasoning (EU1, EU2, EU3)
- IAB
- Unit Task: “School Carnival” Performance Task (EU1, EU2 and EU3)

## Unit 4: Fraction and Decimal Detectives

### 5<sup>th</sup> Grade Math

26 Class Meetings

*Written December 2025*

#### Unit Task

**Unit Task Name:** “School Carnival” Performance Task

**Description:** Upon completion of the unit students will apply their understanding of adding, subtracting, multiplying, and dividing fractions and decimals to plan a school carnival. Students will become the planning committee to manage food, supplies, game materials, and the budget. They must solve real-world problems, explain their thinking, and make decisions based on their mathematical knowledge.

**Evaluation:** Teacher’s Scoring Guide

#### Unit Resources

- Google Classroom
- Pear Assessment
- Math In Focus
- Math Antics
- State Common Core Standards Transition Tasks
- Match Fishtank
- Worksheets
- Individual White boards
- Interactive notebook
- Laptops
- SBAC Prep Online