

Learning Design Template

| Grade Level & Content Area: 4th Grade Math | | | |
|--|---|--|---|
| Essential Learning Target: <i>TEKS (Choose ONE Boulder)</i> | Verbs: Level of Thinking (DOK) <i>The behaviors students will engage in to share learning progress or mastery during instruction or assessment</i> | Academic Vocabulary: <i>The language of learning and assessment, accountability talk, academic & essential vocabulary</i> | Prerequisite Skills: <i>What foundational understanding should students already have?</i> |
| 4.3(E) represent and solve addition and subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operations | represent solve using | Addition, difference, equal denominators, fractions, number line, properties of operations, subtraction, sum, whole, part, pictorial models, objects | 3.3(D) compose and decompose a fraction a/b with a numerator greater than zero and less than or equal to b as a sum of parts $1/b$ 3.3(E) solve problems involving partitioning an object or a set of objects among two or more recipients using pictorial representations of fractions with denominators of 2, 3, 4, 6, and 8 |
| Possible Misconceptions or Misunderstandings/ Clean Up Strategies: | | | |
| <p>Students may choose the incorrect operation when solving problems.</p> <p>Make sure students do not add or subtract the denominators when adding and subtracting fractions.</p> <p>Students may not understand that adding and subtracting fractions as joining and separating parts of the same whole.</p> | | | |

Question 1: What do you expect the students to learn?

Overall Learning Goal/Big Idea or Concept:

Represent addition and subtraction problems involving fractions.
Solve problems involving addition and subtraction involving fractions, models, number lines, and properties of operations.

“I Can _____ Statements” (streamline what mastery looks like)

I can use fraction bars or fraction strips to model problems that involve adding or subtracting fractions.

I can sketch strip diagrams to solve problems that involve adding or subtracting fractions.

I can solve problems that involve adding or subtracting fractions.

Stems to Guide Learning

Guiding Question Stems/ Essential Questions:

Questions used to prompt or coach students as they work toward answering assessment or essential question stem

***Include specific questions stems for both on level and “question 4” students.*

- What are real world situations when fractions are used to represent numbers?
- What do the parts of a fraction tell about its numerator and denominator?
- What fractional expressions can be used to represent numbers greater than one?
- How can denominators help you add/subtract fractions?
- How can you decompose a fraction in different ways?

Assessment Question Stems/Examples:

Dive into the language and accountability of assessment stems or tasks, distractors, etc. to determine depth of knowledge and level of understanding

[Link to released assessment questions](#)

Student Speaking Stems:

Sentence starters used to help students verbalize their understanding

[Sentence stems are great way to support students, especially those who struggle with explaining their answers or their thinking. Here are my go-to sentence stems for explaining answers in math.](#)

My answer is... I figured it out by...

My answer is... To get my answer, I...

My solution is... I arrived at this solution by...
 To get my answer, I...
 First I..., Then I..., Next I..., Finally, I...
 To begin with, I...
 The first step I took was...
 This problem reminded me of..., so I...
 I noticed..., so I...
 I chose to add/subtract/multiply/divide because the problem

Question 2: How will we know they are learning?

Formative Assessments:

A wide variety of methods that teachers use to conduct in-process evaluations of student comprehension, learning needs, and academic progress during a lesson or unit
 Ex: Observations, exit tickets, turn and talks, google forms, graphic organizer, quizzes, etc.

Summative Assessments:

Used to evaluate student learning, skill acquisition, and academic achievement at the conclusion of a defined instructional period
 Ex: Mid/end of unit assessment, final project or portfolio

- Exit Ticket: Write an adding or subtracting fractions problem or model a fraction problem on a number line with like denominators and explain your answer. Be sure to focus on how you determined the numerator and denominator.
- MM TE p. 156 Suggested Formative Assessment - Using 2-color counters to write fact families.
- Create a "I have Who Has" fractions game with a small group to play as a class.
- Technology Connection: MM TE p. 155 Suggested Instructional Activity #3 - Students can complete activity as a Google Slides presentation to easily share with the teacher and class.
- Technology Connection: [Adding Fractions with Digital Models](#) ([Teacher notes](#) are included separately for

- Topic 11 Test: Pearson TE Vol 2B p 611-614 (Could be used as review/extra practice)
- [Pearson Topic 11 Online Assessment](#) can be used to complete for homework or during work stations to give immediate feedback.
- [Fraction Challenge Menu](#)
- [Fraction Scoot](#) Students number their paper 1-24 and scoot around the room to answer questions. (Covers several Unit 4 skills) [See Answer Key](#)
- [Unit 4 Assessment](#)
- [Unit 4 Assessment KEY](#)

guidance on student technology knowledge needed.)

- MM TE p. 165 Suggested Reflection/Closure Activity can be completed in left side of INB.
- [Fraction Word Problems \(Add/Sub with Unlike Denominators\)](#)
- Year Long Google Presentation- (Be sure student shares this document with you. It can be shared locally or globally and completed in small groups or individually). Students add a slide to show how to add and subtract fractions with like denominators. (This is a great review before STAAR and a great way to check student learning)
- Create or search a Kahoot on <https://getkahoot.com/> Students can work in pairs or teams to compete against one another using IPods or Chrome books while reviewing concepts.
- Practice for naming [Mixed and Improper fractions](#)

Practice Opportunities/ Stations:

- MM TE p. p. 164 Suggested Instruction Activity #2 - Practice with word problems then students will create their own.
- [Thinking blocks used to model and solve fractional word problems](#)
- Use circle fraction manipulatives to help students decompose fractions during the [adding fractions investigation](#). See [Answer key](#)
- Station Activity: [Pearson Game - Fancy Flea](#) Adding Fractions with like denominators
- [INB Activities](#)
- Pearson TE Vol 2B p 557-606
- MM TE p. 154 Suggested Instructional Activity #2 - Practice doubling a recipe that includes many fractions

Question 3: How will we respond when they don't learn it?

Intervention Opportunities:

Based on formative assessment data, how are you going to reteach?

Examples: new strategies, reteach videos, flexible grouping, specific hands on manipulatives or visual aids, anchor charts

- Reteaching Adding and Subtracting Fractions with Like Denominators: Pearson TE Vol 2B p 607-610

- Represent and Decompose Fractions: MM TE p. 124 Intervention Activity #2
- Estimating Sums/Differences: MM TE p. 166 Intervention Activity #1 - Use index cards as practice
- **ACTIVITY #1** - Have students work with fraction circles to compare fractions with common numerators. Suggest students record a comparison including the symbol, then verify their comparison by modeling the two fractions with fraction circles. (DOK: 2, RBT: Understand).
- **ACTIVITY #2** - Prepare a set of cards by writing one fraction on each card. Deal five cards to each student, and turn over the top card of the remaining cards. Have students discard a card with a fraction that is less than the one on the card on the table and share the strategy used to determine the response. After each student takes a turn, select another card and ask who has a fraction greater than that one. Continue until a student has discarded all his or her cards. (DOK: 1, RBT: Understand)

ELL Support:

- Allow additional wait time, provide a print-rich environment to include labels, word walls, and visual cueing.
- Continually use the model of concrete > pictorial > algorithm with the students and include lots of rich vocabulary.
- MM TE p. 152 Suggestive Formative Assessment - Students draw pictorial models to solve and understand.

Question 4: How will you respond if they already know it?

Extend/Enrichment Opportunities:

Based on formative assessment data, how are you going to extend learning?

Examples: changing the story ending, construct a model, extension labs, research activities, etc.

- <http://www.coolmath4kids.com/fractions/fractions-12-adding-subtracting-different-denominators-01.html> adding and subtracting with unlike denominators- find equivalent fractions with common denominators
- http://www.math-drills.com/fractions/fractions_addsub_mixed_easy_001.html Adding and subtracting mixed numbers with unlike denominators practice
- **ACTIVITY** - Give students 10 fractions and a blank number line. Instruct students to place the fractions on the number line to show their order. Have students compare their number lines with those of other students and discuss any differences to arrive at a consensus for the order of the fractions. (DOK: 2, RBT: Analyze)