TEKS Cluster: Fractions

4.3 **Number and operations.** The student applies mathematical process standards to represent and generate fractions to solve problems.

Connected Knowledge and Skills 4.2

Representation of Fractions

Supporting Standards

4.3(A) represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$

4.3(B) decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations

Equivalency of Fractions

Readiness Standards

4.2(G) relate decimals to fractions that name tenths and hundredths

Supporting Standards

4.3(C) determine if two given fractions are equivalent using a variety of methods

4.3(G) represent fractions and decimals to the tenths or hundredths as distances from zero on a number line

Comparison of Fractions

Readiness Standards

4.3(D) compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or <

Addition/Subtraction of Fractions

Readiness Standards

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

Supporting Standards

4.3(F) evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, 1/4, 1/2, 3/4, and 1, referring to the same whole

4.3(A) **4.3 Number and operations.** The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:

(A) represent a fraction *a/b* as a sum of fractions 1/*b*, where *a* and *b* are whole numbers and *b* > 0, including when *a* > *b*

Stimulus

Word Problem	Verbal Description	Chart/Table	Graph
Equation/ Expression*	Manipulatives	Diagram/Image	Number Line
Base Ten Blocks	Measurement Tool	Formula	Geometric Figures

Item Types

Multiselect (2 pts)	Match Table Grid (2 pts)	Drag and Drop (1-2 pts)	Fraction Model (1-2 pts)
Hot Spot (1-2 pts)	Inline Choice (1-2 pts)	Number Line (1-2 pts)	Graphing (1-2 pts)
Text Entry (1-2 pts)	Equation Editor (1-2 pts)	Multiple Choice* (1 pt)	

Academic Vocabulary

denominator
numerator
unit fraction

Interesting Items

English
4.3(A) 2016 #6

Spanish
4.3(A) 2016 #6

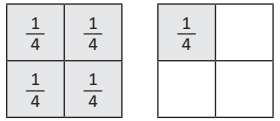
Role in Concept Development

Supports
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

Connection/ Relevance
As students represent fractions as the sum of unit fractions, they extend their understanding to adding fractions with like denominators.

When to Teach
Before 4.3(E)

Instructional Implications
Instruction should begin with students identifying the whole (e.g., a square has been divided into four equal parts; therefore, we are working with denominators of four). Instruction should extend to fractions greater than one whole. Students should label each part of the whole with its appropriate unit fraction (e.g., if a square represents one whole, then each part of the whole represents one-fourth).



As students begin counting each portion of a given fraction (e.g., one-fourth, two-fourths, three-fourths, etc.), instruction can then relate a number sentence to those actions (e.g., $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{5}{4}$). Students should understand that each part of the whole represents a unit fraction (e.g., $\frac{1}{4}$), and as they count each unit fraction, they orally state its cumulative sum. Students extend the sums of fractions in more than one way [see 4.3(B)].

Learning from Mistakes
Students may make the following mistakes:
- Adding the numerators and denominators
- Not understanding adding fractions as joining and separating parts of the same whole

4.3 Number and operations. The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:

4.3(B) **(B) decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations**

Stimulus

Word Problem	Verbal Description	Chart/Table	Graph
Equation/ Expression*	Manipulatives	Diagram/Image*	Number Line
Base Ten Blocks	Measurement Tool	Formula	Geometric Figures

Item Types

Multiselect (2 pts)	Match Table Grid (2 pts)	Drag and Drop (1-2 pts)	Fraction Model (1-2 pts)
Hot Spot (1-2 pts)	Inline Choice (1-2 pts)	Number Line (1-2 pts)	Graphing (1-2 pts)
Text Entry (1-2 pts)	Equation Editor (1-2 pts)	Multiple Choice* (1 pt)	

Academic Vocabulary

denominator
numerator

Interesting Items

English
4.3(B) 2023 #15
4.3(B) 2019 #14
4.3(B) 2018 #23

Spanish
4.3(B) 2015 #5

Role in Concept Development

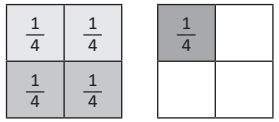
Supports
4.3(E) represent and solve addition and subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operations

Connection/ Relevance
As students decompose fractions as the sum of fractions with like denominators in more than one way, they extend that understanding to adding fractions with like denominators. This includes the use of whole numbers in addition of fractions.

When to Teach
Before 4.3(E)

Instructional Implications
In conjunction with 4.3(A), as students represent improper fractions as the sum of fractions (e.g., $\frac{5}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$), instruction should extend the representation of those number sentences to more than one way (e.g., $\frac{5}{4} = \frac{2}{4} + \frac{2}{4} + \frac{1}{4}$; $\frac{5}{4} = \frac{3}{4} + \frac{2}{4}$; $\frac{5}{4} = \frac{4}{4} + \frac{1}{4}$, etc.).

It is imperative that instruction relate each component of the number sentence to the pictorial model as a means of moving students from the concrete to the abstract understanding (e.g., $\frac{5}{4} = \frac{2}{4} + \frac{2}{4} + \frac{1}{4}$; students shade each portion of the area model a different color to represent the different addends of the equation). In alignment with 4.3(E), equations are limited to fractions with like denominators only. Instruction should include examples with whole numbers and improper fractions.



Learning from Mistakes
Students may make the following mistakes:
- Adding the numerators and denominators
- Not understanding adding fractions as joining and separating parts of the same whole
- Identifying the equal sign as "the answer is coming" instead of equal expressions (e.g., $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4} + \frac{4}{4}$ instead of $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4}$)*

4.2(G) Readiness

Subcluster: Equivalency of Fractions

TEKS Scaffold

TEKS	Student Expectation
6.5(C)	use equivalent fractions, decimals, and percents to show equal parts of the same whole (S)
4.2(G)	**4.2 Number and operations.** The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to: **(G) relate decimals to fractions that name tenths and hundredths**
4.3(G)	represent fractions and decimals to the tenths or hundredths as distances from zero on a number line (S)
3.3(F)	represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines (R)

Stimulus

Word Problem*	Verbal Description	Chart/Table	Graph
Equation/ Expression*	Manipulatives	Diagram/Image*	Number Line
Base Ten Blocks	Measurement Tool	Formula	Geometric Figures

Item Types

Multiselect (2 pts)	Match Table Grid (2 pts)	Drag and Drop (1-2 pts)	Fraction Model (1-2 pts)
Hot Spot (1-2 pts)	Inline Choice* (1-2 pts)	Number Line (1-2 pts)	Graphing (1-2 pts)
Text Entry (1-2 pts)	Equation Editor (1-2 pts)	Multiple Choice* (1 pt)	

Content Builder (see Appendix for Tree Diagram)

- Relate decimals to fractions that name tenths
- Relate decimals to fractions that name hundredths

Instructional Implications

In conjunction with 4.2(E), as students represent decimals using base ten blocks and money, instruction can relate those visuals to fractions (e.g., if a hundred flat represents one whole, then a ten long is one-tenth its value; if a hundred flat represents one whole, then a unit cube is one-hundredth its value; if it takes 10 dimes to make a dollar, then a dime is one-tenth the value of a dollar; if it takes 100 pennies to make a dollar, then a penny is one-hundredth the value of a dollar).

Because base ten blocks can represent both whole numbers and fractional parts of the whole, it is important to vary the whole (e.g., if the hundred flat represents a whole, then the ten long represents tenths and the unit cube represents hundredths. If the ten long represents a whole, then the hundred flat represents ten and the unit cube represents a tenth, etc.).

In conjunction with 4.3(G), number lines can also be used to demonstrate the relationship between decimals and fractions (e.g., 0.10 and $\frac{1}{10}$ are the same distance away from zero on a number line). Instruction should relate how the proper articulation of decimal representation yields the fractional representation (e.g., 0.7; "seven tenths"; $\frac{7}{10}$). Instruction should include mixed numbers and improper fraction models and equations as related to decimal equivalents and vice versa.

Learning from Mistakes

Students may make the following mistakes:

- Viewing the part to whole relationship as different values for decimals vs. fractional representations
- Overgeneralizing decimal notation and/or fraction notation and confusing the two (e.g., $\frac{1}{3}$ = 1.3 or $\frac{1}{3}$ = 0.3)*
- Having difficulty representing equivalent fractions for given decimals (.e.g., 1.5 = $1\frac{5}{10}$; $1\frac{50}{100}$; $\frac{15}{10}$)*

Academic Vocabulary

hundredths*
tenths

Interesting Items

English	*Spanish*
4.2(G) 2024 #19	4.2(G) 2021 #8
4.2(G) 2023 #13	4.2(G) 2018 #15
4.2(G) 2023 #28	4.2(G) 2017 #1
4.2(G) 2022 #15	4.2(G) 2016 #22
4.2(G) 2021 #8	

4.3 Number and operations. The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:

4.3(C) **(C) determine if two given fractions are equivalent using a variety of methods**

Stimulus

Word Problem	Verbal Description*	Chart/Table	Graph
Equation/ Expression	Manipulatives	Diagram/Image	Number Line
Base Ten Blocks	Measurement Tool	Formula	Geometric Figures

Item Types

Multiselect (2 pts)	Match Table Grid (2 pts)	Drag and Drop (1-2 pts)	Fraction Model (1-2 pts)
Hot Spot (1-2 pts)	Inline Choice (1-2 pts)	Number Line (1-2 pts)	Graphing (1-2 pts)
Text Entry (1-2 pts)	Equation Editor (1-2 pts)	Multiple Choice* (1 pt)	

Academic Vocabulary

denominator*
equal parts/equal shares
equivalent fraction*
identity property
improper fraction
mixed number*
numerator*
simplified form
whole

Interesting Items

English
4.3(C) 2024 #17

Spanish
4.3(C) 2015 #6

Role in Concept Development

Supports
4.3(D) compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or <

Connection/ Relevance
Determining if two fractions are equivalent supports students in being able to compare and order fractions with different denominators.

When to Teach
Before/Prerequisite to 4.3(D)

Instructional Implications
Instruction should include a variety of methods to determine if two fractions are equivalent (e.g., manipulatives, number lines, fractions strips, etc.). It is imperative for instruction to progress from concrete object to pictorial models before introducing the multiplicative identity property (i.e. a number multiplied by one will not change the value of the number).

Instruction should model how subdividing each of the equal parts of any fraction representation into "*n*" smaller parts means you have essentially multiplied both the numerator and denominator by "*n*." This action has not changed the value of the fraction.

Equivalent fractions include the study of fractions in simplified form, improper fractions, and mixed numbers.

Learning from Mistakes
Students may make the following mistakes:
- Misapplying additive ideas when finding equivalent fractions (e.g., $\frac{2}{6} = \frac{3}{7}$ because 2 + 1 = 3 and 6 + 1 = 7)
- Viewing an equivalent fraction with a larger denominator as having a larger value than that of a smaller denominator (e.g., $\frac{1}{2}$ is smaller than $\frac{2}{4}$ because 2 is smaller than 4)*
- Not relating area to determining equivalency of fractions (e.g., a square divided into two equal triangles is a different amount of area as a square divided into two equal rectangles; the triangle and rectangle do not represent half of the square)
- Not relating distance on a number line to determining equivalency of fractions (e.g., $\frac{1}{2}$ is a shorter distance away from zero than $\frac{2}{4}$ because 2 is smaller than 4)
- Not understanding that compared fractions must be fractions of the same whole

4.3(G) **4.3 Number and operations.** The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:

(G) represent fractions and decimals to the tenths or hundredths as distances from zero on a number line

Stimulus

Word Problem	Verbal Description	Chart/Table	Graph
Equation/ Expression	Manipulatives	Diagram/Image	Number Line
Base Ten Blocks	Measurement Tool	Formula	Geometric Figures

Item Types

Multiselect (2 pts)	Match Table Grid (2 pts)	Drag and Drop (1-2 pts)	Fraction Model (1-2 pts)
Hot Spot (1-2 pts)	Inline Choice (1-2 pts)	Number Line (1-2 pts)	Graphing (1-2 pts)
Text Entry (1-2 pts)	Equation Editor (1-2 pts)	Multiple Choice* (1 pt)	

Academic Vocabulary

hundredths*
tenths

Interesting Items

English
N/A

Spanish
N/A

Role in Concept Development

Supports

- 4.2(G) relate decimals to fractions that name tenths and hundredths
- 5.2(B) compare and order two decimals to thousandths and represent comparisons using the symbols >, <, or =

Connection/ Relevance

Locating fractional and decimal values as a specific point on a number line supports students in comparing/ordering decimals in Grade 5. When students identify decimal and fractional values on a number line, they begin to relate the equivalent values of tenths (0.10; $\frac{1}{10}$) and hundredths (0.01; $\frac{1}{100}$) as they fall on the same point on the number line.

When to Teach

With 4.2(G)

Instructional Implications

Instruction is limited to representing decimals to the tenths and hundredths on a number line. Students use number lines containing intervals that are divided equally between zero and one whole. Students are asked to represent a given decimal/fractional value on a number line.

In conjunction with 4.3(C), instruction should include decimals that have been developed from equivalent fractions with denominators that can be simplified from or to 10 or 100 (e.g., 0.6 = $\frac{6}{10}$ = $\frac{3}{5}$ or $\frac{1}{4}$ = $\frac{25}{100}$ = 0.25).

Learning from Mistakes

Students may make the following mistakes:

- Identifying the number of tick marks between two given whole numbers instead of the number of unit spaces (hops) when determining the fractional representations on a number line
- Not relating distance on a number line to determining equivalency of decimals (e.g., 0.5 is a shorter distance away from zero than 0.50 because 5 is smaller than 50)

4.3(D) Readiness

Subcluster: Comparison of Fractions

TEKS Scaffold

TEKS	Student Expectation
6.2(D)	order a set of rational numbers arising from mathematical and real-world contexts (R)
4.3(D)	**4.3 Number and operations.** The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to: **(D) compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or <**
3.3(H)	compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models (R)
2.3(B)	explain that the more fractional parts used to make a whole, the smaller the part; and the fewer the fractional parts, the larger the part (R)

Stimulus

Word Problem*	Verbal Description*	Chart/Table	Graph
Equation/ Expression*	Manipulatives	Diagram/Image*	Number Line
Base Ten Blocks	Measurement Tool	Formula	Geometric Figures

Item Types

Multiselect* (2 pts)	Match Table Grid (2 pts)	Drag and Drop (1-2 pts)	Fraction Model (1-2 pts)
Hot Spot (1-2 pts)	Inline Choice (1-2 pts)	Number Line (1-2 pts)	Graphing (1-2 pts)
Text Entry (1-2 pts)	Equation Editor (1-2 pts)	Multiple Choice* (1 pt)	

Content Builder (see Appendix for Tree Diagram)

- Compare two fractions with different numerators and different denominators
- Represent the comparison of fractions using the symbols >, =, or <

Instructional Implications

Students compare fractions with unlike denominators in a variety of ways (e.g., concrete objects, pictorially, number line, and the identity property). In conjunction with 4.3(C), as students begin to understand how to employ the use of the multiplicative identity property to determine if two fractions are equivalent, instruction can extend its use to comparing fractions (e.g., $\frac{2}{3} > \frac{1}{4}$ because $\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$ and $\frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$ and $\frac{8}{12} > \frac{3}{12}$).

It is imperative that the pictorial representation relates to use of the identity property in order to move students from the concrete to abstract understanding. Students should only compare two fractions; they do not have to order three or more. Encourage students to state two comparison statements to ensure understanding (e.g., $\frac{3}{8} < \frac{3}{6}$ and $\frac{3}{6} > \frac{3}{8}$).

Learning from Mistakes

Students may make the following mistakes:

- Not understanding that the compared fractions relate to the same whole*
- Not understanding that larger denominators yield smaller parts of a whole; smaller denominators yield larger parts of a whole*
- Overgeneralizing the idea that "the bigger the denominator, the smaller the part" (and vice versa) by ignoring the numerators when comparing fractions (e.g., $\frac{1}{3} > \frac{3}{5}$ because thirds are greater than fifths)*
- Not viewing the comparison statement $\frac{3}{8} < \frac{3}{6}$ is the same as $\frac{3}{6} > \frac{3}{8}$ *
- Having difficulty comparing improper fractions with mixed numbers*
- Relying on a trick to determine directionality (e.g., the alligator's mouth eats the bigger number) or not reading comparison symbols correctly (e.g., not reading the comparison statement from left to right)

Academic Vocabulary

< (less than)*
> (greater than)*
common denominator*
denominator
numerator

Interesting Items

English	*Spanish*
4.3(D) 2024 #8	4.3(D) 2022 #13
4.3(D) 2024 #22	4.3(D) 2021 #28
4.3(D) 2023 #26	4.3(D) 2019 #9
4.3(D) 2022 #13	4.3(D) 2015 #7
4.3(D) 2021 #28	
4.3(D) 2019 #9	

4.3(E) Readiness

Subcluster: Addition/Subtraction of Fractions

TEKS Scaffold

TEKS	Student Expectation
5.3(H)	represent and solve addition and subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations (S)
4.3(E)	**4.3 Number and operations.** The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to: **(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**
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* (S)
3.3(C)	explain that the unit fraction 1/*b* represents the quantity formed by one part of a whole that has been partitioned into *b* equal parts where *b* is a non-zero whole number (S)

Stimulus

Word Problem*	Verbal Description*	Chart/Table	Graph
Equation/ Expression*	Manipulatives	Diagram/Image*	Number Line
Base Ten Blocks	Measurement Tool	Formula	Geometric Figures

Item Types

Multiselect (2 pts)	Match Table Grid (2 pts)	Drag and Drop (1-2 pts)	Fraction Model (1-2 pts)
Hot Spot (1-2 pts)	Inline Choice (1-2 pts)	Number Line (1-2 pts)	Graphing (1-2 pts)
Text Entry (1-2 pts)	Equation Editor* (1-2 pts)	Multiple Choice* (1 pt)	

Content Builder (see Appendix for Tree Diagram)

- Represent addition of fractions with equal denominators using:
  - objects
  - pictorial models
  - number lines
  - properties of operations
- Represent subtraction of fractions with equal denominators using:
  - objects
  - pictorial models
  - number lines
  - properties of operations
- Represent addition and subtraction of fractions with equal denominators using:
  - objects
  - pictorial models
  - number lines
  - properties of operations
- Solve addition of fractions with equal denominators using:
  - objects
  - pictorial models
  - number lines
  - properties of operations
- Solve subtraction of fractions with equal denominators using:
  - objects
  - pictorial models
  - number lines
  - properties of operations
- Solve addition and subtraction of fractions with equal denominators using:
  - objects
  - pictorial models
  - number lines
  - properties of operations

Instructional Implications

Instruction is limited to the addition and subtraction of fractions with like denominators. In conjunction with 4.3(B), students continue to use manipulatives and pictorial models to demonstrate their concrete understanding of addition/subtraction of fractions with like denominators. Instruction should include the use of improper fractions and mixed numbers.

Instruction then moves to the use of number lines. For example:

- Represent $\frac{5}{4} + \frac{1}{4}$ on a number line: Begin with a point on $\frac{5}{4}$ then model the movement of one-fourth to the right, landing on $\frac{6}{4}$ or $1\frac{2}{4}$ or $1\frac{1}{2}$
- Demonstrate properties of operations: $\frac{5}{4} + \frac{1}{4} = (\frac{4}{4} + \frac{1}{4}) + \frac{1}{4} = \frac{4}{4} + (\frac{1}{4} + \frac{1}{4}) = 1 + \frac{2}{4} = 1\frac{2}{4}$ or $1\frac{1}{2}$

Learning from Mistakes

Students may make the following mistakes:

- Adding the numerators and denominators*
- Having difficulty identifying the whole when given a set of objects*
- Not understanding adding and subtracting fractions as joining and separating parts of the same whole
- Not recognizing that the solution to an addition/subtraction problem can be represented as an improper fraction*

Academic Vocabulary

denominator
difference
numerator
sum

Interesting Items

English

4.3(E) 2024 #14
4.3(E) 2023 #29
4.3(E) 2021 #2
4.3(E) 2019 #24
4.3(E) 2017 #18

Spanish

4.3(E) 2024 #14
4.3(E) 2023 #29
4.3(E) 2021 #2
4.3(E) 2021 #25
4.3(E) 2019 #24
4.3(E) 2018 #18
4.3(E) 2017 #18

4.3(F) **4.3 Number and operations.** The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:

(F) evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, 1/4, 1/2, 3/4, and 1, referring to the same whole

Stimulus

Word Problem*	Verbal Description*	Chart/Table	Graph
Equation/ Expression	Manipulatives	Diagram/Image	Number Line
Base Ten Blocks	Measurement Tool	Formula	Geometric Figures

Item Types

Multiselect (2 pts)	Match Table Grid (2 pts)	Drag and Drop (1-2 pts)	Fraction Model (1-2 pts)
Hot Spot (1-2 pts)	Inline Choice (1-2 pts)	Number Line (1-2 pts)	Graphing (1-2 pts)
Text Entry (1-2 pts)	Equation Editor (1-2 pts)	Multiple Choice* (1 pt)	

Academic Vocabulary

benchmark fraction
difference
sum

Interesting Items

English
4.3(F) 2023 #16
4.3(F) 2022 #5

Spanish
4.3(F) 2018 #21
4.3(F) 2015 #9

Role in Concept Development

Supports
- 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
- 5.3(K) add and subtract positive rational numbers fluently

Connection/ Relevance
Through the use of benchmarking of fractions, students are able to estimate prior to solving problems and determine if a solution is reasonable.

When to Teach
With 4.3(E)

Instructional Implications
Instruction should begin with students visually representing the fractional amounts with concrete objects, pictorial models, or the use of the number line to observe the positioning being closer to 0, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, or 1.

To support students with benchmarking to the nearest half and/or fourth, students should identify the total number of parts that make up a whole (e.g., in the fraction $\frac{3}{8}$, eight is the denominator), determine half the amount of the denominator (e.g., half of 8 is 4; $\frac{3}{8}$ is less than half), and determine a fourth by taking half of half (e.g., half of 8 is 4 and half of 4 is 2; $\frac{3}{8}$ is more than $\frac{1}{4}$).

Learning from Mistakes
Students may make the following mistakes:
- Misapplying rules for whole number comparisons in fraction situations (e.g., $\frac{1}{6}$ is more than $\frac{1}{2}$ because 6 is larger than 2)*
- Having difficulty identifying the whole and/or half of a whole when a visual is not given*