

DesCartes: A Continuum of Learning®

Mathematics

Goal: Number & Operations-Fractions

RIT Score Range: < 181
Statements Last Updated: Aug 7, 2012

Skills and Concepts to Develop (50% Probability*) < 181	Skills and Concepts to Introduce (27% Probability*) 181 - 190
Develop Understanding of Fractions as Numbers <ul style="list-style-type: none"> • Represents $\frac{1}{2}$ with a diagram or model • Represents $\frac{1}{4}$ with a diagram or model • Identifies one-half from a region or set 	Develop Understanding of Fractions as Numbers <ul style="list-style-type: none"> • Identifies $\frac{2}{3}$ or $\frac{3}{3}$ from a region or set • Identifies tenths from a region or set • Identifies eighths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Identifies $\frac{1}{4}$ from a region or set • Represents $\frac{3}{4}$ with a diagram or model • Identifies equal parts by using models • Identifies $\frac{1}{2}$ from a region or set • Identifies one-half from a region or set • Identifies $\frac{2}{4}$, $\frac{3}{4}$, or $\frac{4}{4}$ from a region or set
Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide
<i>New Vocabulary:</i> fourth, thirds	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> None	<i>New Signs and Symbols:</i> = is equal to

Explanatory Notes

* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and concepts to Enhance (73% Probability*) < 181	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
Develop Understanding of Fractions as Numbers <ul style="list-style-type: none"> • Represents $\frac{1}{2}$ with a diagram or model • Represents $\frac{1}{4}$ with a diagram or model • Identifies one-half from a region or set 	Develop Understanding of Fractions as Numbers <ul style="list-style-type: none"> • Identifies $\frac{2}{3}$ or $\frac{3}{3}$ from a region or set • Identifies tenths from a region or set • Identifies eighths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Identifies $\frac{1}{4}$ from a region or set • Represents $\frac{3}{4}$ with a diagram or model • Identifies equal parts by using models • Identifies $\frac{1}{2}$ from a region or set • Identifies one-half from a region or set • Identifies $\frac{2}{4}$, $\frac{3}{4}$, or $\frac{4}{4}$ from a region or set 	Develop Understanding of Fractions as Numbers <ul style="list-style-type: none"> • Matches numeric and visual representation of equivalent fractions • Represents $\frac{1}{3}$ with a diagram or model • Represents fractions with denominators other than 2, 3, 4 with a diagram or model • Identifies $\frac{1}{4}$ from a region or set • Identifies $\frac{1}{3}$ from a region or set • Identifies $\frac{2}{3}$ or $\frac{3}{3}$ from a region or set • Identifies tenths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Identifies equivalent fractions using visual representations • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) • Writes the missing number in a proportion using basic facts
Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide <ul style="list-style-type: none"> • Subtracts fractions with like denominators without reducing • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Uses models to add and subtract fractions and connect the actions to algorithms • Solves real-world 1-step problems involving multiplication or division of a whole number by a fraction
<i>New Vocabulary:</i> fourth, thirds	<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> None	<i>New Signs and Symbols:</i> = is equal to	<i>New Signs and Symbols:</i> - subtraction, variable

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 181 - 190	Skills and Concepts to Develop (50% Probability*) 191 - 200	Skills and Concepts to Introduce (27% Probability*) 201 - 210
Develop Understanding of Fractions as Numbers <ul style="list-style-type: none"> Identifies $\frac{2}{3}$ or $\frac{3}{3}$ from a region or set Identifies tenths from a region or set Identifies eighths from a region or set Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set Identifies $\frac{1}{4}$ from a region or set Represents $\frac{3}{4}$ with a diagram or model Identifies equal parts by using models Identifies $\frac{1}{2}$ from a region or set Identifies one-half from a region or set Identifies $\frac{2}{4}$, $\frac{3}{4}$, or $\frac{4}{4}$ from a region or set 	Develop Understanding of Fractions as Numbers <ul style="list-style-type: none"> Matches numeric and visual representation of equivalent fractions Represents $\frac{1}{3}$ with a diagram or model Represents fractions with denominators other than 2, 3, 4 with a diagram or model Identifies $\frac{1}{4}$ from a region or set Identifies $\frac{1}{3}$ from a region or set Identifies $\frac{2}{3}$ or $\frac{3}{3}$ from a region or set Identifies tenths from a region or set Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set Identifies equivalent fractions using visual representations Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) Writes the missing number in a proportion using basic facts 	Develop Understanding of Fractions as Numbers <ul style="list-style-type: none"> Orders fractions on a number line Identifies halves of a region using nonadjacent parts Identifies equivalent fractions using visual representations Expresses "1" in many different ways (e.g., $\frac{3}{3}$, $\frac{4}{4}$) Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters) Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10) Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) Writes a terminating decimal as a fraction or mixed number Writes the missing number in a proportion using basic facts
Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide <ul style="list-style-type: none"> Subtracts fractions with like denominators without reducing Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators Uses models to add and subtract fractions and connect the actions to algorithms Solves real-world 1-step problems involving multiplication or division of a whole number by a fraction 	Fractions: Add, Subtract, Multiply, & Divide <ul style="list-style-type: none"> Multiplies a fraction by a fraction without reducing to simplest form (simple problem) Adds fractions with like denominators without reducing Adds whole numbers and fractions Uses models to add and subtract fractions and connect the actions to algorithms Subtracts fractions with like denominators without reducing Subtracts mixed fractions with like denominators with no regrouping Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators
<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> biggest
<i>New Signs and Symbols:</i> = is equal to	<i>New Signs and Symbols:</i> - subtraction, variable	<i>New Signs and Symbols:</i> + addition, ¢ cent sign, × multiplication

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 191 - 200	Skills and Concepts to Develop (50% Probability*) 201 - 210	Skills and Concepts to Introduce (27% Probability*) 211 - 220
<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> Matches numeric and visual representation of equivalent fractions Represents $\frac{1}{3}$ with a diagram or model Represents fractions with denominators other than 2, 3, 4 with a diagram or model Identifies $\frac{1}{4}$ from a region or set Identifies $\frac{1}{3}$ from a region or set Identifies $\frac{2}{3}$ or $\frac{3}{3}$ from a region or set Identifies tenths from a region or set Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set Identifies equivalent fractions using visual representations Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) Writes the missing number in a proportion using basic facts 	<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> Orders fractions on a number line Identifies halves of a region using nonadjacent parts Identifies equivalent fractions using visual representations Expresses "1" in many different ways (e.g., $\frac{3}{3}$, $\frac{4}{4}$) Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters) Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10) Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) Writes a terminating decimal as a fraction or mixed number Writes the missing number in a proportion using basic facts 	<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 Converts fractions to lowest terms Identifies equivalent fractions using visual representations Identifies a fractions in lowest terms from a region or set Identifies eighths, reduced to lowest terms, from a region or set Determines simple equivalent fractions using multiples Compares fractions on a number line Compares fractions greater than or less than a given fraction using visual representations Compares fractions and mixed numbers Compares fractions and mixed numbers using symbols Orders fractions on a number line Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) Expresses a simple fraction as a decimal
<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Subtracts fractions with like denominators without reducing Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators Uses models to add and subtract fractions and connect the actions to algorithms Solves real-world 1-step problems involving multiplication or division of a whole number by a fraction 	<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Multiplies a fraction by a fraction without reducing to simplest form (simple problem) Adds fractions with like denominators without reducing Adds whole numbers and fractions Uses models to add and subtract fractions and connect the actions to algorithms Subtracts fractions with like denominators without reducing Subtracts mixed fractions with like denominators with no regrouping Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators 	<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Adds fractions with like denominators without reducing Adds fractions with like denominators with reducing or converting to a mixed fraction Adds fractions with unlike denominators without reducing Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths) Subtracts fractions with unlike denominators without reducing Subtracts mixed fractions with like denominators with no regrouping Subtracts mixed fractions with unlike denominators with no regrouping Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Uses models to multiply and divide fractions and connect the actions to algorithms Multiplies a fraction by a fraction where reducing to simplest form is necessary Multiplies a fraction by a whole number Solves 1-step real-world problems involving fractions with multiplication and division
<p><i>New Vocabulary:</i> None</p>	<p><i>New Vocabulary:</i> biggest</p>	<p><i>New Vocabulary:</i> lowest term, lowest terms, reduce, triple</p>
<p><i>New Signs and Symbols:</i> - subtraction, variable</p>	<p><i>New Signs and Symbols:</i> + addition, ¢ cent sign, x multiplication</p>	<p><i>New Signs and Symbols:</i> > greater than, < less than, ≠ not equal to</p>

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 201 - 210	Skills and Concepts to Develop (50% Probability*) 211 - 220	Skills and Concepts to Introduce (27% Probability*) 221 - 230
<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> • Orders fractions on a number line • Identifies halves of a region using nonadjacent parts • Identifies equivalent fractions using visual representations • Expresses "1" in many different ways (e.g., 3/3, 4/4) • Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters) • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10) • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) • Writes a terminating decimal as a fraction or mixed number • Writes the missing number in a proportion using basic facts 	<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 • Converts fractions to lowest terms • Identifies equivalent fractions using visual representations • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Determines simple equivalent fractions using multiples • Compares fractions on a number line • Compares fractions greater than or less than a given fraction using visual representations • Compares fractions and mixed numbers • Compares fractions and mixed numbers using symbols • Orders fractions on a number line • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) • Expresses a simple fraction as a decimal 	<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> • Identifies a fractions in lowest terms from a region or set • Determines simple equivalent fractions using multiples • Determines equivalent fractions using multiples • Compares fractions (e.g., comparing numerators and denominators) • Writes a decimal for a shaded region to the hundredths place • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10
<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> • Multiplies a fraction by a fraction without reducing to simplest form (simple problem) • Adds fractions with like denominators without reducing • Adds whole numbers and fractions • Uses models to add and subtract fractions and connect the actions to algorithms • Subtracts fractions with like denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators 	<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> • Adds fractions with like denominators without reducing • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) • Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths) • Subtracts fractions with unlike denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts mixed fractions with unlike denominators with no regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Uses models to multiply and divide fractions and connect the actions to algorithms • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Solves 1-step real-world problems involving fractions with multiplication and division 	<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) • Adds mixed fractions where converting from improper fractions is necessary • Subtracts fractions with like denominators with reducing • Subtracts fractions with unlike denominators without reducing • Subtracts fractions with unlike denominators with reducing • Subtracts mixed fractions with unlike denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Uses models to multiply and divide fractions and connect the actions to algorithms • Multiplies a fraction by a fraction without reducing to simplest form (complex problem)

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Skills and concepts to Enhance (73% Probability*) 201 - 210	Skills and Concepts to Develop (50% Probability*) 211 - 220	Skills and Concepts to Introduce (27% Probability*) 221 - 230
Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide
		<ul style="list-style-type: none"> • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Multiplies mixed fractions • Solves 1-step real-world problems involving fractions with multiplication and division • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions) • Uses alternative algorithms to explain the meaning of "fraction"
<i>New Vocabulary:</i> biggest	<i>New Vocabulary:</i> lowest term, lowest terms, reduce, triple	<i>New Vocabulary:</i> short
<i>New Signs and Symbols:</i> + addition, ¢ cent sign, × multiplication	<i>New Signs and Symbols:</i> > greater than, < less than, ≠ not equal to	<i>New Signs and Symbols:</i> ÷ division, \$ dollar sign

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 211 - 220	Skills and Concepts to Develop (50% Probability*) 221 - 230	Skills and Concepts to Introduce (27% Probability*) 231 - 240
<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 Converts fractions to lowest terms Identifies equivalent fractions using visual representations Identifies a fractions in lowest terms from a region or set Identifies eighths, reduced to lowest terms, from a region or set Determines simple equivalent fractions using multiples Compares fractions on a number line Compares fractions greater than or less than a given fraction using visual representations Compares fractions and mixed numbers Compares fractions and mixed numbers using symbols Orders fractions on a number line Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) Expresses a simple fraction as a decimal 	<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> Identifies a fractions in lowest terms from a region or set Determines simple equivalent fractions using multiples Determines equivalent fractions using multiples Compares fractions (e.g., comparing numerators and denominators) Writes a decimal for a shaded region to the hundredths place Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 	<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> Compares fractions (e.g., comparing numerators and denominators) Writes a fraction as a decimal and vice versa Compares and orders decimal and fractional coordinates on a number line
<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Adds fractions with like denominators without reducing Adds fractions with like denominators with reducing or converting to a mixed fraction Adds fractions with unlike denominators without reducing Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths) Subtracts fractions with unlike denominators without reducing Subtracts mixed fractions with like denominators with no regrouping Subtracts mixed fractions with unlike denominators with no regrouping Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Uses models to multiply and divide fractions and connect the actions to algorithms Multiplies a fraction by a fraction where reducing to simplest form is necessary Multiplies a fraction by a whole number Solves 1-step real-world problems involving fractions with multiplication and division 	<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Adds fractions with like denominators with reducing or converting to a mixed fraction Adds fractions with unlike denominators without reducing Adds fractions with unlike denominators with reducing or converting to a mixed fraction Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) Adds mixed fractions where converting from improper fractions is necessary Subtracts fractions with like denominators with reducing Subtracts fractions with unlike denominators without reducing Subtracts fractions with unlike denominators with reducing Subtracts mixed fractions with unlike denominators with no regrouping Subtracts whole numbers, fractions, and mixed fractions Subtracts whole numbers, fractions, and mixed fractions with regrouping Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Uses models to multiply and divide fractions and connect the actions to algorithms Multiplies a fraction by a fraction without reducing to simplest form (complex problem) 	<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number Adds fractions with unlike denominators with reducing or converting to a mixed fraction Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) Adds mixed fractions where converting from improper fractions is necessary Subtracts whole numbers, fractions, and mixed fractions Subtracts whole numbers, fractions, and mixed fractions with regrouping Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary Uses models to multiply and divide fractions and connect the actions to algorithms Multiplies mixed fractions Divides a whole number by a fraction Solves 2- or more step real-world problems involving fractions with multiplication and division Solves problems involving fractions (e.g., multiple operations, conversions)

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 211 - 220	Skills and Concepts to Develop (50% Probability*) 221 - 230	Skills and Concepts to Introduce (27% Probability*) 231 - 240
Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide
	<ul style="list-style-type: none"> • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Multiplies mixed fractions • Solves 1-step real-world problems involving fractions with multiplication and division • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions) • Uses alternative algorithms to explain the meaning of "fraction" 	
<i>New Vocabulary:</i> lowest term, lowest terms, reduce, triple	<i>New Vocabulary:</i> short	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> > greater than, < less than, ≠ not equal to	<i>New Signs and Symbols:</i> ÷ division, \$ dollar sign	<i>New Signs and Symbols:</i> None

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) > 240
<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> Identifies a fractions in lowest terms from a region or set Determines simple equivalent fractions using multiples Determines equivalent fractions using multiples Compares fractions (e.g., comparing numerators and denominators) Writes a decimal for a shaded region to the hundredths place Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 	<p>Develop Understanding of Fractions as Numbers</p> <ul style="list-style-type: none"> Compares fractions (e.g., comparing numerators and denominators) Writes a fraction as a decimal and vice versa Compares and orders decimal and fractional coordinates on a number line 	<p>Develop Understanding of Fractions as Numbers</p>
<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Adds fractions with like denominators with reducing or converting to a mixed fraction Adds fractions with unlike denominators without reducing Adds fractions with unlike denominators with reducing or converting to a mixed fraction Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) Adds mixed fractions where converting from improper fractions is necessary Subtracts fractions with like denominators with reducing Subtracts fractions with unlike denominators without reducing Subtracts fractions with unlike denominators with reducing Subtracts mixed fractions with unlike denominators with no regrouping Subtracts whole numbers, fractions, and mixed fractions Subtracts whole numbers, fractions, and mixed fractions with regrouping Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Uses models to multiply and divide fractions and connect the actions to algorithms Multiplies a fraction by a fraction without reducing to simplest form (complex problem) Multiplies a fraction by a fraction where reducing to simplest form is necessary Multiplies a fraction by a whole number Multiplies mixed fractions Solves 1-step real-world problems involving fractions with multiplication and division Solves 2- or more step real-world problems involving fractions with multiplication and division Solves problems involving fractions (e.g., multiple operations, conversions) 	<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number Adds fractions with unlike denominators with reducing or converting to a mixed fraction Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) Adds mixed fractions where converting from improper fractions is necessary Subtracts whole numbers, fractions, and mixed fractions Subtracts whole numbers, fractions, and mixed fractions with regrouping Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary Uses models to multiply and divide fractions and connect the actions to algorithms Multiplies mixed fractions Divides a whole number by a fraction Solves 2- or more step real-world problems involving fractions with multiplication and division Solves problems involving fractions (e.g., multiple operations, conversions) 	<p>Fractions: Add, Subtract, Multiply, & Divide</p> <ul style="list-style-type: none"> Solves open sentences with fractions Identifies the least common multiple of whole numbers

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Skills and concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) > 240
Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide
• Uses alternative algorithms to explain the meaning of "fraction"		
<i>New Vocabulary:</i> short	<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> ÷ division, \$ dollar sign	<i>New Signs and Symbols:</i> None	<i>New Signs and Symbols:</i> None

Explanatory Notes

* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and concepts to Enhance (73% Probability*) 231 - 240	Skills and Concepts to Develop (50% Probability*) > 240
Develop Understanding of Fractions as Numbers	Develop Understanding of Fractions as Numbers
<ul style="list-style-type: none"> Compares fractions (e.g., comparing numerators and denominators) Writes a fraction as a decimal and vice versa Compares and orders decimal and fractional coordinates on a number line 	
Fractions: Add, Subtract, Multiply, & Divide	Fractions: Add, Subtract, Multiply, & Divide
<ul style="list-style-type: none"> Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number Adds fractions with unlike denominators with reducing or converting to a mixed fraction Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) Adds mixed fractions where converting from improper fractions is necessary Subtracts whole numbers, fractions, and mixed fractions Subtracts whole numbers, fractions, and mixed fractions with regrouping Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary Uses models to multiply and divide fractions and connect the actions to algorithms Multiplies mixed fractions Divides a whole number by a fraction Solves 2- or more step real-world problems involving fractions with multiplication and division Solves problems involving fractions (e.g., multiple operations, conversions) 	<ul style="list-style-type: none"> Solves open sentences with fractions Identifies the least common multiple of whole numbers
<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> None	<i>New Signs and Symbols:</i> None

Explanatory Notes

* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.