

DesCartes: A Continuum of Learning®

Mathematics

Goal: Algebra, Functions, Expressions, & Equations

RIT Score Range: < 161
Statements Last Updated: Aug 7, 2012

Skills and Concepts to Develop (50% Probability*) < 161	Skills and Concepts to Introduce (27% Probability*) 161 - 170
Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities
<ul style="list-style-type: none"> • Uses models to construct whole number addition facts with addends through 10 	<ul style="list-style-type: none"> • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves basic-facts open sentences - addition and subtraction
Use Functions to Model Relationships	Use Functions to Model Relationships
<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> None	<i>New Signs and Symbols:</i> + addition, = is equal to, - subtraction, variable

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*) < 161	Skills and Concepts to Develop (50% Probability*) 161 - 170	Skills and Concepts to Introduce (27% Probability*) 171 - 180
Expressions & Properties of Operations	Expressions & Properties of Operations	Expressions & Properties of Operations
	<ul style="list-style-type: none"> • Uses models to construct subtraction facts with differences through 10 (whole numbers) 	<ul style="list-style-type: none"> • Writes equivalent forms of whole number expressions (e.g., $15 + 5 = 10 + 10$) • Adds 1-digit numbers with sums to 18 (with parentheses)
Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities
<ul style="list-style-type: none"> • Uses models to construct whole number addition facts with addends through 10 	<ul style="list-style-type: none"> • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves basic-facts open sentences - addition and subtraction 	<ul style="list-style-type: none"> • Determines the operation needed from a simple problem • Writes a number sentence for a simple problem solving situation • Solves problems using tally charts • Reads a chart or table - comparisons • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves real-world whole number addition problems with sums to 20 (start unknown) • Solves real-world whole number addition problems with sums to 100 (result unknown) • Represents a basic facts addition problem with a number sentence • Solves real-world whole number problems involving subtraction with numbers under 20 • Identifies the value of a collection of coins to \$1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (with picture of money) • Solves basic-facts open sentences - addition and subtraction • Solves linear equations with basic facts - 1-step addition using a letter for the variable • Solves basic facts open sentences - multiplication and division • Connects money with place value
Use Functions to Model Relationships	Use Functions to Model Relationships	Use Functions to Model Relationships
		<ul style="list-style-type: none"> • Extends a growing arithmetic pattern, defined by numbers • Analyzes a growing, arithmetic pattern with numbers to determine the rule
<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> None	<i>New Signs and Symbols:</i> + addition, = is equal to, - subtraction, variable	<i>New Signs and Symbols:</i> () order of operations, ¢ cent sign, \$ dollar sign, tally mark

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 161 - 170	Skills and Concepts to Develop (50% Probability*) 171 - 180	Skills and Concepts to Introduce (27% Probability*) 181 - 190
<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> • Uses models to construct subtraction facts with differences through 10 (whole numbers) 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> • Writes equivalent forms of whole number expressions (e.g., $15 + 5 = 10 + 10$) • Adds 1-digit numbers with sums to 18 (with parentheses) 	<p>Expressions & Properties of Operations</p>
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves basic-facts open sentences - addition and subtraction 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Determines the operation needed from a simple problem • Writes a number sentence for a simple problem solving situation • Solves problems using tally charts • Reads a chart or table - comparisons • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves real-world whole number addition problems with sums to 20 (start unknown) • Solves real-world whole number addition problems with sums to 100 (result unknown) • Represents a basic facts addition problem with a number sentence • Solves real-world whole number problems involving subtraction with numbers under 20 • Identifies the value of a collection of coins to \$1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (with picture of money) • Solves basic-facts open sentences - addition and subtraction • Solves linear equations with basic facts - 1-step addition using a letter for the variable • Solves basic facts open sentences - multiplication and division • Connects money with place value 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Solves real-world whole number problems involving subtraction with numbers 100 and under • Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only) • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (result unknown) • Solves real-world whole number problems involving subtraction with numbers under 20 • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves word problems involving basic whole number multiplication facts to 10×10 • Uses manipulatives to divide a small set of objects into groups of equal size • Solves real-world whole number problems involving addition and subtraction • Demonstrates an understanding of the inverse relationship between multiplication and division • Identifies the value of a collection of coins to \$1.00 (without picture of coins) • Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (with picture of money) • Finds equivalent combinations of coins with the same value • Combines a collection of coins and identifies the correct notation • Makes change to \$1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including \$5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on addition or subtraction real-world problems involving money up to \$5.00 • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances) • Solves linear equations with basic facts - 1-step addition using a letter for the variable • Solves 1-step open sentences with missing addends (numbers 100 and under)

Explanatory Notes

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DesCartes: A Continuum of Learning®

Mathematics

Goal: Algebra, Functions, Expressions, & Equations

RIT Score Range: 171 - 180
Statements Last Updated: Aug 7, 2012

Skills and concepts to Enhance (73% Probability*) 161 - 170	Skills and Concepts to Develop (50% Probability*) 171 - 180	Skills and Concepts to Introduce (27% Probability*) 181 - 190
Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities <ul style="list-style-type: none"> • Determines the operation needed from a simple problem • Writes a number sentence for a simple problem solving situation • Solves simple problems based on data from tally charts • Solves problems using tally charts
Use Functions to Model Relationships	Use Functions to Model Relationships <ul style="list-style-type: none"> • Extends a growing arithmetic pattern, defined by numbers • Analyzes a growing, arithmetic pattern with numbers to determine the rule 	Use Functions to Model Relationships <ul style="list-style-type: none"> • Analyzes a growing, arithmetic pattern with numbers to determine the rule • Extends a growing arithmetic pattern, defined by numbers
<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> changed, gave, left, left over, pennies, row, unifix cubes
<i>New Signs and Symbols:</i> + addition, = is equal to, - subtraction, variable	<i>New Signs and Symbols:</i> () order of operations, ¢ cent sign, \$ dollar sign, tally mark	<i>New Signs and Symbols:</i> ÷ division, × multiplication

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 171 - 180	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Determines the operation needed from a simple problem Writes a number sentence for a simple problem solving situation Solves problems using tally charts Reads a chart or table - comparisons Solves real-world whole number addition problems with sums to 20 (result unknown) Solves real-world whole number addition problems with sums to 20 (start unknown) Solves real-world whole number addition problems with sums to 100 (result unknown) Represents a basic facts addition problem with a number sentence Solves real-world whole number problems involving subtraction with numbers under 20 Identifies the value of a collection of coins to \$1.00 (with pictures of coins) Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (with picture of money) Solves basic-facts open sentences - addition and subtraction Solves linear equations with basic facts - 1-step addition using a letter for the variable Solves basic facts open sentences - multiplication and division Connects money with place value 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves real-world whole number problems involving subtraction with numbers 100 and under Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only) Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given Solves real-world whole number addition problems with sums to 100 (result unknown) Solves real-world whole number problems involving subtraction with numbers under 20 Solves real-world whole number problems involving subtraction with numbers under 1000 Solves word problems involving basic whole number multiplication facts to 10 x 10 Uses manipulatives to divide a small set of objects into groups of equal size Solves real-world whole number problems involving addition and subtraction Demonstrates an understanding of the inverse relationship between multiplication and division Identifies the value of a collection of coins to \$1.00 (without picture of coins) Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (with picture of money) Finds equivalent combinations of coins with the same value Combines a collection of coins and identifies the correct notation Makes change to \$1.00 by "counting on" or subtracting Computes with dollars and cents up to and including \$5.00 and converts to decimals (addition/subtraction only) Computes 1 operation on addition or subtraction real-world problems involving money up to \$5.00 Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances) Solves linear equations with basic facts - 1-step addition using a letter for the variable Solves 1-step open sentences with missing addends (numbers 100 and under) Determines the operation needed from a simple problem Writes a number sentence for a simple problem solving situation Solves simple problems based on data from tally charts Solves problems using tally charts 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves whole number addition word problems with sums over 1000 Solves real-world whole number problems involving subtraction with numbers 100 and under Solves real-world whole number problems involving subtraction with numbers under 1000 Solves whole number subtraction word problems with numbers over 1000 Solves word problems involving basic whole number multiplication facts to 10 x 10 Solves word problems involving whole number multiplication with numbers greater than 10 x 10 Uses manipulatives to divide a small set of objects into groups of equal size Solves word problems with whole number division facts with dividend and divisors less than 11 Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor) Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators Identifies the value of a collection of coins to \$1.00 (without picture of coins) Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (without picture of money) Finds equivalent combinations of coins with the same value Makes change to \$1.00 by "counting on" or subtracting Solves real-world problems involving decimals (not money) using addition and subtraction Computes with dollars and cents up to and including \$5.00 and converts to decimals (addition/subtraction only) Computes 1 operation on real-world problems involving money over \$5.00 (addition/subtraction only) Computes half price (multiplication/division) Computes with dollars and cents up to and including \$5.00 and converts to decimals (multiplication/division) Computes 1 operation on real-world problems involving money over \$5.00 (multiplication/division) Uses algebraic reasoning to solve problems involving equality relationships Solves 1-step open sentences with missing addends (numbers 100 and under) Solves 1-step open sentences with missing addends (numbers over 100)

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 171 - 180	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities <ul style="list-style-type: none"> • Solves simple open sentences with missing factors (numbers 100 and under) • Solves 2-step open sentences with missing addends • Determines the operation needed from a simple problem • Solves problems involving measurement of temperature • Solves problems using tally charts • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only) • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (change unknown)
Use Functions to Model Relationships <ul style="list-style-type: none"> • Extends a growing arithmetic pattern, defined by numbers • Analyzes a growing, arithmetic pattern with numbers to determine the rule 	Use Functions to Model Relationships <ul style="list-style-type: none"> • Analyzes a growing, arithmetic pattern with numbers to determine the rule • Extends a growing arithmetic pattern, defined by numbers 	Use Functions to Model Relationships <ul style="list-style-type: none"> • Analyzes a growing, arithmetic pattern with numbers to determine the rule • Solves problems using tables • Extends a growing arithmetic pattern, defined by objects or diagrams • Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels)
<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> changed, gave, left, left over, pennies, row, unifix cubes	<i>New Vocabulary:</i> deposit, each, longer
<i>New Signs and Symbols:</i> () order of operations, ¢ cent sign, \$ dollar sign, tally mark	<i>New Signs and Symbols:</i> ÷ division, × multiplication	<i>New Signs and Symbols:</i> °F degrees Fahrenheit, g gram, lb pound, min minute

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
Expressions & Properties of Operations	Expressions & Properties of Operations	Expressions & Properties of Operations
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves real-world whole number problems involving subtraction with numbers 100 and under Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only) Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given Solves real-world whole number addition problems with sums to 100 (result unknown) Solves real-world whole number problems involving subtraction with numbers under 20 Solves real-world whole number problems involving subtraction with numbers under 1000 Solves word problems involving basic whole number multiplication facts to 10 x 10 Uses manipulatives to divide a small set of objects into groups of equal size Solves real-world whole number problems involving addition and subtraction Demonstrates an understanding of the inverse relationship between multiplication and division Identifies the value of a collection of coins to \$1.00 (without picture of coins) Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (with picture of money) Finds equivalent combinations of coins with the same value Combines a collection of coins and identifies the correct notation Makes change to \$1.00 by "counting on" or subtracting Computes with dollars and cents up to and including \$5.00 and converts to decimals (addition/subtraction only) Computes 1 operation on addition or subtraction real-world problems involving money up to \$5.00 Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances) Solves linear equations with basic facts - 1-step addition using a letter for the variable Solves 1-step open sentences with missing addends (numbers 100 and under) Determines the operation needed from a simple problem 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Evaluates numerical expressions using grouping symbols (whole numbers only) Solves whole number addition word problems with sums over 1000 Solves real-world whole number problems involving subtraction with numbers 100 and under Solves real-world whole number problems involving subtraction with numbers under 1000 Solves whole number subtraction word problems with numbers over 1000 Solves word problems involving basic whole number multiplication facts to 10 x 10 Solves word problems involving whole number multiplication with numbers greater than 10 x 10 Uses manipulatives to divide a small set of objects into groups of equal size Solves word problems with whole number division facts with dividend and divisors less than 11 Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor) Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators Identifies the value of a collection of coins to \$1.00 (without picture of coins) Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (without picture of money) Finds equivalent combinations of coins with the same value Makes change to \$1.00 by "counting on" or subtracting Solves real-world problems involving decimals (not money) using addition and subtraction Computes with dollars and cents up to and including \$5.00 and converts to decimals (addition/subtraction only) Computes 1 operation on real-world problems involving money over \$5.00 (addition/subtraction only) Computes half price (multiplication/division) Computes with dollars and cents up to and including \$5.00 and converts to decimals (multiplication/division) Computes 1 operation on real-world problems involving money over \$5.00 (multiplication/division) Uses algebraic reasoning to solve problems involving equality relationships 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Evaluates numerical expressions using grouping symbols (whole numbers only) Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only) Uses rounding to estimate answers to 2-step problems involving money (using decimals) Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) Solves whole number subtraction word problems with numbers over 1000 Solves word problems involving whole number multiplication with numbers greater than 10 x 10 Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects) Solves word problems with whole number division facts with dividend and divisors less than 11 Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor) Solves whole number word problems with division over 10 x 10 Determines the remainder in a real-world problem (whole numbers) Uses division for multiple-step real-world problems (whole numbers) Solves real-world problems involving 2-step multiple operations, whole numbers only Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators Computes the value of multiple bills and coins (addition/subtraction only) Computes with dollars and cents up to and including \$5.00 and converts to decimals (multiplication/division) Computes addition and subtraction on multiple-step real-world problems involving money Computes money problems with multiple operations (addition/subtraction only) Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money Solves real-world problems using reasoning strategies Solves real-world problems involving addition and subtraction of integers Understands equivalence and extends the concept to number sentences involving variables (e.g., $8 + 2 = \square + 2$)

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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
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Writes a number sentence for a simple problem solving situation Solves simple problems based on data from tally charts Solves problems using tally charts 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves 1-step open sentences with missing addends (numbers 100 and under) Solves 1-step open sentences with missing addends (numbers over 100) Solves simple open sentences with missing factors (numbers 100 and under) Solves 2-step open sentences with missing addends Determines the operation needed from a simple problem Solves problems involving measurement of temperature Solves problems using tally charts Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only) Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given Solves real-world whole number addition problems with sums to 20 (change unknown) 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses algebraic reasoning to solve problems involving equality relationships Uses simple linear equations to represent problem situations Solves 1-step open sentences with missing addends (numbers over 100) Solves simple open sentences with missing factors (numbers 100 and under) Solves 2-step open sentences with missing addends Solves open sentences with basic-facts calculations on both sides of the sentence Knows the approximate size of a pound Knows the approximate size of a gram
<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Analyzes a growing, arithmetic pattern with numbers to determine the rule Extends a growing arithmetic pattern, defined by numbers 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Analyzes a growing, arithmetic pattern with numbers to determine the rule Solves problems using tables Extends a growing arithmetic pattern, defined by objects or diagrams Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels) 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Extends a growing arithmetic pattern, defined by objects or diagrams Describes a realistic situation using information given in a linear equation Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels) Completes a function table given a simple rule (e.g., $x + 2$) Determines the rule and completes a simple function machine output Solves problems using tables
<p><i>New Vocabulary:</i> changed, gave, left, left over, pennies, row, unifix cubes</p>	<p><i>New Vocabulary:</i> deposit, each, longer</p>	<p><i>New Vocabulary:</i> minimum, plus</p>
<p><i>New Signs and Symbols:</i> ÷ division, × multiplication</p>	<p><i>New Signs and Symbols:</i> °F degrees Fahrenheit, g gram, lb pound, min minute</p>	<p><i>New Signs and Symbols:</i> a.m., °C degrees Celsius, = is equal to, m meter/metre, - negative number, p.m., + positive number</p>

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>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Evaluates numerical expressions using grouping symbols (whole numbers only) 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Evaluates numerical expressions using grouping symbols (whole numbers only) 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Demonstrates an understanding of the distributive property of multiplication by decomposing a term Calculates the value of a power (e.g., $2^3 = 8$) Uses powers to represent 10, 100, 1000, 10,000, and 100,000
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves whole number addition word problems with sums over 1000 Solves real-world whole number problems involving subtraction with numbers 100 and under Solves real-world whole number problems involving subtraction with numbers under 1000 Solves whole number subtraction word problems with numbers over 1000 Solves word problems involving basic whole number multiplication facts to 10×10 Solves word problems involving whole number multiplication with numbers greater than 10×10 Uses manipulatives to divide a small set of objects into groups of equal size Solves word problems with whole number division facts with dividend and divisors less than 11 Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor) Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators Identifies the value of a collection of coins to \$1.00 (without picture of coins) Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (without picture of money) Finds equivalent combinations of coins with the same value Makes change to \$1.00 by "counting on" or subtracting Solves real-world problems involving decimals (not money) using addition and subtraction Computes with dollars and cents up to and including \$5.00 and converts to decimals (addition/subtraction only) Computes 1 operation on real-world problems involving money over \$5.00 (addition/subtraction only) Computes half price (multiplication/division) Computes with dollars and cents up to and including \$5.00 and converts to decimals (multiplication/division) Computes 1 operation on real-world problems involving money over \$5.00 (multiplication/division) 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only) Uses rounding to estimate answers to 2-step problems involving money (using decimals) Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) Solves whole number subtraction word problems with numbers over 1000 Solves word problems involving whole number multiplication with numbers greater than 10×10 Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects) Solves word problems with whole number division facts with dividend and divisors less than 11 Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor) Solves whole number word problems with division over 10×10 Determines the remainder in a real-world problem (whole numbers) Uses division for multiple-step real-world problems (whole numbers) Solves real-world problems involving 2-step multiple operations, whole numbers only Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators Computes the value of multiple bills and coins (addition/subtraction only) Computes with dollars and cents up to and including \$5.00 and converts to decimals (multiplication/division) Computes addition and subtraction on multiple-step real-world problems involving money Computes money problems with multiple operations (addition/subtraction only) Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money Solves real-world problems using reasoning strategies 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Extends a growing geometric pattern - using numbers Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only) Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only) Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only) Uses rounding to estimate answers to 2-step problems involving money (using decimals) Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects) Solves whole number word problems with division over 10×10 Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) Solves real-world problems involving 2-step multiple operations, whole numbers only Solves real-world multiple-step problems involving whole numbers Predicts the relative size of the answer when multiplying whole numbers Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Solves 1-step real-world problems involving fractions with multiplication and division Computes the value of multiple bills and coins (addition/subtraction only) Analyzes and computes 1 operation on real-world problems involving money over \$5.00 (addition/subtraction only) Analyzes and computes 1 operation on real-world problems involving money over \$5.00 (multiplication/division) Computes with dollars and cents over \$5.00 and converts to decimals (multiplication/division) Computes addition and subtraction on multiple-step real-world problems involving money Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money

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>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Uses algebraic reasoning to solve problems involving equality relationships • Solves 1-step open sentences with missing addends (numbers 100 and under) • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under) • Solves 2-step open sentences with missing addends • Determines the operation needed from a simple problem • Solves problems involving measurement of temperature • Solves problems using tally charts • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only) • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (change unknown) 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Solves real-world problems involving addition and subtraction of integers • Understands equivalence and extends the concept to number sentences involving variables (e.g., $8 + 2 = \square + 2$) • Uses algebraic reasoning to solve problems involving equality relationships • Uses simple linear equations to represent problem situations • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under) • Solves 2-step open sentences with missing addends • Solves open sentences with basic-facts calculations on both sides of the sentence • Knows the approximate size of a pound • Knows the approximate size of a gram 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Solves real-world problems involving addition and subtraction of integers • Understands equivalence and extends the concept to number sentences involving variables (e.g., $8 + 2 = \square + 2$) • Uses algebraic reasoning to solve problems involving equality relationships • Uses simple linear equations to represent problem situations • Solves simple open sentences with missing factors (numbers over 100) • Solves open sentences using the distributive property • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Solves open sentences with integers • Applies algebraic methods to solve theoretical problems • Selects and uses the appropriate type and size of unit in metric system (mass) • Solves simple problems involving measurement of weight • Solves simple problems involving capacity • Solves real-world problems using reasoning strategies
<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> • Analyzes a growing, arithmetic pattern with numbers to determine the rule • Solves problems using tables • Extends a growing arithmetic pattern, defined by objects or diagrams • Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels) 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> • Extends a growing arithmetic pattern, defined by objects or diagrams • Describes a realistic situation using information given in a linear equation • Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels) • Completes a function table given a simple rule (e.g., $x + 2$) • Determines the rule and completes a simple function machine output • Solves problems using tables 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> • Determines the rule and completes a simple function machine output • Solves problems involving simple functions • Looks for a growing pattern to solve a problem • Interprets data in line graphs (e.g., change over time) • Completes a function table given a simple rule (e.g., $x + 2$) • Determines the rule given a simple real-world function table (e.g., # Dogs compared to # Legs) • Uses a table of input/output values to represent patterns
<p><i>New Vocabulary:</i> deposit, each, longer</p>	<p><i>New Vocabulary:</i> minimum, plus</p>	<p><i>New Vocabulary:</i> coin, triple</p>
<p><i>New Signs and Symbols:</i> °F degrees Fahrenheit, g gram, lb pound, min minute</p>	<p><i>New Signs and Symbols:</i> a.m., °C degrees Celsius, = is equal to, m meter/metre, - negative number, p.m., + positive number</p>	<p><i>New Signs and Symbols:</i> () parenthesis around an integer, d distance, \$ dollar sign, mph miles per hour, t time</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>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Evaluates numerical expressions using grouping symbols (whole numbers only) 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Demonstrates an understanding of the distributive property of multiplication by decomposing a term Calculates the value of a power (e.g., $2^3 = 8$) Uses powers to represent 10, 100, 1000, 10,000, and 100,000 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$) Represents relationships of quantities in the form of an expression Uses basic operations on algebraic expressions (uses correct order of operations) Uses powers to represent 10, 100, 1000, 10,000, and 100,000 Writes a number expressed in scientific notation in standard form Models algorithms using place value concepts (multiplication and division with whole numbers) Uses the distributive property Calculates the value of a power (e.g., $2^3 = 8$) Solves problems involving simple interest rates with the formula Uses basic operations on algebraic expressions (substituting for unknowns) Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties Uses basic operations on algebraic expressions (expanding - monomial by a binomial) Demonstrates an understanding of properties (e.g., commutative, associative, distributive, properties of 0)
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only) Uses rounding to estimate answers to 2-step problems involving money (using decimals) Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) Solves whole number subtraction word problems with numbers over 1000 Solves word problems involving whole number multiplication with numbers greater than 10×10 Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects) Solves word problems with whole number division facts with dividend and divisors less than 11 Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor) Solves whole number word problems with division over 10×10 Determines the remainder in a real-world problem (whole numbers) Uses division for multiple-step real-world problems (whole numbers) 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Extends a growing geometric pattern - using numbers Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only) Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only) Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only) Uses rounding to estimate answers to 2-step problems involving money (using decimals) Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects) Solves whole number word problems with division over 10×10 Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) Solves real-world problems involving 2-step multiple operations, whole numbers only Solves real-world multiple-step problems involving whole numbers 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves 2-step linear equations Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only) Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only) Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) Solves real-world multiple-step problems involving whole numbers Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Divides a fraction by a fraction Divides a mixed fraction by a fraction 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)

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>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves real-world problems involving 2-step multiple operations, whole numbers only Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators Computes the value of multiple bills and coins (addition/subtraction only) Computes with dollars and cents up to and including \$5.00 and converts to decimals (multiplication/division) Computes addition and subtraction on multiple-step real-world problems involving money Computes money problems with multiple operations (addition/subtraction only) Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money Solves real-world problems using reasoning strategies Solves real-world problems involving addition and subtraction of integers Understands equivalence and extends the concept to number sentences involving variables (e.g., $8 + 2 = \square + 2$) Uses algebraic reasoning to solve problems involving equality relationships Uses simple linear equations to represent problem situations Solves 1-step open sentences with missing addends (numbers over 100) Solves simple open sentences with missing factors (numbers 100 and under) Solves 2-step open sentences with missing addends Solves open sentences with basic-facts calculations on both sides of the sentence Knows the approximate size of a pound Knows the approximate size of a gram 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Predicts the relative size of the answer when multiplying whole numbers Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Solves 1-step real-world problems involving fractions with multiplication and division Computes the value of multiple bills and coins (addition/subtraction only) Analyzes and computes 1 operation on real-world problems involving money over \$5.00 (addition/subtraction only) Analyzes and computes 1 operation on real-world problems involving money over \$5.00 (multiplication/division) Computes with dollars and cents over \$5.00 and converts to decimals (multiplication/division) Computes addition and subtraction on multiple-step real-world problems involving money Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money Solves real-world problems involving addition and subtraction of integers Understands equivalence and extends the concept to number sentences involving variables (e.g., $8 + 2 = \square + 2$) Uses algebraic reasoning to solve problems involving equality relationships Uses simple linear equations to represent problem situations Solves simple open sentences with missing factors (numbers over 100) Solves open sentences using the distributive property Solves open sentences with calculations on both sides of the sentence Solves 2-step open sentences with missing factors Solves 1-step linear equations Solves open sentences with integers Applies algebraic methods to solve theoretical problems Selects and uses the appropriate type and size of unit in metric system (mass) Solves simple problems involving measurement of weight Solves simple problems involving capacity Solves real-world problems using reasoning strategies 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Computes with dollars and cents over \$5.00 and converts to decimals (multiplication/division) Computes the value of multiple bills and coins (multiplication/division) Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) Solves real-world problems involving addition and subtraction of integers Solves problems involving addition and subtraction of integers Expresses a simple linear equation from a contextual situation Solves open sentences with calculations on both sides of the sentence Solves 2-step open sentences with missing factors Solves 1-step linear equations Solves linear equations with decimals Solves linear equations with integers Writes equivalent forms of algebraic equations using addition and subtraction Solves open sentences with decimals Solves linear equations in a real-world context using a given formula Applies algebraic methods to solve theoretical problems Applies algebraic methods to solve real-world problems Uses graphs to solve simple systems of linear equations Applies systems-of-linear-equations methods to solve theoretical problems Solves real-world problems using reasoning strategies
<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Extends a growing arithmetic pattern, defined by objects or diagrams 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Determines the rule and completes a simple function machine output Solves problems involving simple functions 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Uses a table of input/output values to represent patterns Solves problems involving simple functions

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
Use Functions to Model Relationships <ul style="list-style-type: none"> • Describes a realistic situation using information given in a linear equation • Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels) • Completes a function table given a simple rule (e.g., $x + 2$) • Determines the rule and completes a simple function machine output • Solves problems using tables 	Use Functions to Model Relationships <ul style="list-style-type: none"> • Looks for a growing pattern to solve a problem • Interprets data in line graphs (e.g., change over time) • Completes a function table given a simple rule (e.g., $x + 2$) • Determines the rule given a simple real-world function table (e.g., # Dogs compared to # Legs) • Uses a table of input/output values to represent patterns 	Use Functions to Model Relationships <ul style="list-style-type: none"> • Looks for a growing pattern to solve a problem • Extends a growing pattern of triangular numbers, defined by objects or diagrams • Represents geometric sequences using written descriptions in recursive terms (present term, next term)
<i>New Vocabulary:</i> minimum, plus	<i>New Vocabulary:</i> coin, triple	<i>New Vocabulary:</i> algebra, net, reflexive, short, transitive
<i>New Signs and Symbols:</i> a.m., °C degrees Celsius, = is equal to, m meter/ metre, - negative number, p.m., + positive number	<i>New Signs and Symbols:</i> () parenthesis around an integer, d distance, \$ dollar sign, mph miles per hour, t time	<i>New Signs and Symbols:</i> < less than, repeating decimal overbar, Δ triangle

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>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> • Demonstrates an understanding of the distributive property of multiplication by decomposing a term • Calculates the value of a power (e.g., $2^3 = 8$) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> • Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$) • Represents relationships of quantities in the form of an expression • Uses basic operations on algebraic expressions (uses correct order of operations) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000 • Writes a number expressed in scientific notation in standard form • Models algorithms using place value concepts (multiplication and division with whole numbers) • Uses the distributive property • Calculates the value of a power (e.g., $2^3 = 8$) • Solves problems involving simple interest rates with the formula • Uses basic operations on algebraic expressions (substituting for unknowns) • Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties • Uses basic operations on algebraic expressions (expanding - monomial by a binomial) • Demonstrates an understanding of properties (e.g., commutative, associative, distributive, properties of 0) 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> • Calculates the power of a number (e.g., $8 = 2^3$) • Evaluates expressions containing powers (e.g., $3^2 \times 2^3$) • Solves problems with scientific notation • Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation • Uses expressions to represent situations that involve variable quantities with exponents • Uses basic operations on algebraic expressions (substituting for unknowns) • Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties • Uses basic operations on algebraic expressions (combining like terms) • Uses basic operations on algebraic expressions (expanding - monomial by a binomial) • Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$) • Represents relationships of quantities in the form of an expression • Uses basic operations on algebraic expressions (uses correct order of operations) • Writes a whole number in scientific notation • Determines the prime factorization of a number • Models algorithms using place value concepts (multiplication and division with whole numbers) • Evaluates numerical expressions using the order of operations (whole numbers only) • Evaluates expressions using the order of operations, including exponents (whole numbers only) • Evaluates numerical expressions using the order of operations (using integers) • Divides rational expressions in a/b form • Uses the distributive property
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Extends a growing geometric pattern - using numbers • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only) • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only) • Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only) 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Solves 2-step linear equations • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only) • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only) • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) • Uses estimation to solve problems involving proportional reasoning (decimals only) • Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary • Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms • Divides a fraction by a fraction

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>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Uses rounding to estimate answers to 2-step problems involving money (using decimals) • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects) • Solves whole number word problems with division over 10×10 • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Solves real-world problems involving 2-step multiple operations, whole numbers only • Solves real-world multiple-step problems involving whole numbers • Predicts the relative size of the answer when multiplying whole numbers • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Solves 1-step real-world problems involving fractions with multiplication and division • Computes the value of multiple bills and coins (addition/subtraction only) • Analyzes and computes 1 operation on real-world problems involving money over \$5.00 (addition/subtraction only) • Analyzes and computes 1 operation on real-world problems involving money over \$5.00 (multiplication/division) • Computes with dollars and cents over \$5.00 and converts to decimals (multiplication/division) • Computes addition and subtraction on multiple-step real-world problems involving money • Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money • Solves real-world problems involving addition and subtraction of integers • Understands equivalence and extends the concept to number sentences involving variables (e.g., $8 + 2 = \square + 2$) • Uses algebraic reasoning to solve problems involving equality relationships • Uses simple linear equations to represent problem situations • Solves simple open sentences with missing factors (numbers over 100) • Solves open sentences using the distributive property • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Solves open sentences with integers 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Solves real-world multiple-step problems involving whole numbers • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Divides a fraction by a fraction • Divides a mixed fraction by a fraction • 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) • Computes with dollars and cents over \$5.00 and converts to decimals (multiplication/division) • Computes the value of multiple bills and coins (multiplication/division) • Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) • Solves real-world problems involving addition and subtraction of integers • Solves problems involving addition and subtraction of integers • Expresses a simple linear equation from a contextual situation • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Solves linear equations with decimals • Solves linear equations with integers • Writes equivalent forms of algebraic equations using addition and subtraction • Solves open sentences with decimals • Solves linear equations in a real-world context using a given formula • Applies algebraic methods to solve theoretical problems • Applies algebraic methods to solve real-world problems • Uses graphs to solve simple systems of linear equations • Applies systems-of-linear-equations methods to solve theoretical problems • Solves real-world problems using reasoning strategies 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Divides a fraction by a whole number • Divides a mixed fraction by a whole number • Divides a whole number by a mixed fraction • Divides a mixed fraction 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) • Solves real-world problems involving rate of pay with time and a half • Solves problems involving addition and subtraction of integers • Expresses a simple linear equation from a contextual situation • Solves 2-step open sentences with missing factors (variables on both sides of the sentence) • Solves 2-step linear equations • Solves linear equations with integers • Solves linear equations with fractions • Solves linear equations using rational numbers • Applies algebraic methods to solve real-world problems • Determines slope from a linear equation • Uses polynomial equations to solve complex real-world problems (e.g., using distributive property, variables on both sides) • Uses graphs to solve simple systems of linear equations • Solves simple one-step inequality open sentences • Expresses a simple linear inequality from a contextual situation • Solves simple linear inequalities using graphs • Converts from Celsius to Fahrenheit, given conversion ratios

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
Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities
<ul style="list-style-type: none"> • Applies algebraic methods to solve theoretical problems • Selects and uses the appropriate type and size of unit in metric system (mass) • Solves simple problems involving measurement of weight • Solves simple problems involving capacity • Solves real-world problems using reasoning strategies 		
Use Functions to Model Relationships	Use Functions to Model Relationships	Use Functions to Model Relationships
<ul style="list-style-type: none"> • Determines the rule and completes a simple function machine output • Solves problems involving simple functions • Looks for a growing pattern to solve a problem • Interprets data in line graphs (e.g., change over time) • Completes a function table given a simple rule (e.g., $x + 2$) • Determines the rule given a simple real-world function table (e.g., # Dogs compared to # Legs) • Uses a table of input/output values to represent patterns 	<ul style="list-style-type: none"> • Uses a table of input/output values to represent patterns • Solves problems involving simple functions • Looks for a growing pattern to solve a problem • Extends a growing pattern of triangular numbers, defined by objects or diagrams • Represents geometric sequences using written descriptions in recursive terms (present term, next term) 	<ul style="list-style-type: none"> • Recognizes and extends arithmetic sequences (predicts nth term) • Recognizes and extends the Fibonacci sequence • Writes linear equations when given ordered pairs • Writes the equation of a horizontal or vertical line when given the graph of the line • Represents real-world functions using an equation • Uses mapping diagrams to represent functions • Uses tables to determine function equations • Identifies the graph type, given equations of linear and nonlinear functions • Solves problems involving simple functions • Solves problems involving complex functions • Interprets data given in line graphs to solve problems • Represents geometric sequences using written descriptions in recursive terms (present term, next term)
<i>New Vocabulary:</i> coin, triple	<i>New Vocabulary:</i> algebra, net, reflexive, short, transitive	<i>New Vocabulary:</i> algebraic sentence, arithmetic progression, depreciate, discount, equation of a line, is less than, regression equation, time-and-a-half
<i>New Signs and Symbols:</i> () parenthesis around an integer, d distance, \$ dollar sign, mph miles per hour, t time	<i>New Signs and Symbols:</i> < less than, repeating decimal overbar, Δ triangle	<i>New Signs and Symbols:</i> \leq , \geq , () ordered pair, $f(x)$ the value of the function f at x , > greater than, > greater than, \geq greater than or equal to, kg kilogram, km kilometer/kilometre, \leq less than or equal to, • multiplication symbol (dot), % percent, - subtraction

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*) 241 - 250
<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$) Represents relationships of quantities in the form of an expression Uses basic operations on algebraic expressions (uses correct order of operations) Uses powers to represent 10, 100, 1000, 10,000, and 100,000 Writes a number expressed in scientific notation in standard form Models algorithms using place value concepts (multiplication and division with whole numbers) Uses the distributive property Calculates the value of a power (e.g., $2^3 = 8$) Solves problems involving simple interest rates with the formula Uses basic operations on algebraic expressions (substituting for unknowns) Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties Uses basic operations on algebraic expressions (expanding - monomial by a binomial) Demonstrates an understanding of properties (e.g., commutative, associative, distributive, properties of 0) 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Calculates the power of a number (e.g., $8 = 2^3$) Evaluates expressions containing powers (e.g., $3^2 \times 2^3$) Solves problems with scientific notation Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation Uses expressions to represent situations that involve variable quantities with exponents Uses basic operations on algebraic expressions (substituting for unknowns) Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties Uses basic operations on algebraic expressions (combining like terms) Uses basic operations on algebraic expressions (expanding - monomial by a binomial) Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$) Represents relationships of quantities in the form of an expression Uses basic operations on algebraic expressions (uses correct order of operations) Writes a whole number in scientific notation Determines the prime factorization of a number Models algorithms using place value concepts (multiplication and division with whole numbers) Evaluates numerical expressions using the order of operations (whole numbers only) Evaluates expressions using the order of operations, including exponents (whole numbers only) Evaluates numerical expressions using the order of operations (using integers) Divides rational expressions in a/b form Uses the distributive property 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Determines the prime factorization of a number using powers Writes a whole number in scientific notation Writes a decimal in scientific notation Evaluates expressions using the order of operations, including exponents (whole numbers only) Evaluates numerical expressions using the order of operations (using integers) Simplifies expressions containing square roots Simplifies rational expressions with scientific notation Solves problems with scientific notation Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation Uses expressions to represent situations that involve variable quantities with exponents Evaluates expressions by substituting with rational numbers Simplifies polynomial expressions Multiplies binomials Factors trinomials in the form $x^2 + bx + c$ Factors polynomials using difference of squares Uses basic operations on algebraic expressions (uses correct order of operations)
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves 2-step linear equations Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only) Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only) Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) Uses estimation to solve problems involving proportional reasoning (decimals only) Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms Divides a fraction by a fraction 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses reasoning strategies to solve problems Solves real-world problems involving rate of pay with time and a half Uses the multiplicative inverse property with rational numbers Solves linear equations with fractions Solves problems involving simple interest rates without the formula Solves 2-step open sentences with missing factors (variables on both sides of the sentence) Solves linear equations using rational numbers

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*) 241 - 250
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves real-world multiple-step problems involving whole numbers Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Divides a fraction by a fraction Divides a mixed fraction by a fraction 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) Computes with dollars and cents over \$5.00 and converts to decimals (multiplication/division) Computes the value of multiple bills and coins (multiplication/division) Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) Solves real-world problems involving addition and subtraction of integers Solves problems involving addition and subtraction of integers Expresses a simple linear equation from a contextual situation Solves open sentences with calculations on both sides of the sentence Solves 2-step open sentences with missing factors Solves 1-step linear equations Solves linear equations with decimals Solves linear equations with integers Writes equivalent forms of algebraic equations using addition and subtraction Solves open sentences with decimals Solves linear equations in a real-world context using a given formula Applies algebraic methods to solve theoretical problems Applies algebraic methods to solve real-world problems Uses graphs to solve simple systems of linear equations Applies systems-of-linear-equations methods to solve theoretical problems Solves real-world problems using reasoning strategies 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Divides a fraction by a whole number Divides a mixed fraction by a whole number Divides a whole number by a mixed fraction Divides a mixed fraction 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) Solves real-world problems involving rate of pay with time and a half Solves problems involving addition and subtraction of integers Expresses a simple linear equation from a contextual situation Solves 2-step open sentences with missing factors (variables on both sides of the sentence) Solves 2-step linear equations Solves linear equations with integers Solves linear equations with fractions Solves linear equations using rational numbers Applies algebraic methods to solve real-world problems Determines slope from a linear equation Uses polynomial equations to solve complex real-world problems (e.g., using distributive property, variables on both sides) Uses graphs to solve simple systems of linear equations Solves simple one-step inequality open sentences Expresses a simple linear inequality from a contextual situation Solves simple linear inequalities using graphs Converts from Celsius to Fahrenheit, given conversion ratios 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves open sentences with fractions Applies algebraic methods to solve real-world problems Applies algebraic methods to solve a variety of real-world and theoretical problems Solves problems involving consecutive numbers Uses polynomial equations to solve complex real-world problems (e.g., using distributive property, variables on both sides) Uses algebraic methods to solve systems of linear equations Solves simple one-step inequality open sentences Solves single variable linear inequalities with the variable in only one member using number lines Solves linear inequalities using graphs Solves complex real-world problems involving capacity Converts from Celsius to Fahrenheit, given conversion ratios
<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Uses a table of input/output values to represent patterns Solves problems involving simple functions Looks for a growing pattern to solve a problem 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Recognizes and extends arithmetic sequences (predicts nth term) Recognizes and extends the Fibonacci sequence Writes linear equations when given ordered pairs 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Represents growing arithmetic patterns using algebraic expressions or equations Uses linear equations to represent situations involving variable quantities

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*) 241 - 250
<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> • Extends a growing pattern of triangular numbers, defined by objects or diagrams • Represents geometric sequences using written descriptions in recursive terms (present term, next term) 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> • Writes the equation of a horizontal or vertical line when given the graph of the line • Represents real-world functions using an equation • Uses mapping diagrams to represent functions • Uses tables to determine function equations • Identifies the graph type, given equations of linear and nonlinear functions • Solves problems involving simple functions • Solves problems involving complex functions • Interprets data given in line graphs to solve problems • Represents geometric sequences using written descriptions in recursive terms (present term, next term) 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> • Writes linear equations when given ordered pairs • Writes the equation of a horizontal or vertical line when given the graph of the line • Determines x- or y-intercept of a given linear equation • Identifies and describes situations with varying rates of change • Solves quadratic equations using concrete models and tables • Uses tables to determine function equations • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation • Determines the minimum and maximum of a quadratic function • Analyzes the properties and characteristics of exponential functions • Determines the x- and/or y-intercept of an equation of a function • Performs operations on functions • Solves problems involving complex functions • Determines the domain and range of a function
<p><i>New Vocabulary:</i> algebra, net, reflexive, short, transitive</p> <p><i>New Signs and Symbols:</i> < less than, repeating decimal overbar, Δ triangle</p>	<p><i>New Vocabulary:</i> algebraic sentence, arithmetic progression, depreciate, discount, equation of a line, is less than, regression equation, time-and-a-half</p> <p><i>New Signs and Symbols:</i> \leq, \geq, () ordered pair, $f(x)$ the value of the function f at x, $>$ greater than, $>$ greater than, \geq greater than or equal to, kg kilogram, km kilometer/kilometre, \leq less than or equal to, \cdot multiplication symbol (dot), % percent, - subtraction</p>	<p><i>New Vocabulary:</i> exponential, identity, inverse, polynomial, reciprocal, solution set, y-intercept</p> <p><i>New Signs and Symbols:</i> None</p>

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 231 - 240	Skills and Concepts to Develop (50% Probability*) 241 - 250	Skills and Concepts to Introduce (27% Probability*) 251 - 260
<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Calculates the power of a number (e.g., $8 = 2^3$) Evaluates expressions containing powers (e.g., $3^2 \times 2^3$) Solves problems with scientific notation Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation Uses expressions to represent situations that involve variable quantities with exponents Uses basic operations on algebraic expressions (substituting for unknowns) Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties Uses basic operations on algebraic expressions (combining like terms) Uses basic operations on algebraic expressions (expanding - monomial by a binomial) Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$) Represents relationships of quantities in the form of an expression Uses basic operations on algebraic expressions (uses correct order of operations) Writes a whole number in scientific notation Determines the prime factorization of a number Models algorithms using place value concepts (multiplication and division with whole numbers) Evaluates numerical expressions using the order of operations (whole numbers only) Evaluates expressions using the order of operations, including exponents (whole numbers only) Evaluates numerical expressions using the order of operations (using integers) Divides rational expressions in a/b form Uses the distributive property 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Determines the prime factorization of a number using powers Writes a whole number in scientific notation Writes a decimal in scientific notation Evaluates expressions using the order of operations, including exponents (whole numbers only) Evaluates numerical expressions using the order of operations (using integers) Simplifies expressions containing square roots Simplifies rational expressions with scientific notation Solves problems with scientific notation Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation Uses expressions to represent situations that involve variable quantities with exponents Evaluates expressions by substituting with rational numbers Simplifies polynomial expressions Multiplies binomials Factors trinomials in the form $x^2 + bx + c$ Factors polynomials using difference of squares Uses basic operations on algebraic expressions (uses correct order of operations) 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Simplifies monomials Simplifies polynomial expressions Simplifies algebraic expressions with integer exponents Multiplies binomials Multiplies a polynomial by a polynomial Uses expressions to represent situations that involve variable quantities with exponents Factors polynomials by identifying common factors Factors trinomials in the form $x^2 + bx + c$ Factors polynomials using difference of squares Simplifies expressions containing square roots Solves problems with scientific notation Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation Divides a polynomial by a monomial Evaluates expressions by substituting with rational numbers
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) Uses estimation to solve problems involving proportional reasoning (decimals only) Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms Divides a fraction by a fraction 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses reasoning strategies to solve problems Solves real-world problems involving rate of pay with time and a half Uses the multiplicative inverse property with rational numbers Solves linear equations with fractions Solves problems involving simple interest rates without the formula Solves 2-step open sentences with missing factors (variables on both sides of the sentence) Solves linear equations using rational numbers 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses graphs to solve systems of linear inequalities Determines the length of the side of a square, given the area Uses reasoning strategies to solve problems Writes equivalent forms of algebraic equations using multiplication and division Solves linear equations using rational numbers Applies algebraic methods to solve complex real-world and theoretical problems

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 231 - 240	Skills and Concepts to Develop (50% Probability*) 241 - 250	Skills and Concepts to Introduce (27% Probability*) 251 - 260
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Divides a fraction by a whole number Divides a mixed fraction by a whole number Divides a whole number by a mixed fraction Divides a mixed fraction 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) Solves real-world problems involving rate of pay with time and a half Solves problems involving addition and subtraction of integers Expresses a simple linear equation from a contextual situation Solves 2-step open sentences with missing factors (variables on both sides of the sentence) Solves 2-step linear equations Solves linear equations with integers Solves linear equations with fractions Solves linear equations using rational numbers Applies algebraic methods to solve real-world problems Determines slope from a linear equation Uses polynomial equations to solve complex real-world problems (e.g., using distributive property, variables on both sides) Uses graphs to solve simple systems of linear equations Solves simple one-step inequality open sentences Expresses a simple linear inequality from a contextual situation Solves simple linear inequalities using graphs Converts from Celsius to Fahrenheit, given conversion ratios 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves open sentences with fractions Applies algebraic methods to solve real-world problems Applies algebraic methods to solve a variety of real-world and theoretical problems Solves problems involving consecutive numbers Uses polynomial equations to solve complex real-world problems (e.g., using distributive property, variables on both sides) Uses algebraic methods to solve systems of linear equations Solves simple one-step inequality open sentences Solves single variable linear inequalities with the variable in only one member using number lines Solves linear inequalities using graphs Solves complex real-world problems involving capacity Converts from Celsius to Fahrenheit, given conversion ratios 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Rewrites a complex formula to solve for a specific variable Solves quadratic equations by factoring Solves quadratic equations by completing the square Solves polynomial equations (e.g., $ax = b + cx$, $a(x + b) = c$, $ax + b = cx + d$, $a(bx + c) = d(ex + f)$, $a/x = b$) Uses polynomial equations to solve area and perimeter problems Uses the Multiplication Property of Equality as a first step in solving systems of linear equations Uses substitution as a first step in solving systems of linear equations Uses algebraic methods to solve systems of linear equations Uses graphs to solve systems of linear equations Solves real-world systems of linear equations Solves single variable linear inequalities with the variable in only one member using number lines Solves single variable linear inequalities with variable in both members using number lines
<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Recognizes and extends arithmetic sequences (predicts nth term) Recognizes and extends the Fibonacci sequence Writes linear equations when given ordered pairs Writes the equation of a horizontal or vertical line when given the graph of the line Represents real-world functions using an equation Uses mapping diagrams to represent functions Uses tables to determine function equations Identifies the graph type, given equations of linear and nonlinear functions Solves problems involving simple functions 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Represents growing arithmetic patterns using algebraic expressions or equations Uses linear equations to represent situations involving variable quantities Writes linear equations when given ordered pairs Writes the equation of a horizontal or vertical line when given the graph of the line Determines x- or y-intercept of a given linear equation Identifies and describes situations with varying rates of change Solves quadratic equations using concrete models and tables Uses tables to determine function equations 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Analyzes the properties and characteristics of exponential functions Uses an algebraic expression to represent a triangular number pattern Rewrites an equation for a line in standard form Determines x- or y-intercept of a given linear equation Writes the equation of the line when given the graph of the line Determines the graph of a line when given the equation Writes linear equations, given two points on a line Determines slope from graphs Determines slope from ordered pairs and tables Interprets the meaning of slope and intercepts in problem solving situations

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 231 - 240	Skills and Concepts to Develop (50% Probability*) 241 - 250	Skills and Concepts to Introduce (27% Probability*) 251 - 260
<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Solves problems involving complex functions Interprets data given in line graphs to solve problems Represents geometric sequences using written descriptions in recursive terms (present term, next term) 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) Models real life functions using function notation Determines the minimum and maximum of a quadratic function Analyzes the properties and characteristics of exponential functions Determines the x- and/or y-intercept of an equation of a function Performs operations on functions Solves problems involving complex functions Determines the domain and range of a function 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Identifies and describes situations with varying rates of change Identifies discriminants and roots Solves polynomial equations with integers as exponents Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) Models real life functions using function notation Distinguishes between linear and nonlinear functions (analysis) Uses graphs to represent functions and interpret slope Identifies the equation of a parabola Determines the vertex of a parabola Determines the minimum and maximum of a quadratic function Investigates, describes, and predicts the effects of parameter changes on the graphs of exponential functions Determines the effects of parameter changes on functions Determines the domain and range of a function
<p><i>New Vocabulary:</i> algebraic sentence, arithmetic progression, depreciate, discount, equation of a line, is less than, regression equation, time-and-a-half</p>	<p><i>New Vocabulary:</i> exponential, identity, inverse, polynomial, reciprocal, solution set, y-intercept</p>	<p><i>New Vocabulary:</i> coordinate plane, quadratic equation, undefined, wider, x-coordinate, y-coordinate</p>
<p><i>New Signs and Symbols:</i> \leq, \geq, () ordered pair, $f(x)$ the value of the function f at x, $>$ greater than, $>$ greater than, \geq greater than or equal to, kg kilogram, km kilometer/kilometre, \leq less than or equal to, \cdot multiplication symbol (dot), % percent, - subtraction</p>	<p><i>New Signs and Symbols:</i> None</p>	<p><i>New Signs and Symbols:</i> [] square brackets, { } set notation, P perimeter</p>

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 241 - 250	Skills and Concepts to Develop (50% Probability*) 251 - 260	Skills and Concepts to Introduce (27% Probability*) 261 - 270
<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Determines the prime factorization of a number using powers Writes a whole number in scientific notation Writes a decimal in scientific notation Evaluates expressions using the order of operations, including exponents (whole numbers only) Evaluates numerical expressions using the order of operations (using integers) Simplifies expressions containing square roots Simplifies rational expressions with scientific notation Solves problems with scientific notation Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation Uses expressions to represent situations that involve variable quantities with exponents Evaluates expressions by substituting with rational numbers Simplifies polynomial expressions Multiplies binomials Factors trinomials in the form $x^2 + bx + c$ Factors polynomials using difference of squares Uses basic operations on algebraic expressions (uses correct order of operations) 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Simplifies monomials Simplifies polynomial expressions Simplifies algebraic expressions with integer exponents Multiplies binomials Multiplies a polynomial by a polynomial Uses expressions to represent situations that involve variable quantities with exponents Factors polynomials by identifying common factors Factors trinomials in the form $x^2 + bx + c$ Factors polynomials using difference of squares Simplifies expressions containing square roots Solves problems with scientific notation Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation Divides a polynomial by a monomial Evaluates expressions by substituting with rational numbers 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> Uses the compound interest equation to solve problems Simplifies monomials Simplifies polynomial expressions using power laws Factors polynomials by identifying a common monomial and then factoring the trinomial Estimates the limit of a given infinite sequence (e.g., given the sequence $1/n$, as n gets larger)
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses reasoning strategies to solve problems Solves real-world problems involving rate of pay with time and a half Uses the multiplicative inverse property with rational numbers Solves linear equations with fractions Solves problems involving simple interest rates without the formula Solves 2-step open sentences with missing factors (variables on both sides of the sentence) Solves linear equations using rational numbers Solves open sentences with fractions Applies algebraic methods to solve real-world problems Applies algebraic methods to solve a variety of real-world and theoretical problems Solves problems involving consecutive numbers Uses polynomial equations to solve complex real-world problems (e.g., using distributive property, variables on both sides) Uses algebraic methods to solve systems of linear equations Solves simple one-step inequality open sentences 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses graphs to solve systems of linear inequalities Determines the length of the side of a square, given the area Uses reasoning strategies to solve problems Writes equivalent forms of algebraic equations using multiplication and division Solves linear equations using rational numbers Applies algebraic methods to solve complex real-world and theoretical problems Rewrites a complex formula to solve for a specific variable Solves quadratic equations by factoring Solves quadratic equations by completing the square Solves polynomial equations (e.g., $ax = b + cx$, $a(x + b) = c$, $ax + b = cx + d$, $a(bx + c) = d(ex + f)$, $a/x = b$) Uses polynomial equations to solve area and perimeter problems Uses the Multiplication Property of Equality as a first step in solving systems of linear equations Uses substitution as a first step in solving systems of linear equations 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Rewrites a complex formula to solve for a specific variable Solves quadratic equations using the quadratic formula Solves quadratic equations by completing the square Solves real-world systems of linear equations Solves polynomial inequalities Uses graphs to solve systems of linear inequalities

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 241 - 250	Skills and Concepts to Develop (50% Probability*) 251 - 260	Skills and Concepts to Introduce (27% Probability*) 261 - 270
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Solves single variable linear inequalities with the variable in only one member using number lines Solves linear inequalities using graphs Solves complex real-world problems involving capacity Converts from Celsius to Fahrenheit, given conversion ratios 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> Uses algebraic methods to solve systems of linear equations Uses graphs to solve systems of linear equations Solves real-world systems of linear equations Solves single variable linear inequalities with the variable in only one member using number lines Solves single variable linear inequalities with variable in both members using number lines 	<p>Solve Problems and Use Equations & Inequalities</p>
<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Represents growing arithmetic patterns using algebraic expressions or equations Uses linear equations to represent situations involving variable quantities Writes linear equations when given ordered pairs Writes the equation of a horizontal or vertical line when given the graph of the line Determines x- or y-intercept of a given linear equation Identifies and describes situations with varying rates of change Solves quadratic equations using concrete models and tables Uses tables to determine function equations Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) Models real life functions using function notation Determines the minimum and maximum of a quadratic function Analyzes the properties and characteristics of exponential functions Determines the x- and/or y-intercept of an equation of a function Performs operations on functions Solves problems involving complex functions Determines the domain and range of a function 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Analyzes the properties and characteristics of exponential functions Uses an algebraic expression to represent a triangular number pattern Rewrites an equation for a line in standard form Determines x- or y-intercept of a given linear equation Writes the equation of the line when given the graph of the line Determines the graph of a line when given the equation Writes linear equations, given two points on a line Determines slope from graphs Determines slope from ordered pairs and tables Interprets the meaning of slope and intercepts in problem solving situations Identifies and describes situations with varying rates of change Identifies discriminants and roots Solves polynomial equations with integers as exponents Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) Models real life functions using function notation Distinguishes between linear and nonlinear functions (analysis) Uses graphs to represent functions and interpret slope Identifies the equation of a parabola Determines the vertex of a parabola Determines the minimum and maximum of a quadratic function Investigates, describes, and predicts the effects of parameter changes on the graphs of exponential functions Determines the effects of parameter changes on functions Determines the domain and range of a function 	<p>Use Functions to Model Relationships</p> <ul style="list-style-type: none"> Models real life functions using function notation Writes the equation of the line when given the graph of the line Writes linear equations, given slope and point on a line Determines the minimum and maximum of a quadratic function Analyzes the properties and characteristics of exponential functions
<p><i>New Vocabulary:</i> exponential, identity, inverse, polynomial, reciprocal, solution set, y-intercept</p> <p><i>New Signs and Symbols:</i> None</p>	<p><i>New Vocabulary:</i> coordinate plane, quadratic equation, undefined, wider, x-coordinate, y-coordinate</p> <p><i>New Signs and Symbols:</i> [] square brackets, { } set notation, P perimeter</p>	<p><i>New Vocabulary:</i> geometric series, semi-annual</p> <p><i>New Signs and Symbols:</i> P principal, r rate</p>

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Skills and concepts to Enhance (73% Probability*) 251 - 260	Skills and Concepts to Develop (50% Probability*) 261 - 270	Skills and Concepts to Introduce (27% Probability*) 271 - 280
<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> • Simplifies monomials • Simplifies polynomial expressions • Simplifies algebraic expressions with integer exponents • Multiplies binomials • Multiplies a polynomial by a polynomial • Uses expressions to represent situations that involve variable quantities with exponents • Factors polynomials by identifying common factors • Factors trinomials in the form $x^2 + bx + c$ • Factors polynomials using difference of squares • Simplifies expressions containing square roots • Solves problems with scientific notation • Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation • Divides a polynomial by a monomial • Evaluates expressions by substituting with rational numbers 	<p>Expressions & Properties of Operations</p> <ul style="list-style-type: none"> • Uses the compound interest equation to solve problems • Simplifies monomials • Simplifies polynomial expressions using power laws • Factors polynomials by identifying a common monomial and then factoring the trinomial • Estimates the limit of a given infinite sequence (e.g., given the sequence $1/n$, as n gets larger) 	<p>Expressions & Properties of Operations</p>
<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Uses graphs to solve systems of linear inequalities • Determines the length of the side of a square, given the area • Uses reasoning strategies to solve problems • Writes equivalent forms of algebraic equations using multiplication and division • Solves linear equations using rational numbers • Applies algebraic methods to solve complex real-world and theoretical problems • Rewrites a complex formula to solve for a specific variable • Solves quadratic equations by factoring • Solves quadratic equations by completing the square • Solves polynomial equations (e.g., $ax = b + cx$, $a(x + b) = c$, $ax + b = cx + d$, $a(bx + c) = d(ex + f)$, $a/x = b$) • Uses polynomial equations to solve area and perimeter problems • Uses the Multiplication Property of Equality as a first step in solving systems of linear equations • Uses substitution as a first step in solving systems of linear equations • Uses algebraic methods to solve systems of linear equations • Uses graphs to solve systems of linear equations • Solves real-world systems of linear equations • Solves single variable linear inequalities with the variable in only one member using number lines 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Rewrites a complex formula to solve for a specific variable • Solves quadratic equations using the quadratic formula • Solves quadratic equations by completing the square • Solves real-world systems of linear equations • Solves polynomial inequalities • Uses graphs to solve systems of linear inequalities 	<p>Solve Problems and Use Equations & Inequalities</p> <ul style="list-style-type: none"> • Describes a relationship or a real-world situation represented by a quadratic equation

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 251 - 260	Skills and Concepts to Develop (50% Probability*) 261 - 270	Skills and Concepts to Introduce (27% Probability*) 271 - 280
Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities
<ul style="list-style-type: none"> Solves single variable linear inequalities with variable in both members using number lines 		
Use Functions to Model Relationships	Use Functions to Model Relationships	Use Functions to Model Relationships
<ul style="list-style-type: none"> Analyzes the properties and characteristics of exponential functions Uses an algebraic expression to represent a triangular number pattern Rewrites an equation for a line in standard form Determines x- or y-intercept of a given linear equation Writes the equation of the line when given the graph of the line Determines the graph of a line when given the equation Writes linear equations, given two points on a line Determines slope from graphs Determines slope from ordered pairs and tables Interprets the meaning of slope and intercepts in problem solving situations Identifies and describes situations with varying rates of change Identifies discriminants and roots Solves polynomial equations with integers as exponents Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) Models real life functions using function notation Distinguishes between linear and nonlinear functions (analysis) Uses graphs to represent functions and interpret slope Identifies the equation of a parabola Determines the vertex of a parabola Determines the minimum and maximum of a quadratic function Investigates, describes, and predicts the effects of parameter changes on the graphs of exponential functions Determines the effects of parameter changes on functions Determines the domain and range of a function 	<ul style="list-style-type: none"> Models real life functions using function notation Writes the equation of the line when given the graph of the line Writes linear equations, given slope and point on a line Determines the minimum and maximum of a quadratic function Analyzes the properties and characteristics of exponential functions 	<ul style="list-style-type: none"> Solves logarithmic equations
<i>New Vocabulary:</i> coordinate plane, quadratic equation, undefined, wider, x-coordinate, y-coordinate	<i>New Vocabulary:</i> geometric series, semi-annual	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> [] square brackets, { } set notation, P perimeter	<i>New Signs and Symbols:</i> P principal, r rate	<i>New Signs and Symbols:</i> None

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Skills and concepts to Enhance (73% Probability*) 261 - 270	Skills and Concepts to Develop (50% Probability*) 271 - 280	Skills and Concepts to Introduce (27% Probability*) > 280
Expressions & Properties of Operations <ul style="list-style-type: none"> • Uses the compound interest equation to solve problems • Simplifies monomials • Simplifies polynomial expressions using power laws • Factors polynomials by identifying a common monomial and then factoring the trinomial • Estimates the limit of a given infinite sequence (e.g., given the sequence $1/n$, as n gets larger) 	Expressions & Properties of Operations	Expressions & Properties of Operations
Solve Problems and Use Equations & Inequalities <ul style="list-style-type: none"> • Rewrites a complex formula to solve for a specific variable • Solves quadratic equations using the quadratic formula • Solves quadratic equations by completing the square • Solves real-world systems of linear equations • Solves polynomial inequalities • Uses graphs to solve systems of linear inequalities 	Solve Problems and Use Equations & Inequalities <ul style="list-style-type: none"> • Describes a relationship or a real-world situation represented by a quadratic equation 	Solve Problems and Use Equations & Inequalities <ul style="list-style-type: none"> • Describes a relationship or a real-world situation represented by a quadratic equation
Use Functions to Model Relationships <ul style="list-style-type: none"> • Models real life functions using function notation • Writes the equation of the line when given the graph of the line • Writes linear equations, given slope and point on a line • Determines the minimum and maximum of a quadratic function • Analyzes the properties and characteristics of exponential functions 	Use Functions to Model Relationships <ul style="list-style-type: none"> • Solves logarithmic equations 	Use Functions to Model Relationships <ul style="list-style-type: none"> • Solves logarithmic equations
<i>New Vocabulary:</i> geometric series, semi-annual	<i>New Vocabulary:</i> None	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> P principal, r rate	<i>New Signs and Symbols:</i> None	<i>New Signs and Symbols:</i> None

Explanatory Notes

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Skills and concepts to Enhance (73% Probability*) 271 - 280	Skills and Concepts to Develop (50% Probability*) > 280
Expressions & Properties of Operations	Expressions & Properties of Operations
Solve Problems and Use Equations & Inequalities	Solve Problems and Use Equations & Inequalities
<ul style="list-style-type: none"> Describes a relationship or a real-world situation represented by a quadratic equation 	<ul style="list-style-type: none"> Describes a relationship or a real-world situation represented by a quadratic equation
Use Functions to Model Relationships	Use Functions to Model Relationships
<ul style="list-style-type: none"> Solves logarithmic equations 	<ul style="list-style-type: none"> Solves logarithmic equations
<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

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