DreamBox Curriculum Guide

PRE-K – GRADE 8

Here you can view a grade-by-grade list of topics found in DreamBox Learning® Math.

Build 1 to 10 Optimally

Compare 1 to 10

Identify Missing Addend

Pre-K – Kindergarten

Counting

- **Build 1 to 10 Optimally.** Students build and identify numbers from static and flashed sets of 1 to 10 objects using the least number of mouse clicks.
- **Doubles & Near Doubles.** Students build and identify numbers from 1 to 20 that are grouped as doubles and near doubles.

Comparisons & Ordering

- **Compare 1 to 10.** Students compare sets of 1 to 10 objects and identify which is more and/or less.
- **Identify More, Less, & Equal.** Students compare flashed sets and numerals of 1 to 10 objects and identify the set that is more, less, and/or equal.
- **Ordering Numbers.** Students order numbers and identify missing numbers in decades from 1 to 100.

Addition & Subtraction

- **Identify Missing Addend.** Students identify a missing part (addend) when given one part (addend) and a whole (sum) from 3 to 10.
- **Beginning Adding & Removing.** Students build and identify amounts that are 0, 1, or 2 more or less than a given quantity of 0 to 10.
- **Identify Number Pairs.** Students identify sets of objects and pairs of numbers that add up to 8, 9, and 10.

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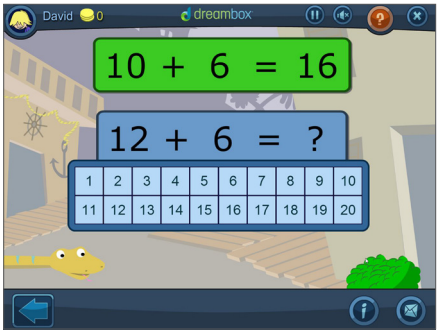
GRADE 1

Build Up to 20 Optimally

Identify More & Less Up to 100



Doubling & Making 10

Counting

- **Build up to 20 Optimally.** Students build and identify numbers from static and flashed sets of 1 to 20 objects using the least number of mouse clicks.
- **Build up to 50 Optimally.** Students build and identify numbers from static and flashed sets of 1 to 50 objects using the least number of mouse clicks.
- **Build up to 100 Optimally.** Students build and identify numbers from static and flashed sets of 1 to 100 objects using the least number of mouse clicks.

Comparisons & Ordering

- **Identify More & Less Up to 100.** Students compare sets of 1 to 100 objects and identify which is more or less.
- **Counting Forward & Backward.** Students place numbers in a row of the hundreds chart when given two numbers.
- **Build Columns of a Hundreds Chart.** Students identify vertical patterns of the hundreds chart by placing numbers in one or more columns.
- **Moving on a Hundreds Chart.** Students identify the number on the hundreds chart that is 1, 2, 8, 9, 10, or 11 away from a starting number.
- **Comparison Symbols.** Students compare sets of objects and numbers from 1 to 100 and make true.
- **Rounding to the Nearest Tens Place: Numbers to 100.** Students round numbers to the nearest tens place on a number line.

Addition & Subtraction

- **Doubling & Making 10.** Students use the strategies of "doubling" and "making 10" to add and subtract single-digit numbers (sums to 40).
- **Doubling to 20.** Students build and identify numbers from 1 to 20 when told to double a number (and at times, add or subtract 1) from 1 to 10.
- **Using 10 as a Landmark.** Students use landmarks of 10 when adding two numbers with sums to 24 (12 + 12).
- **Identifying Number Pairs.** Students identify pairs of numbers that add up to 15, 20, 50, and 100 using multiples of 5 and 10.

Place Value

- **Place Value to 100.** Students use groups of tens and ones to build and pack amounts of objects and determine totals (up to 100).

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GRADE 2

Finding Equal Expressions

Making Jumps of 10 (or 3 to 9)

Addition: Compensation

Comparisons & Ordering

- **Finding Equal Expressions.** Students use numerals to make as many groups of equivalent expressions as possible.
- **Assessing Equality.** Students determine whether a statement is true, false, greater than, less than, equal, or not equal.
- **Hundreds Charts to 500.** Students place numbers up to 500 on hundreds charts and number lines.
- **Hundreds Charts to 1000.** Students place numbers up to 1000 on a hundreds chart.
- **Compare Numbers Up to 500 (or 1,000).** Students compare numbers up to 500 (or 1,000) using the comparison symbols < and >, with special attention to the placement of zeroes and digit reversals.

Place Value

- **Place Value to 500 (or 1,000).** Students use groups of hundreds, tens, and ones to build and pack amounts of objects and determine totals (up to 500 [or 1,000]).

Addition & Subtraction

- **Making Jumps of 10 (or 3 to 9).** Students add and subtract 10 (or 3 to 9) to and from numbers between 0 and 200.
- **Finding Groups of Tens.** Students group numbers into tens and multiples of 10 when adding up to 12 addends.
- **Addition: Compensation.** Students manipulate two addends to create an equivalent but friendlier problem that can be solved mentally (31 + 26 becomes 30 + 27).
- **Adding & Subtracting Groups of Tens.** Students add and subtract multiples of 10 and leftovers between 0 and 200.
- **Identifying Missing Tens.** Students identify the difference between two addends when that difference is a multiple of 10.
- **Addition & Subtraction: Landmark Numbers.** Students add or subtract two numbers by jumping to the nearest multiple of 10, then adding additional tens and leftovers (45 + 28 becomes 45 + 5 + 10 + 10 + 3).
- **Identify Number Pairs Up to 200.** Students identify pairs of numbers that add up to 200 using multiples of 5 and 10.
- **Subtraction: Constant Difference.** Students manipulate two addends to create an equivalent
- **Addition: Doubling.** Students double numbers to create patterns using a function rule.

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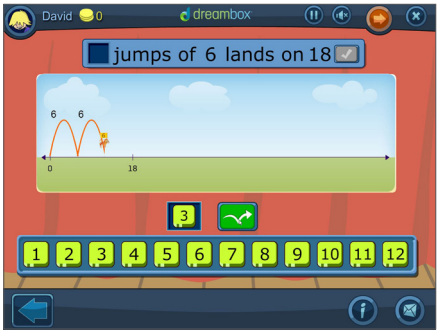
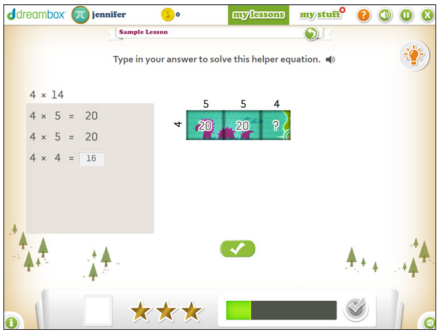
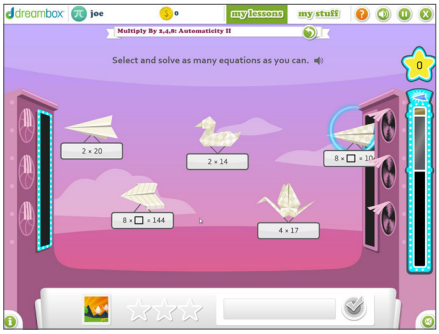
GRADE 3



Multiplication & Division Situations



Partial Products Using Arrays



Multiply by 2, 4, 8: Automaticity I & II

Comparisons & Ordering

- **Whole Numbers on a Number Line.** Students locate positive and negative whole numbers on a number line by scaling the number line by powers of ten.
- **Round & Compare Whole Numbers.** Students round numbers to the tens place and compare whole numbers up to 1000.

Addition & Subtraction

- **Identify Missing Addends to 1,000.** Students identify a missing part (addend) when given one part (addend) and a whole (sum) from 3 to 1,000.
- **Add & Subtract on the Number Line.** Students add and subtract positive whole numbers on a number line using their own strategies.
- **Fluency: Addition & Subtraction.** Students develop fluency with addition and subtraction of whole numbers by choosing two numbers with a target sum.
- **Rounding & Estimating with Integers.** Students round numbers to the tens place and estimate the sums of integers.

Multiplication & Division

- **Multiplication & Division Situations.** Students use various tools and groupings to develop an understanding of multiplication and division.
- **Multiplication: Doubling.** Students double known basic facts to find the product of more challenging basic facts.
- **Multiplication: Adding or Removing Groups.** Students add or remove a group to or from a known basic fact to determine the product of another basic fact.
- **Multiplication: Double & Halve.** Students use known basic facts and double one factor and halve the other to determine the product of a more challenging problem.
- **Multiplication Partial Products.** Students use the sum of two known basic facts to determine the product of a more challenging problem.
- **Partial Products using Arrays.** Students build arrays and use partial products to "cover" a rectangular area model of multiplication up to 12x12.
- **Multiply & Divide: Ratio Table.** Students determine factors and products using a table and common ratios (such as 4 tires for every 1 car).
- **Multiply by 0, 1, 5, 10: Automaticity I & II.** Students multiply 0, 1, 5, and 10 by numbers 1-10 and 11-100.
- **Multiply by 2, 4, 8: Automaticity I & II.** Students multiply 2, 4, and 8 by numbers 1-10 and 11-20.

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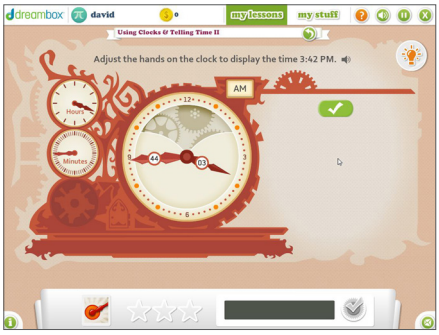
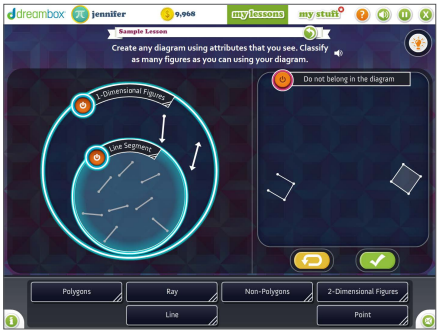
Fractions: Choose Context



Using Clocks & Telling Time 1



Classifying Geometric Figures

GRADE 3 CONTINUED

- **Multiply by 3, 6, 12: Automaticity I & II.** Students multiply 3, 6, and 12 by numbers 1-10 and 11-20.
- **Multiply by 9, 10, 11: Automaticity I & II.** Students multiply 9, 10, and 11 by numbers 1-10 and 11-20.
- **Multiply by 5, 15, 25: Automaticity.** Students multiply 5, 15, and 25 by numbers 1-10.
- **Multiply by 7, 14, 15: Automaticity.** Students multiply 7, 14, and 15 by numbers 1-10.

Fractions & Decimals

- **Make & Compare Rods.** Students cut rods into equal parts and use those rods to compare fractions with like numerators or like denominators.
- **Fractions: Money & Time.** Students use money and time amounts to build fraction equivalencies.
- **Fractions: Choose Context.** Students choose between money and time amounts to build fraction equivalencies.
- **Early Equivalency I.** Students use a table to find equivalent fractions and scaling factors for common fractions.
- **Fractions on a Number Line.** Students use a number line to select and place fractions, improper fractions, and mixed numbers.

Measurement

- **Using Clocks & Telling Time 1.** Students explore and use clocks to set and tell time to the nearest hour, half-hour and five minutes.
- **Using Clocks & Telling Time 2.** Students read and set times on an analog clock to the nearest minute.
- **Add & Subtract Time.** Students solve addition and subtraction problems with discrete amounts of time.
- **Line Plots I.** Students organize and represent numerical data on a line plot to a whole, half and quarter unit scale, and interpret these line plots to answer questions about the data.

Geometry

- **Constructing and Measuring Polygons I.** Students construct triangles, quadrilaterals, and polygons, and use a ruler to measure their sides.
- **Classifying Geometric Figures.** Students define and classify geometric figures that have up to 3 dimensions.
- **Classifying Polygons.** Students define and classify polygons, including different types of triangles and quadrilaterals.

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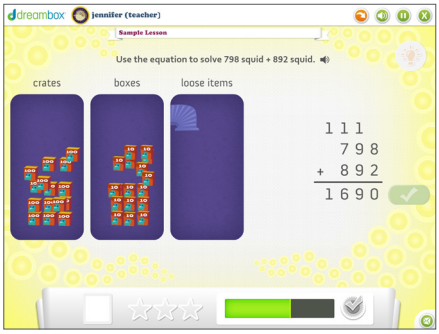
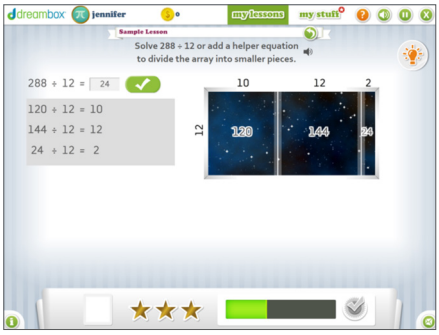
GRADE 4



Addition Algorithm



Division to 600

Multiplication with Open Arrays

Addition & Subtraction

- **Addition Algorithm.** Students use the standard addition algorithm and a place value workspace to solve addition problems involving up to three digit addends.
- **Subtraction Algorithm.** Students use the standard subtraction algorithm and a place value workspace to solve subtraction problems involving up to two three-digit numbers.
- **Whole Number Addition Strategies.** Students choose efficient strategies for solving addition problems with 3-digit numbers.
- **Whole Number Subtraction Strategies.** Students choose efficient strategies for solving subtraction problems with 3-digit numbers.

Multiplication & Division

- **Multiplication: Mixed Strategies.** Students explore the commutative property ($3 \times 5 = 5 \times 3$) and apply various strategies to solve double-digit multiplication problems.
- **Identifying Common Multiples.** Students find common multiples of two factors (2 – 12).
- **Identifying Factors.** Students identify factors of numbers to 100.
- **Multiplication to 1,500.** Students use partial product strategies to build arrays and solve multiplication problems using the distributive property.
- **Division to 600.** Students choose friendly equations (partial quotients), a rectangular array, and the distributive property to mentally solve multidigit division problems.
- **Multiplication with Arrays & Landmarks I.** Students solve multi-digit multiplication problems by creating friendly partial products represented on an open array.
- **Multiplication with Arrays & Landmarks II.** Students solve multi-digit multiplication problems by representing optimal partial products on an open array.
- **Composing Arrays to 600.** Students compose arrays and use the distributive property to solve multi-digit multiplication problems.
- **Multiplication with Open Arrays.** Students solve multi-digit multiplication problems using the distributive property and place value strategies.

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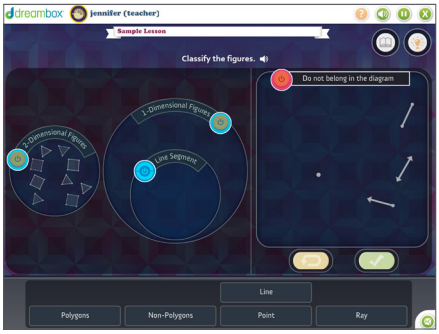
Decomposing Fractions

Elapsed Time



Classifying Geometric Figures in a Hierarchy

Place Value

- **Place Value to 9,999.** Students use groups of thousands, hundreds, tens, and ones to build and pack amounts of objects and determine totals (up to 9,999).
- **Decimals to the Thousandths Place.** Students create decimal numbers using place value dials and learn the relationships between powers of ten.

Fractions & Decimals

- **Fractions in the Real World 1.** Students explore different contexts of money and time to build fraction equivalencies less than 1.
- **Fractions in the Real World 2.** Students explore different contexts of money and time to build fraction equivalencies less than 2.
- **Comparing Fractions 1.** Students use a table to compare grade 4 fractions with unlike numerators and unlike denominators.
- **Comparing Fractions 2.** Students use a table to compare grade 5 fractions with unlike numerators and unlike denominators.
- **Decomposing Fractions.** Students use blocks to build fractions in a variety of ways.
- **Fraction Multiplication.** Students multiply fractions by whole numbers using blocks as a model for a strategy based on multiples of unit fractions.

Measurement

- **Elapsed Time.** Students solve elapsed time problems using addition and subtraction.
- **Line Plots II.** Students organize and represent numerical data on a line plot to a quarter and eighth unit scale, and use fraction operations to interpret these line plots to answer questions about the data.

Geometry

- **Angle Measurement & Rotation.** Students measure angles by using the relationship between rotation and angle measurement.
- **Constructing and Measuring Polygons II.** Students construct different types of triangles, quadrilaterals, and polygons, and use a ruler and protractor to measure side lengths and angles.
- **Classifying Geometric Figures in a Hierarchy.** Students represent hierarchical relationships as they classify geometric figures that have up to 3 dimensions.

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GRADE 5

Multiply & Divide with Decimals

Fraction Multiplication II

Equivalent Fractions on a Number Line

Multiplication & Division

- **Division to 10,000 with Remainders.** Students choose friendly equations (partial quotients) and the distributive property to solve multidigit division problems within 10,000 and interpret remainders.
- **Multiplication to 100,000.** Students use the distributive property to solve multiplication problems within 100,000.
- **Estimate & Multiply with the Multiplication Standard Algorithm.** Students use the standard multiplication algorithm and estimation strategies to solve multiplication problems involving up to four digit by two-digit numbers.
- **Beyond Times Tables: Automaticity I.** Students multiply by friendly numbers greater than 20.
- **Beyond Times Tables: Automaticity II.** Students multiply by landmark and near-landmark numbers greater than 20.

Fractions & Decimals

- **Multiply & Divide with Decimals.** Students multiply and divide decimal numbers expressed to the hundredths place using ratios and a unit price context.
- **Decimal Place Value in Products & Quotients.** Students estimate decimal products and quotients, then put the decimal point in the correct place value location of those products and quotients.
- **Equivalent Fractions with Scaling Factors.** Students generate equivalent fractions and find scaling factors using a table.
- **Fraction Addition.** Students add fractions with like denominators using blocks as a model.
- **Subtract Fractions.** Students subtract fractions with like denominators using blocks as a model for the removal strategy.
- **Fraction Multiplication II.** Students multiply two fractions together and use an area model to represent the product.
- **Fraction Division I.** Students divide fractions by whole numbers and whole numbers by fractions using a fair-sharing context.
- **Equivalent Fractions on a Number Line.** Students represent equivalent fractions and use proportional reasoning on a double number line.
- **Add & Subtract Decimals.** Students add and subtract positive decimal numbers on a number line using their own strategies.

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GRADE 5 CONTINUED

Decimals on a Number LIne

Classifying Polygons in a Hierarchy

Order of Operations 2: Parentheses

- **Decimals on a Number Line.** Students locate positive and negative rational numbers on a number line by scaling the number line by powers of ten.
- **Multiplying Decimals with Arrays.** Students multiply decimal numbers up to the thousandths place using an array as a model.
- **Round & Compare Fractions & Decimals.** Students round numbers to the ones and tenths place and compare fractions and decimals.
- **Rounding Rational Numbers.** Students round numbers to the ones and tenths place and estimate the sums of decimals and fractions.
- **Fluency: Fraction & Decimals.** Students develop fluency with addition & subtraction of fractions & decimals by choosing two numbers that have a target sum.

Geometry

- **Compose, Add, & Subtract Angles.** Students compose angles through addition and subtraction of angle measurements.
- **Classifying Polygons in a Hierarchy.** Students represent hierarchical relationships as they classify polygons, including different types of triangles and quadrilaterals.

Expressions & Equations

- **Order of Operations 1.** Students use the order of operations to evaluate expressions involving addition, subtraction, multiplication and division.
- **Operations Fluency 1.** Students fluently simplify expressions involving addition, subtraction, multiplication and division.
- **Operations Fluency 2: Parentheses.** Students fluently simplify expressions involving parentheses.
- **Order of Operations 2: Parentheses.** Students evaluate expressions involving parentheses using the order of operations.
- **Variable Expressions.** Students simplify and evaluate expressions involving variables.

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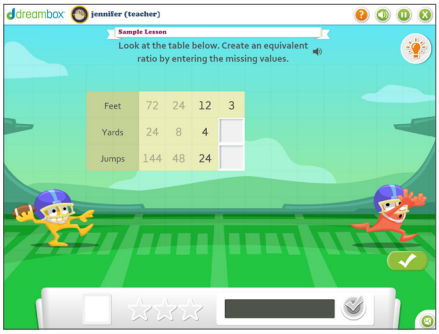
GRADE 6

Add & Subtract Integers

Division Standard Algorithm: Decimals



Ratios in Context: Measurement

Addition & Subtraction

- **Fluency: Integer Sums.** Students gain fluency with addition of integers by choosing two numbers to sum to a target value.
- **Add & Subtract Integers.** Students add and subtract positive and negative whole numbers on a number line using their own strategies.
- **Decimal Addition Strategies.** Students choose efficient strategies for solving addition problems with decimals to the tenths and hundredths.
- **Decimal Subtraction Strategies.** Students choose efficient strategies for solving subtraction problems with decimals to the tenths and hundredths.
- **Adding Integers.** Students add integers between -10 and 10.
- **Subtracting Integers.** Students subtract integers between -10 and 10.

Fractions & Decimals

- **Add & Subtract Negative Decimals.** Students add and subtract positive and negative decimal numbers on a number line using their own strategies.
- **Fluency: Rational Numbers.** Students gain fluency with addition of rational numbers by choosing two numbers to sum to a target value.
- **Round & Compare Rational Numbers.** Students round numbers to the ones and tenths place and compare rational numbers.

Multiplication & Division

- **The Distributive Property with Variables.** Students multiply expressions with one or two variables using an array as a model.
- **Division Standard Algorithm.** Students divide up to a four-digit number by a two-digit number using the standard algorithm, also known as "long division".
- **Division Standard Algorithm: Decimals.** Students solve a division problem with decimals using the standard algorithm, also known as "long division".

Ratios & Proportions

- **Calculating Percentages.** Students calculate percentages and solve equations with percents of whole numbers.
- **Ratios in Context: Measurement.** Students use scale factors to generate equivalent ratios in measurement situations (e.g., miles, meters, cups, gallons, rates, etc.).
- **Ratios & Division with Fractions.** Students generate equivalent ratios with fractions and use ratios to divide fractions.

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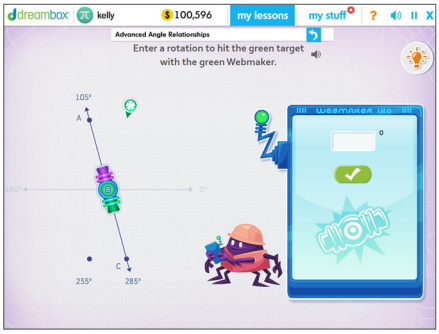

Advanced Angle Relationships

Coordinate Grids: Line of Symmetry

Order of Operations 3: Exponents

Geometry

- **Advanced Angle Relationships.** Students enter radii with angle measurements and explore vertical angles.
- **Coordinate Grids: Location & Measurement.** Students use a Cartesian coordinate grid to locate points and measure distances between points.
- **Coordinate Grids: Lines of Symmetry.** Students create symmetrical shapes on a coordinate grid using a line of symmetry.
- **Graphs, Tables, & Lines.** Students represent linear relationships by translating x-y tables to graphs and translating graphs to x-y tables.
- **The Coordinate Plane with Decimals 1.** Students locate points expressed as fractions and and decimals to the tenths place by scaling the Cartesian coordinate plane.

Expressions & Equations

- **Order of Operations 3: Exponents.** Students use the order of operations to evaluate expressions involving exponents.
- **Operations Fluency 3:** Exponents. Students fluently simplify expressions involving exponents.
- **Operations Fluency 4.** Students fluently simplify multi-step expressions.
- **Integers & Inequalities.** Students compare integers from -10 to 10 using a number line.
- **Round and Compare Integers.** Students round integers to the tens place and compare integer values.

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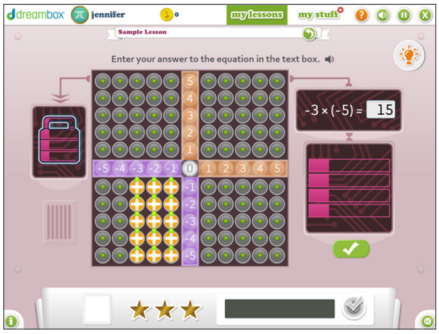
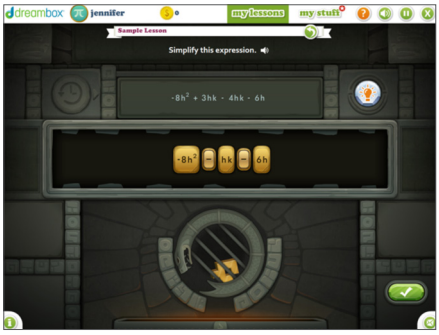
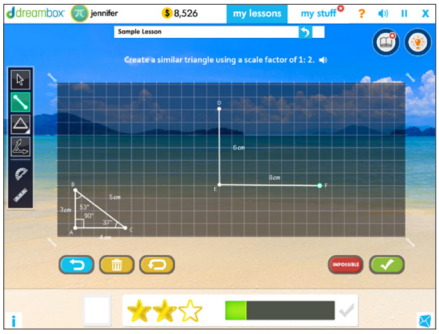
GRADE 7



Multiplying Integers



Variable Expressions Involving Integers



Constructing and Measuring Polygons III

Addition & Subtraction

- **Add & Subtract Integers: Automaticity I.** Students quickly and mentally add and subtract integers.
- **Add & Subtract Integers: Automaticity II.** tudents quickly and mentally add and subtract negative integers.

Multiplication & Division

- **Multiply & Divide Integers: Automaticity I.** Students quickly and mentally multiply and divide integers.
- **Multiply & Divide Integers: Automaticity II.** Students quickly and mentally multiply and divide negative integers.
- **Multiplying Integers.** Students multiply integers with products between -25 and 25.
- **Dividing Integers.** Students divide integers with dividends between -25 and 25.

Expressions & Equations

- **Integer Operations 1.** Students use the order of operations to evaluate integer expressions involving addition, subtraction, multiplication and division.
- **Integer Operations 2.** Students evaluate integer expressions involving parentheses and exponents using the order of operations.
- **Absolute Value.** Students determine the absolute value of integers between -10 and 10 using a number line.
- **Identifying Variables.** Students determine the value of a variable in a multi-step expression.
- **Variable Expressions Involving Integers.** Students simplify and evaluate variable expressions involving integers.
- **Variable Expressions with Distribution.** Students simplify and evaluate variable expressions with distribution.

Geometry

- **The Coordinate Plane with Decimals 2.** Students locate points expressed as fractions and decimals to the hundredths place by scaling the Cartesian coordinate plane.
- **Constructing and Measuring Polygons III.** Students construct different types of triangles, quadrilaterals, regular polygons, and scaled polygons using specified restraints, and use a ruler and protractor to measure their sides and angles.

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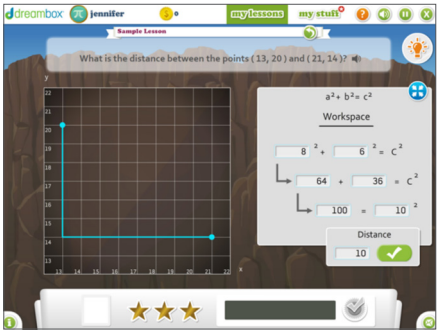
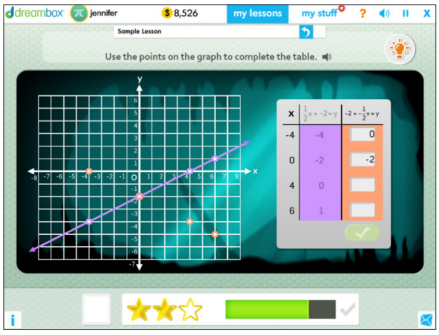
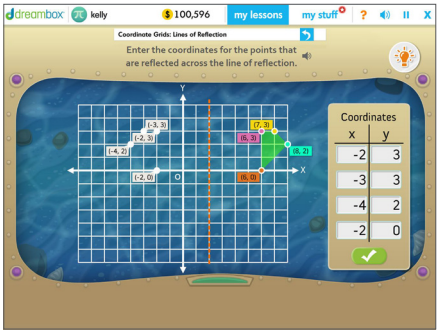
GRADE 8



Linear & Local Rate of Change



Equations, Tables, & Lines



Coordinate Grids: Lines of Reflection

Expressions & Equations

- **Linear Intersections & Intercepts.** Students visually locate intercepts and intersections of linear functions by scaling the Cartesian coordinate plane.
- **Non-Linear Intercepts & Extremes.** Students visually locate intercepts and extrema of non-linear functions by scaling the Cartesian coordinate plane.
- **Quadratic Expressions & Arrays I.** Students factor and expand quadratic expressions by representing them with arrays and combining like terms.
- **Quadratic Expressions & Arrays II.** Students factor and expand quadratic expressions with a leading coefficient by representing them with arrays and combining like terms.
- **Scientific Notation.** Students express very large and very small numbers using both decimal and scientific notation.
- **Variable Expressions Involving Exponents.** Students simplify and evaluate variable expressions involving exponents.

Functions

- **Linear & Local Rate of Change.** Students determine the rate of change between two points using the Cartesian coordinate plane.
- **Applying Linear Rate of Change.** Students use one point on the Cartesian coordinate plane and a linear rate of change to locate the coordinates of another point on that line.
- **Equations, Tables, & Lines.** Students graph linear equations by finding multiple solutions to the equations and recording them in x-y tables.
- **Equations, Graphs, & Lines.** Students use the graph of a linear relationship to write the equation of the line.
- **Coordinates of Linear & Non-Linear Functions.** Students create a table of values to approximate the path of a line or curve of best fit.
- **Rates of Change in Linear & Non-Linear Functions.** Students create a table of "changes" to approximate the local rate of change of lines and curves of best fit.
- **Equations of Linear & Non-Linear Functions.** Students create equations of functions in both standard and factored form to match a specified graph.

Geometry

- **The Pythagorean Theorem.** Students calculate whole number distances between two points on the Cartesian coordinate plane using the Pythagorean Theorem.
- **Coordinate Grids: Lines of Reflection.** Students reflect shapes on a coordinate grid over a line of reflection.
- **Transformations on a Plane.** Students transform a given shape to a target shape by dilating, rotating, translating or reflecting.

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