Areas of Understanding by Grade

Kindergarten

Quantity Discrimination, Ordinal Position, & Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• Count objects aloud 1-10 • Count objects aloud 1-20 • Count & circle answer 1-10 • Count & circle answer 1-20 • Identify number & draw circles 1-10 • Identify number & draw circles 1-20 • Count & write number 1-10 • Count & write number 1-20 • Quantity discrimination with dots to 10 • Quantity discrimination with dots to 20 • Missing number 1-10 • Missing number 1-20	• Sums to 5	• Subtraction to 5			• Change quantity with dots to 10 • Count & circle answer 1-10 • Count & circle answer 1-20 • Identify number & draw circles 1-10 • Identify number & draw circles 1-20	• Change quantity with dots to 10

Darker colored column headings indicate areas of emphasis in this grade.

Areas of Understanding by Grade

First Grade

Quantity Discrimination, Ordinal Position, and Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• Quantity comparison with numbers 0-9 • Quantity comparison with numbers 9-19 • Quantity comparison with numbers 0-20 • Quantity comparison with numbers 20-99 • Quantity comparison with numbers 101-999	• Sums to 6 • Sums to 12 • Sums to 20 • Fact families add & subtract 0-5 • Fact families add & subtract 0-9 • Fact families add & subtract 0-20	• Subtraction 0-5 • Subtraction 0-9 • Subtraction 0-12 • Subtraction 0-15 • Subtraction 0-20 • Fact families add & subtract 0-5 • Fact families add & subtract 0-9 • Fact families add & subtract 0-20				• Fact families add & subtract 0-5 • Fact families add & subtract 0-9 • Fact families add & subtract 0-20

Darker colored column headings indicate areas of emphasis in this grade.

Areas of Understanding by Grade

Second Grade

Quantity Discrimination, Ordinal Position, & Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• Quantity comparison with numbers 1001-9999 • Quantity comparison with sums & differences to 20 • 2-digit addition with regrouping • 2-digit addition with and without regrouping • 2-digit subtraction with regrouping • 2-digit subtraction with and without regrouping	• Sums to 6 • Sums to 12 • Sums to 20 • Fact families add & subtract 0-9 • Fact families add & subtract 0-20 • 2-digit addition without regrouping • 2-digit addition with regrouping • 2-digit addition with and without regrouping • Create equivalent addition & subtraction problems using place value • Create equivalent addition & subtraction using associative property and near-easy problems	• Subtraction 0-5 • Subtraction 0-9 • Subtraction 0-12 • Subtraction 0-15 • Subtraction 0-20 • Fact families add & subtract 0-9 • Fact families add & subtract 0-20 • 2-digit subtraction without regrouping • 2-digit subtraction with regrouping • 2-digit subtraction with and without regrouping • Create equivalent addition & subtraction problems using place value • Create equivalent addition & subtraction using associative property and near-easy problems			• Create equivalent addition & subtraction problems using place value • Create equivalent addition & subtraction using associative property and near-easy problems	• Fact families add & subtract 0-9 • Fact families add & subtract 0-20

Areas of Understanding by Grade

Third Grade

Quantity Discrimination, Ordinal Position, & Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• 3-digit addition with regrouping • 3-digit addition with & without regrouping • 3-digit subtraction with regrouping • 3-digit subtraction with & without regrouping • 3-digit addition & subtraction with & without regrouping • Place fractions on number line (denominators 2, 4, 8) • Quantity comparison fractions with like denominators • Divide 1-digit divisor into 2-3-digit dividend without remainders	• Sums to 20 • Fact families add & subtract 0-20 • 3-digit addition without regrouping • 3-digit addition with regrouping • 3-digit addition with & without regrouping • 3-digit addition & subtraction with & without regrouping	• Subtraction 0-20 • Fact families add & subtract 0-20 • 3-digit subtraction without regrouping • 3-digit subtraction with regrouping • 3-digit subtraction with & without regrouping • 3-digit addition & subtraction with & without regrouping	• Multiplication 0-5 • Multiplication 0-9 • Multiplication 5-9 • Multiplication 0-12 • Division 0-5 • Division 0-9 • Division 5-9 • Division 0-12 • Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12 • Multiply 1-digit by 2-3-digit without regrouping	• Division 0-5 • Division 0-9 • Division 5-9 • Division 0-12 • Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12 • Divide 1-digit divisor into 2-3-digit dividend without remainders • Place fractions on number line (denominators 2, 4, 8) • Quantity comparison fractions with like denominators		• Fact families add & subtract 0-20 • Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12

Areas of Understanding by Grade

Fourth Grade

Quantity Discrimination, Ordinal Position, & Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• Place fractions on number line (denominators 1,2,3,4,5,6,8,10) • Multiply 1-digit by 2-3-digit with regrouping • Multiply 1-digit by 2-3-digit with & without regrouping • Multiply 2-digit by 2-digit without regrouping • Multiply 2-digit by 2-digit with regrouping • Multiply 2-digit by 2-digit with & without regrouping • Add & subtract with decimals to the hundredths • Quantity comparison with decimals to the hundredths • Quantity comparison for fractions with unlike denominators • Quantity comparison fractions, whole numbers, and decimals	• Mixed addition & subtraction 0-20 • Add & subtract mixed numbers with like denominators with regrouping • Add & subtract with decimals to the hundredths	• Mixed addition & subtraction 0-20 • Add & subtract mixed numbers with like denominators with regrouping • Add & subtract with decimals to the hundredths	• Multiplication 0-9 • Multiplication 5-9 • Multiplication 0-12 • Division 0-9 • Division 5-9 • Division 0-12 • Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12 • Multiply 1-digit by 2-3-digit with regrouping • Multiply 1-digit by 2-3-digit with & without regrouping • Multiply 2-digit by 2-digit without regrouping • Multiply 2-digit by 2-digit with regrouping • Multiply 2-digit by 2-digit with & without regrouping • Create equivalent multiplication problems by factoring	• Division 0-9 • Division 5-9 • Division 0-12 • Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12 • Divide 1-digit divisor into 1-2-digit dividend with remainders • Place fractions on number line (denominators 1,2,3,4,5,6,8,10) • Add & subtract mixed numbers with like denominators & regrouping • Convert fractions to decimals • Convert decimals to fractions • Convert fractions to decimals and decimals to fractions • Quantity comparison for fractions with unlike denominators	• Create equivalent multiplication problems by factoring • Convert fractions to decimals • Convert decimals to fractions • Convert fractions to decimals and decimals to fractions • Quantity comparison for fractions with unlike denominators	• Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12 • Create equivalent multiplication problems by factoring

Darker colored column headings indicate areas of emphasis in this grade.

Areas of Understanding by Grade

Fifth Grade

Quantity Discrimination, Ordinal Position, & Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• Multiply 2-digit by 2-digit without regrouping • Multiply 2-digit by 2-digit with regrouping • Multiply 2-digit by 2-digit with & without regrouping • Divide 2-digit divisor into 3-4-digit dividend with remainders • Add & subtract with decimals to hundredths • Multiply & divide with decimals • Quantity comparison whole numbers, fractions, decimals, & percentages	• Add & subtract decimals to the hundredths	• Add & subtract decimals to the hundredths	• Multiplication 0-12 • Division 0-12 • Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12 • Multiply 2-digit by 2-digit without regrouping • Multiply 2-digit by 2-digit with regrouping • Multiply 2-digit by 2-digit with & without regrouping • Multiply & divide with decimals	• Division 0-12 • Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12 • Divide 2-digit divisor into 3-4-digit dividend with remainders • Multiply & divide with decimals • Convert mixed numbers to improper fractions • Convert improper fractions to mixed numbers • Convert percentages to decimals • Simplify fractions A • Simplify fractions B • Simplify fractions C • Simplify fractions • Convert decimals to fractions • Convert fractions to decimals • Convert fractions to decimals and decimals to fractions • Multiply fractions • Divide fractions • Multiply & divide proper & improper fractions • Find least common denominator • Add & subtract fractions with unlike denominators	• Convert mixed numbers to improper fractions • Convert improper fractions to mixed numbers • Convert percentages to decimals • Simplify fractions A • Simplify fractions B • Simplify fractions C • Simplify fractions • Convert decimals to fractions • Convert fractions to decimals • Convert fractions to decimals and decimals to fractions • Find least common denominator • Add & subtract with fractions with unlike denominators	• Fact families multiply & divide 0-9 • Fact families multiply & divide 0-12

Darker colored column headings indicate areas of emphasis in this grade.

Areas of Understanding by Grade

Sixth Grade

Quantity Discrimination, Ordinal Position, & Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• Multi-digit multiplication with & without regrouping • Multi-digit division with & without remainders • Add & subtract with decimals to hundredths • Multiply & divide with decimals • Mixed operations with decimals • Multiply 2-digit by 2-digit with decimals • Graph in a coordinate plane • Quantity comparison with integers	• Mixed addition & subtraction 0-20 • Mixed basic facts • Mixed operations whole numbers • Add & subtract with decimals to hundredths • Mixed operations with decimals • Substitute whole numbers to solve equations • Order of operations I • Collect like terms	• Mixed addition & subtraction 0-20 • Mixed basic facts • Mixed operations whole numbers • Add & subtract with decimals to hundredths • Mixed operations with decimals • Substitute whole numbers to solve equations • Order of operations I • Collect like terms	• Mixed basic facts • Mixed multiplication & division 0-12 • Mixed operations whole numbers • Add & subtract with decimals to hundredths • Multiply & divide with decimals Mixed operations with decimals • Multi-digit multiplication with & without regrouping • Multiply 2-digit by 2-digit with decimals • Substitute whole numbers to solve equations • Distributive property of expression	• Mixed basic facts • Mixed multiplication & division 0-12 • Mixed operations whole numbers • Add & subtract with decimals to hundredths • Multiply & divide with decimals • Mixed operations with decimals • Multiply 2-digit by 2-digit with decimals • Convert mixed numbers to improper fractions • Convert improper fractions to mixed numbers • Simplify fractions A • Simplify fractions B • Simplify fractions C • Simplify fractions • Multiply fractions • Divide fractions • Multiply & divide proper & improper fractions • Find least common denominator • Multiply & divide with mixed numbers • Mixed fraction operations • Substitute whole numbers to solve equations • Find percent of a whole number • Order of operations I • Distributive property of expression • Collect like terms	• Convert mixed numbers to improper fractions • Convert improper fractions to mixed numbers • Simplify fractions A • Simplify fractions B • Simplify fractions C • Simplify fractions • Find least common denominator • Multiply & divide with mixed numbers • Mixed fraction operations • Order of operations • Distributive property of expression • Collect like terms • Graph in a coordinate plane	• Substitute whole number to solve equation • Find percent of a whole number

Darker colored column headings indicate areas of emphasis in this grade.

Areas of Understanding by Grade

Seventh Grade

Quantity Discrimination, Ordinal Position, & Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• Multi-digit multiplication with & without regrouping • Multi-digit division with & without remainders • Inverse operations for addition & subtraction • Inverse operations for multiplication & division • Inverse operations for addition, subtraction, multiplication, & division • Add & subtract with integers • Mixed operations with integers	• Mixed addition & subtraction 0-20 • Mixed operations with whole numbers • Mixed operations with decimals • Order of operations • Inverse operations for addition & subtraction • Inverse operations for addition, subtraction, multiplication, & division • Add & subtract with integers • Mixed operations with integers • Solve 1-step equation with rational numbers • Solve 2-step equations • Solve 2-step equations with fractions	• Mixed addition & subtraction 0-20 • Mixed operations with whole numbers • Mixed operations with decimals • Order of operations • Inverse operations for addition & subtraction • Inverse operations for addition, subtraction, multiplication, & division • Add & subtract with integers • Mixed operations with integers • Solve 1-step equation with rational numbers • Solve 2-step equations • Solve 2-step equations with fractions	• Mixed multiplication & division 0-12 • Multi-digit multiplication with & without regrouping • Mixed operations with whole numbers • Inverse operations for multiplication & division • Inverse operations for addition, subtraction, multiplication, & division • Mixed operations with integers • Solve 1-step equations with rational numbers • Solve 2-step equations • Solve 2-step equations with fractions	• Mixed multiplication & division 0-12 • Multi-digit division with & without remainders • Mixed operations with whole numbers • Order of operations • Convert percentages to fractions • Inverse operations for multiplication & division • Inverse operations for addition, subtraction, multiplication, & division • Complex fractions • Mixed operations with integers • Solve 1-step equations with rational numbers • Solve 2-step equations • Solve 2-step equations with fractions	• Order of operations • Convert percentages to fractions • Complex fractions • Translate verbal expressions to numerical expressions • Solve algebraic proportions	• Inverse operations for addition & subtraction • Inverse operations for multiplication & division • Inverse operations for addition, subtraction, multiplication, & division • Solve 1-step equation with rational numbers • Solve 2-step equations • Solve 2-step equations with fractions • Solve for missing value in a percentage problem • Solve equations with percentages

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Areas of Understanding by Grade

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Eight Grade

Quantity Discrimination, Ordinal Position, & Place Value	Combining Whole Numbers & Variables	Taking Whole Numbers & Variables	Factors, Products, Exponents with Numbers & Variables	Fractions, Proportions, & Division	Create Equivalent Quantities	Solve for Unknowns
• Multi-digit multiplication with & without regrouping • Multi-digit division with & without regrouping • Add & subtract exponents with variables • Multiply with exponents with variables • Divide with exponents with variables • Mixed operations with exponents • Solve for slope and intercept using y = mx + b • Solve for slope given two coordinate pairs • Solve for y-intercept given slope and a point • Point on a line	• Mixed operations with whole numbers • Add & subtract with exponents with variables • Mixed operations with exponents • Order of operations with exponents • Simplify expressions	• Mixed operations with whole numbers • Add & subtract with exponents with variables • Mixed operations with exponents • Order of operations with exponents • Simplify expressions	• Mixed multiplication & division 0-12 • Multi-digit multiplication with & without regrouping • Mixed operations with whole numbers • Add & subtract with exponents with variables • Multiply with exponents with variables • Divide with exponents with variables • Mixed operations with exponents • Order of operations with exponents • Collect like terms to simplify expressions • Distributive property to simplify expressions • Simplify expressions	• Mixed multiplication & division 0-12 • Multi-digit division with & without regrouping • Mixed operations with whole numbers • Order of operations with exponents • Collect like terms to simplify expressions • Simplify expressions	• Add & subtract with exponents with variables • Multiply with exponents with variables • Divide with exponents with variables • Mixed operations with exponents • Order of operations with exponents • Collect like terms to simplify expressions • Distributive property to simplify expressions • Simplify expressions	• Solve for slope and intercept using y = mx + b • Solve for slope given two coordinate pairs • Solve for y-intercept given slope and a point • Point on a line • Linear combinations to solve equations • Substitute equation to solve linear equation • Use comparison method to solve linear equations

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