

Correlation of the ALEKS course Florida Math 0018 to the Florida Mathematics Competencies - Lower

Whole Numbers

- = ALEKS course topic that addresses the standard

MDECL1: Perform operations on whole numbers (with applications, including area and perimeter)

- Single digit addition with carry
- Addition of 3 or 4 single-digit numbers
- Adding a 2-digit number and a 1-digit number with carry
- Addition without carry
- Addition with carry
- Addition with carry to the hundreds place
- Addition of large numbers
- Adding or subtracting 10, 100, or 1000
- Subtracting a 1-digit number from a 2-digit number
- Subtraction without borrowing
- Subtraction with borrowing
- Subtraction with multiple regrouping steps
- Subtraction and regrouping with zeros
- Word problem using addition or subtraction
- One-digit multiplication
- Multiplication by 10, 100, and 1000
- Multiplication without carry
- Multiplication with carry
- Introduction to multiplication of large numbers
- Multiplication with trailing zeros: Problem type 1
- Multiplication with trailing zeros: Problem type 2
- Multiplication of large numbers
- Simple division
- Division without carry
- Division with carry
- Division with trailing zeros: Problem type 1
- Division with trailing zeros: Problem type 2
- Quotient and remainder: Problem type 1
- Quotient and remainder: Problem type 2
- Quotient and remainder: Problem type 3
- Division involving quotients with intermediate zeros
- Basic word problem using multiplication or division
- Word problem with multiple operations
- Word problem on quotient and remainder
- Word problem using division
- Perimeter of a polygon
- Perimeter of a square or a rectangle
- Sides of polygons having the same perimeter
- Finding the missing length in a figure

- Perimeter of a piecewise rectangular figure
- Perimeter and area on a grid
- Area of a square or a rectangle
- Distinguishing between area and perimeter
- Finding the side length of a rectangle given its perimeter or area
- Area of a piecewise rectangular figure
- Area of a parallelogram

MDECL2: Perform order of operations including absolute values

- Introduction to parentheses
- Introduction to order of operations
- Order of operations: Problem type 1
- Order of operations: Problem type 2
- Order of operations with whole numbers and exponents

MDECL3: Evaluate exponents with whole numbers

- Introduction to exponents
- Writing expressions using exponents
- Powers of 10: Positive exponent

MDECL10: Compare magnitude of real numbers

- Introduction to inequalities
- Ordering large numbers
- Ordering fractions with same denominator
- Ordering fractions with same numerator
- Ordering fractions
- Introduction to ordering decimals
- Ordering decimals
- Ordering fractions and decimals
- Ordering integers

MDECL11: Classify sets of numbers

- Even and odd numbers
- Prime numbers
- Integers and rational numbers
- Rational and irrational numbers

MDECL12: Identify and apply the properties of real numbers

- Introduction to properties of addition
- Introduction to properties of multiplication
- Understanding the distributive property

MDECL13: Identify place value and round whole numbers

- Whole number place value: Problem type 1
- Whole number place value: Problem type 2
- Rounding to tens or hundreds
- Rounding to hundreds or thousands
- Rounding to thousands, ten thousands, or hundred thousands

MDECL14: Write the prime factorization of a number

- Prime factorization

Integers

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MDECL4: Perform operations with integers (with applications)

- Integer addition: Problem type 1
- Integer addition: Problem type 2
- Integer subtraction: Problem type 1
- Integer subtraction: Problem type 2
- Integer subtraction: Problem type 3
- Word problem with addition or subtraction of integers
- Integer multiplication and division
- Multiplication of 3 or 4 integers
- Mixed arithmetic operations with integers

MDECL15: Evaluate exponents with integers

- Exponents and integers: Problem type 1
- Exponents and integers: Problem type 2
- Exponents and order of operations

MDECL16: Evaluate absolute value expressions

- Absolute value of a number
- Operations with absolute value

Fractions

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MDECL5: Perform operations with fractions (with applications)

- Finding the LCD of two fractions
- Addition or subtraction of fractions with the same denominator
- Addition and subtraction of simple unit fractions
- Introduction to addition or subtraction of fractions with different denominators
- Addition or subtraction of fractions with different denominators
- Fractional part of a circle
- Product of a unit fraction and a whole number
- Product of a fraction and a whole number
- Introduction to fraction multiplication
- Fraction multiplication
- Word problem with fractions
- Division involving a whole number and a fraction
- Fraction division
- Complex fractions without variables: Problem type 1
- Mixed arithmetic operations with fractions
- Addition or subtraction of mixed numbers with same denominator
- Addition of mixed numbers with same denominator and carry
- Subtraction of mixed numbers with same denominator and borrowing
- Addition or subtraction of mixed numbers with different denominators
- Mixed number multiplication: Problem type 1
- Mixed number multiplication: Problem type 2
- Mixed number division
- Simple addition and subtraction of signed fractions

- Signed fraction multiplication
- Exponents and signed fractions
- Solving a fraction word problem using a simple linear equation

MDECL6: Simplify fractions

- Understanding equivalent fractions
- Equivalent fractions
- Introduction to simplifying a fraction
- Simplifying a fraction

Decimals & Percents

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MDECL7: Perform operations with decimals (with applications)

- Addition of aligned decimals
- Decimal addition
- Subtraction of aligned decimals
- Word problem with one decimal operation: Problem type 1
- Word problem with one decimal operation: Problem type 2
- Multiplication of a decimal by a whole number
- Multiplication of a decimal by a power of ten
- Decimal multiplication: Problem type 1
- Decimal multiplication: Problem type 2
- Word problem using decimal addition and multiplication
- Division of a decimal by a whole number
- Division of a decimal by a power of ten
- Decimal division
- Word problem using decimal subtraction and division
- Simple addition and subtraction of signed decimals
- Signed decimal addition

MDECL8: Convert among percents, fractions, and decimals

- Writing a decimal and a fraction for a shaded region
- Introduction to writing a decimal as a fraction
- Converting a decimal to a fraction
- Converting a decimal to a mixed number
- Introduction to converting a fraction to a decimal
- Converting a fraction to a terminating decimal
- Converting a fraction to a repeating decimal
- Converting a mixed number to a decimal
- Converting between percentages and decimals
- Converting a percentage to a fraction
- Converting a fraction to a percentage

MDECL17: Identify place value and round decimals

- Tenths and hundredths decimal place value
- Decimal place value
- Rounding decimals

MDECL18: Solve percent equations with applications

- Writing a ratio as a percentage

- Percentage of a whole number
- Applying the percent equation
- Word problem on percentage: Problem type 1
- Word problem on percentage: Problem type 2
- Simple interest

Geometry:

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MDECL9: Solve application problems involving geometry (circumference of circle, perimeter of polygons, area of triangle, parallelograms, circle)

- Area of a triangle
- Perimeter of a polygon
- Perimeter of a square or a rectangle
- Sides of polygons having the same perimeter
- Finding the missing length in a figure
- Perimeter of a piecewise rectangular figure
- Perimeter and area on a grid
- Area of a square or a rectangle
- Distinguishing between area and perimeter
- Finding the side length of a rectangle given its perimeter or area
- Area of a piecewise rectangular figure
- Area of a parallelogram
- Circumference of a circle
- Circumference and area of a circle

MDECL19: Convert units of measurement within same measurement system

- Conversions involving measurements in feet and inches
- Customary unit conversion with whole number values
- Customary unit conversion with whole number values, two-step conversion
- Customary unit conversion with mixed number values
- Customary unit conversion with mixed number values, two-step conversion
- Metric distance conversion with whole number values
- Metric mass or capacity conversion with whole number values
- Metric distance conversion with decimal values
- Metric conversion with decimal values, two-step conversion
- Time unit conversion with whole number values

Pre-Algebra

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MDECL20: Set up and solve ratios and proportions with simple algebraic expressions

- Introduction to ratios
- Finding unit rates
- Solving a proportion: Basic
- Simple word problem on proportions
- Word problem on proportions: Problem type 1
- Similar polygons
- Indirect measurement

MDECL21: Solve linear equations involving the addition and multiplication property of equalities

- Additive property of equality with whole numbers
- Additive property of equality with fractions
- Additive property of equality with decimals
- Additive property of equality with integers
- Additive property of equality with a negative coefficient
- Multiplicative property of equality with whole numbers
- Multiplicative property of equality with fractions
- Multiplicative property of equality with decimals
- Multiplicative property of equality with integers
- Multiplicative property of equality with signed fractions
- Using two steps to solve an equation with whole numbers
- Solving a two-step equation with integers
- Solving a two-step equation with signed fractions
- Solving a linear equation with several occurrences of the variable: Problem type 1
- Solving a linear equation with several occurrences of the variable: Problem type 3

MDECL22: Define variables and write an expression to represent a quantity in a problem

- Writing simple variable expressions
- Writing a mathematical expression
- Translating sentences into equations
- Solving a word problem using a linear equation: Problem type 1

MDECL23: Simplify algebraic expressions involving one variable ($2x + 5x$)

- Distributive property: Basic
- Distributive property: Advanced
- Introduction to combining like terms
- Combining like terms: Basic
- Combining like terms: Advanced

MDECL24: Evaluate algebraic expressions (e.g., find value of $3x$ when $x=2$)

- Evaluating a simple algebraic expression: Problem type 1
- Evaluating a simple algebraic expression: Problem type 2
- Evaluating a simple algebraic expression: Problem type 3
- Evaluation of a linear expression in two variables
- Evaluation of a polynomial in one variable

MDECL25: Solve formulas with given values

- Converting between temperatures in Fahrenheit and Celsius

MDECL26: Graph an inequality on a number line

- Writing an inequality
- Graphing a linear inequality on the number line
- Writing an inequality given a graph on the number line

Introduction to MDECU2: Simplifies an expression with integer exponents

- Evaluation of a polynomial in one variable
- Understanding the product rule of exponents
- Product rule of exponents
- Multiplying monomials

- Understanding the power rule of exponents
- Introduction to the power rule of exponents
- Introduction to the quotient rule of exponents
- Quotients of expressions involving exponents

Introduction to MDECU3: Add, subtract, multiply, and divide polynomials. Division by monomials only.

- Distributive property: Advanced
- Multiplying a monomial and a polynomial: Problem type 1
- Multiplying a monomial and a polynomial: Problem type 2
- Multiplying binomials: Problem type 1

Introduction to MDECU9: Simplify radical expressions - square roots only

- Square root of a perfect square
- Square root of a rational perfect square