

Decimal Operations Proficiency

Lesson 1: Decimal Multiplication Mastery

In this lesson, students will become proficient in multiplying decimals and decimal numbers with whole numbers, utilizing these skills to solve word problems involving decimals.

Lesson 2: Decimal Division Proficiency

Students will master the art of dividing decimals, especially when dividing decimals by whole numbers. Real-world scenarios will be used to enhance their understanding.

Number Theory Essentials

Lesson 3: Prime Factorization

Learn how to find the prime factorization of a number.
Practice prime factorization with various examples.
Understand the concept of prime factors.

Lesson 4: Greatest Common Factor (GCF)

Explore the concept of GCF and its significance.
Find the GCF of two or more numbers.
Apply GCF in real-world problem-solving scenarios.

Lesson 5: Least Common Multiple (LCM) and Problem Solving

Discover the concept of LCM and its importance.
Calculate the LCM of two or more numbers.
Solve word problems using GCF and LCM strategies.

Fractions Mastery



Lesson 6: Equivalence in Fractions

In this lesson, students will learn about equivalent fractions, and by the end, they will be able to identify, write, and compare them effectively.

Lesson 7: Fraction Problem Solving with Graphs and Tables

This lesson focuses on applying fraction knowledge in the context of graphs and tables, helping students interpret and solve word problems effectively.

Mastering Fraction Operations

Lesson 8: Add and Subtract Fractions

Students will learn to confidently add and subtract fractions, including solving word problems that require these operations.

Lesson 9: Multiplication and Division of Fractions

This lesson introduces students to multiplication and division of fractions and mixed numbers. They will learn both the concepts and problem-solving techniques associated with these operations.

Lesson 10: Complex Operations and Problem Solving

In this final lesson, students will integrate their knowledge of fractions and mixed numbers to solve word problems that require multiple operations, covering everything they have learned in the module.

Exploring Rational and Real Numbers

Lesson 11: Understanding Rational Numbers

In this lesson, students will learn about rational numbers. They will understand how to convert between fractions (or mixed numbers) and decimals, classify rational numbers, and calculate



absolute values. This lesson provides a strong foundation for working with rational numbers in various forms.

Lesson 12: Classifying Real Numbers

This lesson introduces students to the broader classification of real numbers. They will learn to identify rational and irrational numbers, compare rational numbers, and place them in order. By the end of this lesson, students will have a comprehensive understanding of the different types of real numbers and how they relate to one another.

Operating with Rational Numbers

Lesson 13: Adding and Subtracting Rational Numbers

Learn how to add and subtract positive and negative decimals.
Practice adding and subtracting positive and negative fractions.
Apply these skills to add and subtract rational numbers, understanding the sign rules.
Master the addition and subtraction rules for rational numbers.

Lesson 14: Multiplying and Dividing Rational Numbers

Explore multiplication and division of positive and negative decimals.
Develop skills in multiplying and dividing positive and negative fractions.
Apply these skills to multiply and divide rational numbers.
Gain a deep understanding of the multiplication and division rules for rational numbers.
Tackle multi-step word problems involving positive rational numbers.

Exploring Exponents

Lesson 15: Understanding Exponents

Introduction to exponents and their significance.
Explanation of exponent notation and its purpose.
Practice writing and interpreting expressions with exponents.

Lesson 16: Evaluating Powers

Learn how to evaluate powers, including both positive and negative exponents.



Solve equations involving variable exponents.
Understand the rules for working with exponents in equations.

Lesson 17: Powers of Ten and Scientific Notation

Explore powers of ten and their applications in scientific notation.
Learn how to convert between standard and scientific notation.
Compare and order numbers written in scientific notation.
Solve problems involving large and small numbers using scientific notation.

Exploring Square Roots

Lesson 18: Square Roots of Perfect Squares

In this lesson, students will delve into the concept of square roots, specifically focusing on finding square roots of perfect squares. Through engaging activities and examples, students will grasp the fundamental relationship between perfect squares and their square roots, laying the groundwork for more complex square root concepts.

Lesson 19: Estimating Square Roots

This lesson expands students' understanding by teaching them techniques to estimate square roots of numbers that are not perfect squares. By exploring patterns and using approximations, students will develop valuable estimation skills. They will understand how to make reasonable estimates for square roots, enhancing their ability to work with non-perfect square numbers effectively.

Ratios, Rates, and Proportions Mastery

Lesson 20: Understanding Ratios

Introduction to ratios and their importance.
Identifying the components of a ratio.
Representing ratios in various forms.

Lesson 21: Equivalent Ratios and Their Applications

Identifying equivalent ratios.
Methods for generating equivalent ratios.



Solving real-world problems using equivalent ratios.

Lesson 22: Rates, Unit Rates, and Comparison

Understanding rates and unit rates.
Calculating unit rates, including fractions.
Solving word problems involving rates and comparisons.

Navigating the Coordinate Plane

Lesson 23: Introduction to the Coordinate Plane

A brief review of the Cartesian coordinate system.
Understanding the concepts of quadrants and axes.
Learning how to follow directions and find points on the coordinate plane.
Calculating the distance between two points using the Pythagorean theorem.

Proportional Relationships

Lesson 24: Identifying Proportional Relationships

Finding the constant of proportionality from a table.
Writing equations to represent proportional relationships from tables.
Recognizing proportional relationships by analyzing tables.

Lesson 25: Proportional Relationships in Graphs

Finding the constant of proportionality from a graph.
Writing equations to represent proportional relationships from graphs.
Identifying proportional relationships from graphs and equations.

Lesson 26: Applying Proportional Relationships

Completing tables and graphing proportional relationships.
Solving word problems involving graphing proportional relationships.
Interpreting graphs and solving equations related to proportional relationships.



Exploring Percentages

Lesson 27: Understanding Percentages

In this introductory lesson, students will gain a solid foundation in understanding percentages. They will learn what percentages are and how they relate to fractions and decimals. This lesson will help students see the connections between these representations, providing them with a strong basis for working with percentages.

Lesson 28: Applying Percentages in Real Life

This lesson extends students' knowledge by focusing on practical applications of percentages in everyday situations. Students will explore topics such as finding percentages of numbers, including money amounts, and solving word problems that involve calculating percentages. This lesson aims to bridge the gap between theoretical knowledge and real-world scenarios.

Lesson 29: Percent Change and Error

In the final lesson of this module, students will delve into the concepts of percent change and percent error. They will learn how to calculate changes in percentages and solve word problems related to finding original amounts when given percent changes. This lesson also covers scenarios involving percent error, which is essential for understanding the precision of measurements and calculations.

Practical Consumer Math

Lesson 30: Basic Money Operations

In this foundational lesson, students will master the essential math skills needed for everyday financial situations. They will learn how to add, subtract, multiply, and divide money amounts through real-world word problems. This lesson provides a strong basis for more complex financial calculations.

Lesson 31: Navigating Price Lists and Unit Prices

This lesson introduces students to the concept of price lists and unit prices. Students will learn how to read and interpret price lists and calculate unit prices, ensuring they get the best value for their money when shopping. The focus is on practical applications and understanding the relative costs of products.



Lesson 32: Understanding Percentages in Shopping

Students will explore the world of percentages in shopping, understanding how they apply to taxes, discounts, and more. They will learn to calculate percentages, identify which coupon offers the better deal, and work with sale prices to find the original price. This lesson equips students with practical math skills for making informed purchasing decisions.

Lesson 33: Interest and Financial Growth

In the final lesson of this module, students will delve into the concepts of simple and compound interest. They will learn how to calculate interest and understand the impact of interest on savings and investments. This lesson is essential for developing financial literacy and planning for the future.

Comprehensive Units of Measurement

Lesson 34: Mastering Customary and Metric Units

In this foundational lesson, students will develop a strong understanding of customary and metric units of measurement. They will learn to compare and convert between different units, fostering the ability to work with a variety of measurement systems.

Lesson 35: Handling Mixed Units and Conversions

This lesson delves into the complexities of mixed units, providing students with the skills to work with measurements that combine different unit types. They will also enhance their proficiency in converting between mixed customary and metric units.

Lesson 36: Temperature Scales and Conversions

In the final lesson of this module, students will explore temperature measurement in both Celsius and Fahrenheit scales. They will learn to convert between these scales, a crucial skill for understanding and interpreting temperature in various contexts.

Expressions Explained

Lesson 37: The World of Variable Expressions



This lesson introduces students to the basics of variable expressions. They will learn how to write variable expressions with a single operation and understand the significance of variables in mathematical expressions. Examples and exercises will help reinforce the concepts.

Lesson 38: From Simple to Complex Expressions

Building upon the knowledge from the first lesson, this lesson dives deeper into expressions. Students will explore how to write variable expressions with two or more operations, including addition, subtraction, multiplication, and division. Practical word problems will engage students in applying these expressions in real-life scenarios.

Exploring Equivalent Expressions

Lesson 39: Understanding the Properties of Addition and Multiplication

In this foundational lesson, students will grasp the fundamental properties of addition and multiplication and understand how these properties apply to algebraic expressions. They will recognize the commutative, associative, and distributive properties, setting the stage for simplifying expressions.

Lesson 40: Simplifying Expressions by Combining Like Terms

This lesson will teach students how to simplify algebraic expressions by combining like terms. They will practice this skill using algebra tiles, providing them with a concrete understanding of simplification.

Lesson 41: The Power of the Distributive Property

Students will explore the distributive property and its applications in simplifying expressions. They will use area models to visualize how the distributive property works and become proficient in using it to rewrite expressions.

Solving One-Variable Equations

Lesson 42: Introduction to Solving Equations



In this introductory lesson, students will learn what equations are and what it means for an equation to have a solution.

They will explore how to identify values of x that satisfy equations.

Lesson 43: Solving One- and Two-Step Equations

This lesson focuses on solving equations using various methods.

Students will learn to write equations from word problems, solve one-step equations, and progress to solving two-step equations with and without parentheses.

Word problems involving equations will be included to apply their skills in real-life scenarios.

Solving One-Variable Inequalities

Lesson 44: Introduction to Inequalities

In this introductory lesson, students will learn the concept of inequalities and how they differ from equations.

They will understand the solutions to inequalities and how to represent them on a number line.

Lesson 45: Solving and Graphing Inequalities

This lesson focuses on solving one-step and two-step inequalities.

Students will learn how to write inequalities from number lines, solve inequalities, and graph the solutions on number lines.

Real-world word problems involving inequalities will be included.

Discovering Sequences

Lesson 46: Distinguishing Arithmetic and Geometric Sequences

In this introductory lesson, students will learn to identify and differentiate between arithmetic and geometric sequences. They will recognize the patterns and characteristics that define each type of sequence.

Lesson 47: Exploring Arithmetic Sequences



Students will delve into arithmetic sequences, understanding how they progress through a common difference. They will practice finding terms and the sum of arithmetic sequences, developing strong problem-solving skills.

Lesson 48: Unveiling Geometric Sequences

This lesson focuses on geometric sequences, teaching students the concept of a common ratio and how geometric sequences evolve. They will gain proficiency in calculating terms and sums of geometric sequences.

Exploring Slope

Lesson 49: Understanding Slope and calculating slope

This introductory lesson will explain the concept of slope and why it is important in mathematics. Students will learn how to find the slope from a graph and how it represents the rate of change. They will learn how to find the slope from two points on a line and how to use this information to graph a line.

Understanding Two-Variable Equations

Lesson 50: Variables and Equations

In this foundational lesson, students will learn about independent and dependent variables in the context of two-variable equations. They will understand the relationship between variables and equations and how to identify them in real-world scenarios.

Lesson 51: Solving Two-Variable Equations

Building upon the knowledge from Lesson 1, this lesson focuses on solving two-variable equations. Students will learn how to find values using two-variable equations and apply this skill to solve word problems. They will also explore the process of completing tables for two-variable relationships and writing equations from given data.

Exploring Lines and Angles



Lesson 52: Angle Basics: Naming, Measuring, and Classifying

In this foundational lesson, students will learn to name, measure, and classify angles. They will understand the different types of angles, including acute, obtuse, and right angles, and develop the ability to measure angles accurately.

Lesson 53: Understanding Lines, Line Segments, and Rays

Students will explore the concepts of lines, line segments, and rays. They will learn how these fundamental elements are defined and distinguished in geometry, laying the groundwork for more complex geometric constructions.

Lesson 54: Relationships Between Lines: Parallel, Perpendicular, and Intersecting

This lesson focuses on understanding the relationships between lines. Students will grasp the concepts of parallel, perpendicular, and intersecting lines, recognizing their unique properties and applications.

Lesson 55: Angle Relationships and Transversals

Students will delve into angle relationships associated with lines and transversals. They will identify complementary, supplementary, vertical, and adjacent angles.

Exploring Two-Dimensional Figures

Lesson 56: Identifying and Classifying Polygons

In this introductory lesson, students will learn to identify and classify polygons based on their sides and angles. They will explore the properties of various polygons, such as triangles, quadrilaterals, and pentagons.

Lesson 57: The World of Triangles: Classification and Properties

This lesson focuses on triangles, delving into their classifications and properties. Students will learn about acute, obtuse, and right triangles, as well as the triangle inequality theorem.

Lesson 58: Understanding Trapezoids and Quadrilaterals



Students will explore the world of quadrilaterals. They will learn to identify trapezoids and delve into the classification of quadrilaterals based on their properties and angles.

Lesson 59: Solving Angle Puzzles in Triangles

In this practical lesson, students will apply their knowledge of triangle properties to find missing angles in triangles using various techniques, including ratios and proportionality.

Lesson 60: Unlocking the Mysteries of Circles and Central Angles

This lesson introduces students to circles and central angles. They will learn how to identify parts of a circle and calculate central angles in circular shapes.

Exploring Three-Dimensional Figures

Lesson 61: Understanding Bases of Three-Dimensional Figures

In this lesson, students will learn about the concept of bases in three-dimensional figures. They will identify and understand how bases play a crucial role in the classification and properties of these shapes.

Lesson 62: Unfolding the World of Nets for Three-Dimensional Figures

This lesson introduces students to the idea of nets for three-dimensional figures. They will explore how flat, 2D patterns can be folded to create 3D shapes, providing insights into the surface area and structure of these figures.

Lesson 63: Views and Cross Sections of Three-Dimensional Figures

Students will explore different views of three-dimensional figures, such as front, side, and top views. They will also delve into the concept of cross sections, learning how to visualize and understand the shapes created when a solid is cut by a plane.

Perimeter and Area Mastery

Lesson 64: Perimeter - Measuring the Boundaries



In this lesson, students will delve into the concept of perimeter, which is the measure of the boundary of two-dimensional shapes. They will learn how to calculate the perimeter of various polygons and shapes.

Lesson 65: Calculating Area of Rectangles and Parallelograms

This lesson focuses on the area of rectangles and parallelograms. Students will discover the methods to find the area of these common geometric figures, providing a strong foundation for more complex shapes.

Lesson 66: Mastering Area - Triangles and Trapezoids

Students will explore the intricacies of calculating the area of triangles and trapezoids. This lesson equips them with the necessary skills to find the area of these shapes efficiently.

Lesson 67: Real-World Challenges - Area and Perimeter Word Problems

In this practical application lesson, students will solve word problems involving area and perimeter, allowing them to use their knowledge in real-world scenarios. They will develop problem-solving skills while applying their geometric understanding.

Circles and Complex Areas

Lesson 68: Circles Unveiled - Circumference and Area

This lesson introduces students to the intriguing world of circles. They will learn how to calculate the circumference and area of circles, laying the foundation for understanding this fundamental shape.

Lesson 69: Exploring Circular Challenges - Word Problems and Semicircles

In this lesson, students dive deeper into circles by solving word problems that involve circular concepts. They will also explore the properties of semicircles, including how to calculate their area, perimeter, radius, and diameter.

Lesson 70: Complex Composite Figures - Compound Shapes and Area Between

The final lesson builds on students' knowledge of basic geometry by exploring complex composite figures. They will learn how to calculate the area of compound shapes made up of rectangles,



triangles, semicircles, and quarter circles. Additionally, they will delve into finding the area between two shapes, providing a comprehensive understanding of geometric problem-solving.

Geometric Explorations: Surface Area and Volume

Lesson 71: Unveiling Shapes - Surface Area of Cubes and Prisms

In this lesson, students will dive into the world of 3D shapes, learning how to calculate the surface area of cubes and prisms. They'll understand the significance of surface area and develop problem-solving skills.

Lesson 72: Pyramid Puzzles - Surface Area of Pyramids

Building on their knowledge, students will explore the surface area of pyramids. By the end of this lesson, they'll be proficient in calculating the surface area of pyramidal structures.

Lesson 73: Lateral Mastery - Lateral Area of Prisms and Pyramids

This lesson delves into lateral area, a new concept, and covers how to find the lateral area of prisms and pyramids. Students will gain a deep understanding of the lateral surfaces of 3D shapes.

Lesson 74: Cylinder Secrets - Surface Area of Cylinders

Students will extend their knowledge by learning how to calculate the surface area of cylinders. They will master the techniques for finding the surface area of these cylindrical shapes.

Lesson 75: Volume Voyage - Volume of Cubes and Rectangular Prisms

This lesson focuses on volume and starts by calculating the volume of cubes and rectangular prisms. Students will be able to apply this knowledge to solve word problems related to these shapes.

Lesson 76: Exploring Space - Volume of Prisms, Pyramids, and Cylinders

In the final lesson of the module, students will learn to calculate the volume of prisms, pyramids, and cylinders. This will complete their understanding of 3D shapes, surface area, and volume, preparing them for more advanced mathematical concepts.



Exploring Scale Drawings

Lesson 77: Creating Scale Drawings of Polygons

Introduction to scale drawings and their importance in various fields.
Understanding how to create scale drawings of polygons using a given scale factor.
Practice exercises in creating scale drawings.

Lesson 78: Solving Scale Drawing Word Problems

Applying the knowledge of scale drawings to real-world scenarios through word problems.
Analyzing and interpreting scale drawings in different contexts.
Solving word problems related to scale drawings effectively.

Geometric Transformations: Reflections, Rotations, and Translations

Lesson 79: Unveiling Transformations - Identify Reflections, Rotations, and Translations

In this introductory lesson, students will explore the basics of geometric transformations, identifying reflections, rotations, and translations. They will understand the fundamental concepts behind these transformations.

Lesson 80: Shifting Horizons and finding new coordinates - Graphing Translations

This lesson delves into translations. Students will learn how to graph the image of an object after a translation and understand the geometrical principles behind it. Students will focus on finding the new coordinates of transformed shapes after translations. They will be able to calculate exact coordinates post-translation.

Congruence and Similarity in Geometry

Lesson 81: Exploring Congruence and Similarity

In this foundational lesson, students will grasp the concepts of congruence and similarity in geometry. They will understand what makes figures similar and congruent, setting the stage for deeper exploration.



Lesson 82: Equivalence in Geometry - Congruence Statements and Corresponding Parts

Building on their understanding of congruence, students will learn to write congruence statements and identify corresponding parts of congruent figures. This lesson focuses on precise definitions and relationships.

Lesson 83: Proportional Geometry - Side Lengths and Angle Measures of Similar Figures

This lesson transitions from congruence to similarity, helping students understand how side lengths and angle measures relate in similar figures. They will also explore how similarity can be used for indirect measurement in real-world applications.

Data Representation and Analysis

Lesson 84: Mastering Line Plots

Students will learn to interpret and create line plots effectively. They will develop the skills to represent data points clearly and draw insights from line plots.

Lesson 85: Exploring Various Data Structures - Stem-and-Leaf and Bar Graphs

This lesson introduces students to alternative data representation methods. They will gain proficiency in interpreting and creating stem-and-leaf plots and bar graphs, expanding their data visualization toolkit.

Lesson 86: Understanding Diverse Data Types - Histograms and Circle Graphs

In this lesson, students will explore the interpretation and construction of histograms and circle graphs, gaining insights into how these graphs convey different types of information.

Lesson 87: Delving into Box Plots

Students will learn about Box Plots (Box-and-Whisker Plots), a valuable tool for summarizing and comparing data sets. They will understand how to create and interpret Box Plots, gaining insights into data distribution and outliers.

Statistical Analysis Fundamentals

Lesson 88: Measures of Central Tendency

Calculation and interpretation of mean, median, mode, and range.
Using charts and graphs to find these measures in datasets.
Solving problems to find the missing number in mean, median, mode, and range scenarios.
Analyzing changes in mean, median, mode, and range and their implications.

Lesson 89: Variability and Spread

Understanding mean absolute deviation as a measure of variability.
Calculating quartiles and interpreting interquartile range.
Identifying outliers and their impact on data.
Distinguishing between representative, random, and biased samples in statistics.

Lesson 90: Comparing Populations

Utilizing measures of center and spread to compare different populations.
Practical exercises in comparing data from various sources and drawing conclusions.

Probability Basics

Lesson 91: Understanding Probability and types of events

Probability of simple events.
Probability of opposite events.
Probability of mutually exclusive events.
Probability of overlapping events.

Lesson 92: Types of events

Probability of mutually exclusive events.
Probability of overlapping events.

Lesson 93: Experimental Probability and Theoretical Probability



Calculating experimental probabilities.

Making predictions using experimental probability.

Using collected data to find probabilities and make predictions. Making predictions using theoretical probability.

Compound Events and Independence

Lesson 94: Counting Outcomes

Finding the number of outcomes for compound events.

Finding the number of sums in compound events.

Solving word problems related to counting outcomes.

Lesson 95: Probability of Compound Events

Calculating the probability of compound events.

Identifying simulations that represent specific situations.

Lesson 96: Independence and Dependence

Identifying independent and dependent events.

Calculating the probability of independent and dependent events.