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Chapter 1 Integers and Rational Numbers

Lesson	Topic	UT Standards
1-1 Integers and Absolute Values	A) Integers on a Number Line	6.NS.5 6.NS.7.c
	B) Comparing and Ordering Integers	
	C) Absolute Value of Integers	
1-2 Adding and Subtracting Integers	A) Adding One-Digit Integers	7.NS.1.a 7.NS.1.b 7.NS.1.c 7.NS.1.d
	B) Subtracting One-Digit Integers	
	C) Adding Multiple-Digit Integers	
	D) Subtracting Multiple-Digit Integers	
1-3 Multiplying and Dividing Integers	A) Multiplying Integers	7.NS.2.a 7.NS.2.b 7.NS.2.c 7.EE.3
	B) Dividing Integers	
1-4 Order of Operations with Integers	A) Powers of Integers	7.NS.2.a 7.NS.2.c 7.NS.3 7.EE.3 8.EE.1
	B) Order of Operations with Integers	
1-5 Rational Numbers	A) Equivalent Fractions	7.NS.2.d 8.NS.1
	B) Fractions as Decimals	
1-6 Adding and Subtracting Fractions	A) Using Integer Rules to Add and Subtract Fractions with Common Denominators	7.NS.1.d 7.NS.3 7.EE.3
	B) Using Integer Rules to Add and Subtract Fractions with Different Denominators	
1-7 Multiplying and Dividing Fractions	A) Using Integer Rules to Multiply Fractions	7.NS.2.a 7.NS.2.b 7.NS.2.c 7.NS.3 7.EE.3
	B) Using Integer Rules to Divide Fractions	
	C) Complex Fractions	
1-8 Order of Operations with Rational Numbers	A) Order of Operations with Fractions and Decimals	7.NS.3 7.EE.3 8.EE.1
	B) Order of Operations with Rational Numbers	

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Chapter 2 Basics of Algebra

Lesson	Topic	UT Standards
2-1 Variables and Expressions	A) Parts of Variable Expressions	7.EE.2
	B) Writing Variable Expressions	
2-2 Operations and Variable Expressions	A) Omitting Multiplication Symbols with Variables	7.EE.1 7.EE.2
	B) Coefficients	
2-3 Properties of Numbers	A) Commutative Property	7.NS.1.d 7.EE.1 7.EE.2
	B) Associative Property	
	C) Identity Property	
	D) Inverse Property	
2-4 Distributive Property	A) Using the Distributive Property to Write Equivalent Expressions	7.EE.1 7.EE.2
2-5 Simplifying Algebraic Expressions	A) Simplifying Expressions with Like Terms	7.EE.1 7.EE.2
	B) Order of Operations with Variable Expressions	

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Chapter 3 Solving Equations and Inequalities

Lesson	Topic	UT Standards
3-1 One-Step and Two-Step Equations	A) Solutions of One-Variable Equations	7.EE.4.a 8.EE.7.b
	B) Solving One-Step Equations	
	C) Solving Two-Step Equations	
3-2 Multi-Step Equations	A) Solving Multi-Step Equations	7.EE.4.a 8.EE.7.a 8.EE.7.b
	B) Solving Equations with Variables on Both Sides	
	C) Identifying the Number of Solutions of Solved Equations	
	D) Solving Equations with Zero, One, or Many Solutions	
3-3 Equations with Rational Numbers	A) Solving Equations with Grouping Symbols in the Numerator	7.EE.4.a 8.EE.7.b
	B) Solving Equations with Fractions	
	C) Solving Equations with Decimals	
3-4 One-Step Addition and Subtraction Inequalities	A) Writing Inequalities	7.EE.4.b
	B) Solutions of Inequalities	
	C) Solving One-Step Inequalities by Adding or Subtracting on Both Sides	
3-5 One-Step Multiplication and Division Inequalities	A) Solving One-Step Inequalities by Multiplying or Dividing Both Sides by a Positive Number	7.EE.4.b
	B) Solving One-Step Inequalities by Multiplying or Dividing Both Sides by a Negative Number	
3-6 Multi-Step Inequalities	A) Solving Multi-Step Inequalities	7.EE.4.b
	B) Inequalities with Zero, Many, or Infinite Solutions	
	C) Graphing Solutions of Multi-Step Inequalities	

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Chapter 4 Proportions and Percents

Lesson	Topic	UT Standards
4-1 Proportions	A) Defining Proportions	7.RP.2.a 7.RP.2.c 7.RP.3
	B) Solving Proportions	
	C) Writing Proportions	
4-2 Rate Conversions	A) Converting Units Within a Measurement System	7.RP.1 7.RP.3
	B) Converting Units Between Measurement Systems	
	C) Converting Rates	
4-3 Scale	A) Determining Scale	7.RP.3 7.G.1
	B) Using Scale	
4-4 Fractions, Decimals, and Percents	A) Converting Between Fractions and Percents	7.EE.3
	B) Converting Between Decimals and Percents	
	C) Using Division to Convert Fractions to Percents	
4-5 Proportions and Equations with Percents	A) Percent Proportions	7.RP.3
	B) Percent Equations	
4-6 Percent Change	A) Amount of Change	7.RP.3
	B) Percent Change	
4-7 Discount and Markup	A) Discount	7.RP.3
	B) Markup	

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Chapter 5 Relations and Linear Functions

Lesson	Topic	UT Standards
5-1 Input and Output	A) Representing Relations in Different Forms	8.F.1
	B) Input and Output	
5-2 Relations and Functions	A) Independent and Dependent Variables	8.F.1 8.F.2
	B) Domain and Range	
	C) Relations and Functions	
5-3 Describing Functions	A) Using Graphs to Describe Functions	8.F.2 8.F.5
	B) Using Tables to Describe Functions	
5-4 Graphs of Linear Functions	A) Graphs of Linear Function	7.RP.2.b 7.RP.2.c
	B) Using Linear Functions to Complete Tables	
	C) Graphing Linear Functions	
	D) Solutions of Linear Functions	
	E) Identifying Intercepts	
5-5 Rules for Linear Equations	A) Writing Rules from Tables	7.RP.2.b
	B) Converting Between Linear Equations and Rules	
	C) Writing Linear Equations from Tables	
5-6 Direct Variation Graphs	A) Graphs of Direct Variation	7.RP.2.b 7.RP.2.c
	B) Equations of Direct Variation	7.RP.2.d 8.EE.5 8.EE.6 8.F.1 8.F.4
5-7 Direct Variation Tables and Equations	A) Tables of Direct Variation	7.RP.2.b 7.RP.2.c
	B) Direct Variation Equations and Coordinate Pairs	7.RP.2.d 8.EE.5 8.EE.6 8.F.1 8.F.4

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Chapter 6 Slope-Intercept Form and Systems

Lesson	Topic	UT Standards
6-1 Rate of Change	A) Units and Rate of Change	8.EE.5 8.EE.6 8.F.4
	B) Rate of Change Equation	
	C) Finding Rate of Change	
6-2 Slope	A) Classifying Slopes	8.EE.5 8.EE.6 8.F.4
	B) Slope as Rise Over Run	
	C) Slope of a Line Between Two Points	
6-3 Slope-Intercept Form	A) Understanding Equations in Slope-Intercept Form	8.EE.6 8.F.2 8.F.3 8.F.4
	B) Identifying Slopes and y-Intercepts from Equations in Slope-Intercept Form	
	C) Using Slopes and y-Intercepts to Write Equations in Slope-Intercept Form	
	D) Converting Equations to Slope-Intercept Form	
6-4 Writing and Graphing Equations in Slope-Intercept Form	A) Defining Scientific Notation	8.EE.6 8.F.2 8.F.3 8.F.4
	B) Writing Scientific Notation in Standard Form	
	C) Writing Numbers in Scientific Notation	
	D) Multiplying Numbers in Scientific Notation	
	E) Dividing Numbers in Scientific Notation	
6-5 Solutions of Systems of Equations	A) Graphs of Systems of Equations	8.EE.8.a 8.EE.8.b 8.EE.8.c
	B) Solutions of Systems of Linear Equations	
	C) Graphs of Systems of Equations and the Number of Solutions	
6-6 Graphing to Solve Systems of Equations	A) Graphing Systems of Linear Equations	8.EE.8.a 8.EE.8.b 8.EE.8.c
	B) Graphing to Solve Systems of Linear Equations	
6-7 Substitution to Solve Systems of Equations	A) Substitution to Solve Systems of Equations that Are Solved for the Same Variable	8.EE.8.b 8.EE.8.c
	B) Substitution to Solve Systems of Equations that Are Solved for Different Variables	

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Chapter 7 Exponent Properties and Scientific Notation

Lesson	Topic	UT Standards
7-1 Integer Exponents	A) Expressions to the Zero Power	7.EE.2 8.EE.1
	B) Expressions with Negative Exponents	
7-2 Product of Powers Property	A) Using the Product of Powers Property to Multiply Expressions with a Single Base	8.EE.1
	B) Using the Product of Powers Property to Multiply Expressions with Multiple Bases	
7-3 Quotient of Powers Property	A) Using the Quotient of Powers Property to Simplify Expressions with a Single Base	8.EE.1
	B) Using the Quotient of Powers Property to Simplify Expressions with Multiple Bases	
7-4 GCF and LCM of Variable Expressions	A) GCF of Expressions with Variables	8.EE.1
	B) Simplifying Fractions that Contain Variables	
	C) LCM of Expressions with Variables	
7-5 Fraction Operations with Variables	A) Adding or Subtracting Rational Expressions with Variables - Same Denominator	8.EE.1
	B) Equivalent Fractions with Variables	
	C) Adding or Subtracting Rational Expressions with Variables - Different Denominators	
	D) Multiplying or Dividing Expressions that Contain Variables	
7-6 Power of a Power Property	A) Expanding Expressions to Show the Power of a Power Property	8.EE.1
	B) Simplifying Expressions with the Power of a Power Property	
7-7 Power of a Product and Quotient Properties	A) Expanding Expressions to Show the Power of a Product Property	8.EE.1
	B) Simplifying Expressions with the Power of a Product Property	
	C) Expanding Expressions to Show the Power of a Quotient Property	
	D) Simplifying Expressions with the Power of a Quotient Property	
7-8 Scientific Notation and Standard Form	A) Defining Scientific Notation	8.EE.3
	B) Writing Scientific Notation in Standard Form	
	C) Writing Numbers in Scientific Notation	

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Chapter 7 Exponent Properties and Scientific Notation (cont.)

Lesson	Topic	UT Standards
7-9 Operations with Scientific Notation	A) Adding and Subtracting Numbers in Scientific Notation	8.EE.4
	B) Multiplying Numbers in Scientific Notation	
	C) Dividing Numbers in Scientific Notation	

Chapter 8 Number Sets and the Pythagorean Theorem

Lesson	Topic	UT Standards
8-1 Square Roots	A) Perfect Square Numbers	8.NS.2 8.NS.3
	B) Square Roots of Perfect Squares	
	C) Finding the Integers a Square Root Lies Between	
8-2 Cube Roots and Order of Operations	A) Cubing Rational Numbers	8.NS.2 8.NS.3
	B) Perfect Cubes	
	C) Cube Roots of Perfect Cubes	
	D) Square or Cube Roots of Squares and Cubes	
	E) Square Roots and the Order of Operations	
8-3 Rational and Irrational Numbers	A) Rational and Irrational Numbers	8.NS.1 8.NS.2
	B) Ordering Real Numbers	
	C) Approximating Square Roots	
8-4 Solving Equations with Squared Variables	A) Solving Quadratic Equations with Square Roots	8.EE.2
8-5 Pythagorean Theorem	A) Right Triangles	8.G.6 8.G.7
	B) Writing the Pythagorean Theorem	
	C) Using the Pythagorean Theorem to Find Side Lengths	
	D) Using the Inverse of the Pythagorean Theorem	
8-6 Distance Between Points	A) Vertical and Horizontal Distance on the Coordinate Plane	8.G.7 8.G.8
	B) Using the Pythagorean Theorem to Find Distance Between Points	
	C) The Distance Formula	

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Chapter 9 Geometry Basics and Angle Relationships

Lesson	Topic	UT Standards
9-1 Points and Lines	A) Points	4.G.1
	B) Lines	
	C) Rays	
	D) Segments	
9-2 Angles	A) Parts of Angles	7.G.5
	B) Naming Angles	
	C) Adjacent Angles	
	D) Angle Measures	
9-3 Complementary and Supplementary Angles	A) Complementary Angles	7.G.5
	B) Supplementary Angles	
9-4 Linear Pairs and Vertical Angles	A) Linear Pairs	7.G.5
	B) Vertical Angles	
9-5 Parallel Lines and Angle Relationships	A) Parallel Lines and Transversals	8.G.5
	B) Identifying Corresponding, Alternate Exterior, and Alternate Interior Angles	
	C) Parallel Lines and Measures of Related Angles	

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Chapter 10 Triangles and Polygons

Lesson	Topic	UT Standards
10-1 Lengths of Sides in Triangles	A) Relationships Among Side Lengths in a Triangle	7.G.2
	B) Possible Lengths of the Longest or Shortest Side in a Triangle	
10-2 Angle Measures in Triangles	A) Sum of the Measure of Interior Angles of a Triangle	7.G.2 8.G.5
	B) Finding a Missing Angle Measure in a Triangle	
10-3 Classifying Triangles	A) Classifying Triangles by Their Angles	4.G.2
	B) Classifying Triangles by Their Sides	
10-4 Angle and Side Relationships in a Triangle	A) Using Angle Measures to Order the Side Lengths of Triangles	7.G.2
	B) Using Side Lengths to Order the Angle Measures of Triangles	
10-5 Interior and Exterior Angles of Triangles	A) Interior and Exterior Angles of Triangles	8.G.5
	B) Exterior Angles of a Triangle and Their Remote Interior Angles	
10-6 Angles of Polygons	A) Diagonals of Polygons	
	B) Concave and Convex Polygons	
	C) Sum of the Measures of Interior Angles of Convex Polygons	

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Chapter 11 Transformations, Congruence, and Similarity

Lesson	Topic	UT Standards
11-1 Introduction to Transformations	A) Transformation Statements	8.G.1.a 8.G.1.b 8.G.1.c 8.G.2 8.G.3
	B) Triangles and Transformations	
11-2 Translations	A) Translations on the Coordinate Plane	8.G.1.a 8.G.1.b 8.G.1.c 8.G.2 8.G.3
	B) Writing Translation Functions	
	C) Translations with Translation Functions	
11-3 Reflections	A) Naming the Vertices of a Reflected Preimage	8.G.1.a 8.G.1.b 8.G.1.c 8.G.2 8.G.3
	B) Lines of Reflection	
	C) Identifying Images	
	D) Reflecting in Horizontal and Vertical Lines	
	E) Reflecting in the x-Axis and y-Axis	
	F) Reflecting in y=x and y=-x	
11-4 Rotations	A) Rotation about the Center of a Figure	8.G.1.a 8.G.1.b 8.G.1.c 8.G.2 8.G.3
	B) Rotation about the Origin	
11-5 Dilations	A) Types of Dilations	8.G.3 8.G.4
	B) Scale Factor	
	C) Dilation about a Point	
	D) Dilation about the Origin	
11-6 Congruence	A) Congruent Figures and Congruence Statements	8.G.2
	B) Corresponding Sides and Angles in Congruent Figures	
	C) Missing Measures in Congruent Figures	
11-7 Similarity	A) Similar Figures and Similarity Statements	8.G.4
	B) Corresponding Sides and Angles in Similar Figures	
	C) Missing Measures in Similar Figures	

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Chapter 12 Area, Surface Area, and Volume

Lesson	Topic	UT Standards
12-1 Circumference and Area of Circles	A) Parts of Circles	7.G.4
	B) Relationship Between Radius and Diameter	
	C) Circumference	
	D) Areas of Circles	
12-2 Naming Three-Dimensional Figures	A) Bases of Solids	7.G.3
	B) Naming Solids	
	C) Cross Sections of Solids	
12-3 Surface Area of Cylinders and Right Prisms	A) Lateral Faces of Prisms	7.G.6
	B) Surface Areas of Prisms	
	C) Surface Areas of Cylinders	
12-4 Surface Area of Right Pyramids, Cones, and Spheres	A) Lateral Faces of Pyramids	7.G.6
	B) Slant Height	
	C) Surface Areas of Pyramids	
12-5 Volume of Cylinders and Prisms	A) Volumes of Prisms	7.G.6
	B) Volumes of Cylinders	8.G.9
12-6 Volume of Pyramids and Cones	A) Volumes of Pyramids	7.G.6
	B) Volumes of Cones	8.G.9
12-7 Volume of Spheres	A) Volumes of Spheres	8.G.9
	B) Volumes of Hemispheres	
	C) Radii of Spheres	

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Chapter 13 Probability and Simulations

Lesson	Topic	UT Standards
13-1 Introduction to Probability	A) Numbers that Represent Probability	7.SP.5
	B) Possible Outcomes	
	C) Events	
	D) Favorable Outcomes	
	E) Likely and Unlikely Events	
13-2 Experimental and Theoretical Probability	A) Experimental Probability of Single and Multiple Events	7.SP.6 7.SP.7.a 7.SP.7.b
	B) Theoretical Probability of Single and Multiple Events	
	C) Theoretical Probability and Making Inferences	
13-3 Compound Events	A) Tables and Outcomes of Independent Events	7.SP.8.b
	B) Using Multiplication to Count Outcomes for Independent Events	
	C) Tree Diagrams and Outcomes of Dependent Events	
	D) Using Multiplication to Count Outcomes for Dependent Events	
13-4 Compound Probability	A) Probability Notation for Compound Events	7.SP.8.a 7.SP.8.b
	B) Probability of Independent Events	
	C) Probability of Dependent Events	
13-5 Populations, Samples, and Bias	A) Population	7.SP.1 7.SP.2
	B) Samples	
	C) Data Sets from Random Representative Samples	
13-6 Making Inferences Using Random Samples	A) Samples and Conclusions	7.SP.1 7.SP.2
	B) Samples and Predications	
	C) Supporting Predictions and Conclusions	
13-7 Simulations	A) Appropriate Simulations Design	7.SP.8.c
	B) Making Appropriate Conclusions	
	C) Steps to Designing Simulations	

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Chapter 14 Data Analysis

Lesson	Topic	UT Standards
14-1 Measures of Center and Variation	A) Mean and Median	7.SP.3
	B) Range, MAD, and IQR	
	C) Measures of Variation and Measures of Center	
14-2 Comparative Inferences	A) Dot Plots and Measures of Center and Variability	7.SP.3 7.SP.4
	B) Mean as a Multiple of MAD	
	C) Making Statements about Data Sets from Measures of Center and Variability	
14-3 Reading Scatter Plots	A) Scatter Plots	8.SP.1
	B) Meanings of Points in Scatter Plots	
	C) Patterns in Scatter Plots	
14-4 Lines of Fit	A) Scatter Plots of Linear and Nonlinear Data	8.SP.2 8.SP.3
	B) Lines of Fit	
	C) Meanings of Numbers in Lines of Fit	
14-5 Predicting with Lines of Fit	A) Making Predictions with Lines of Fit	8.SP.2 8.SP.3
	B) Observed and Predicted Values	