CARNEGIE LEARNING

1 Ratios and Rates

This chapter begins with a review of ratio and unit rate concepts, and scaling up and scaling down strategies to determine equivalent ratios. The means and extremes strategy for solving proportions is introduced and connected to the students' previous understanding of equivalent ratios.

Standards: 7.4A, 7.4B, 7.4D

CARNEGIE LEARNING

2 Direct Variation and Constant of Proportionality

This chapter develops the representations of proportional relationships between quantities using words, tables, equations, and graphs. The constant of proportionality is introduced and used to solve various real-world problems.

Standards: 7.4A, 7.4C, 7.4D

CARNEGIE LEARNING

3 Rates and Percents

This chapter extends the use of proportional reasoning to solve percent problems.

Standards: 7.4D

CARNEGIE LEARNING

4 Financial Literacy: Tax, Interest, and Budgets

This chapter focuses on students' financial literacy as they investigate taxes, interest, net worth, and budgeting. Net worth is defined with regard to assets and liabilities, and students are introduced to different types of savings plans as well as some of the complexities of household budgeting.

Standards: 7.4D, 7.13A, 7.13B, 7.13C, 7.13D, 7.13E, 7.13F

CARNEGIE LEARNING

5 Numerical and Algebraic Expressions and Equations

This chapter begins with operations with rational numbers, then moves to evaluating algebraic expressions, simplifying algebraic expressions, and determining whether algebraic expressions are equivalent. Using the distributive properties and factoring is also addressed.

Standards: 6.7C, 7.2A, 7.3A, 7.3B

CARNEGIE LEARNING

Lesson	Lesson Title / Subtitle	Lesson Subtitle	TEKS	Key Math Objectives	Key Terms
Learning Individually with MATHia or Skills Practice			7.3A	In the MATHia software, students describe situations in which opposite quantities combine to make 0. They identify p + q as the number located a distance |q| from p. Students add and subtract integers using a number line and an algorithm. They use fact families to explore dividing integers. Students operate with rational numbers to solve mathematical and real-world problems. Students evaluate numeric expressions involving integers using the Order of Operations.	

CARNEGIE LEARNING

6 Solving Equations and Inequalities

This chapter uses models, properties of rational numbers, and operations to develop strategies for solving equations and inequalities. Algebraic reasoning is used to solve real-world problems.

Standards: 7.3A, 7.7A, 7.10A, 7.10B, 7.10C, 7.11A, 7.11B, 7.11C

Lesson	Lesson Title / Subtitle	Lesson Subtitle	TEKS	Key Math Objectives	Key Terms
6.1	**Picture This**	Picture Algebra	7.7A 7.10A 7.11A	• Use drawings to represent daily life situations. • Develop different methods to represent daily life situations mathematically.	• Equation
6.2	**Maintaining a Balance**	Solving Equations	7.10B 7.11A 7.11B	• Develop an understanding of equality. • Use properties of equality to solve equations represented with algebra tiles. • Solve one-step equations.	• Properties of Equality
6.3	**Planning a Graduation Party**	Solving Two-Step Equations	7.7A 7.10A 7.10B 7.10C 7.11A	• Write two-step equations. • Solve two-step equations. • Check solutions algebraically. • Verify solutions within a problem context.	• Two-step equation
6.4	**Solving in Big-Time Style**	Using Two-Step Equations	7.7A 7.10A 7.11C	• Write two-step equations. • Solve two-step equations. • Verify solutions within a problem context.	
6.5	**We're Shipping Out!**	Solving and Graphing Inequalities in One Variable	7.10A 7.10B 7.10C 7.11A 7.11B	• Write simple inequalities. • Graph one-variable inequalities. • Solve one-variable inequalities.	• Solve an inequality
Learning Individually with MATHia or Skills Practice			7.3A 7.10A 7.10B 7.11A 7.11B	In the MATHia software, students rewrite algebraic expressions involving integer coefficients using the Distributive Property and Order of Operations. They create visual models to represent real-world situations and solve using reasoning. Students write and solve expressions from given real-world problems using tables. They solve a variety of two-step equations and inequalities using formal strategies.	

CARNEGIE LEARNING

7 Solving Problems with Equations and Inequalities

This chapter focuses on the use of algebraic reasoning to solve real-world problems posed with positive and negative rational numbers. Tables, graphs, and equations are used throughout.

Standards: 7.7A, 7.10A, 7.11A

CARNEGIE LEARNING

8 Scale Drawings and Scale Factor

This chapter explores scale drawings, scale models, and scale factors through real-world problems.

Standards: 7.5A, 7.5C

CARNEGIE LEARNING

9 Circles

This chapter develops the formula for the area of a circle. Problems are solved involving circles and circle formulas.

Standards: 4.6A, 7.5B, 7.8C, 7.9B, 7.9C

CARNEGIE LEARNING

10 Volume and Surface Area of Prisms and Pyramids

This chapter develops an understanding of three-dimensional figures using nets of rectangular and triangular prisms and pyramids. Nets are then used to determine surface area. Estimation is emphasized prior to calculations and real world problems are solved using volume, surface area, and lateral area formulas.

Standards: 7.8A, 7.8B, 7.8C, 7.9A, 7.9D

Lesson	Lesson Title / Subtitle	Lesson Subtitle	TEKS	Key Math Objectives	Key Terms
10.5	**The Acoustics in this Lesson Are Outstanding!**	Using Volume, Surface Area, and Lateral Area	7.9A 7.9D	• Compare and contrast the surface area of geometric solids. • Compare and contrast the lateral area of geometric solids. • Apply volume, surface area, and lateral area concepts to real-world situations.	• Lateral area of a pyramid • Regular pyramid
Learning Individually with MATHia or Skills Practice			7.8A 7.8B 7.8C 7.9A 7.9D	In the MATHia software, students calculate the volumes of right prisms and pyramids in mathematical and real-world contexts. They determine the surface area of right prisms using nets and then calculate the surface area of given right prisms.	

CARNEGIE LEARNING

11 Data Collection

This chapter emphasizes data collection, sampling, random samples, and frequencies.

Standards: 7.6F, 7.6G, 7.12B

Lesson	Lesson Title / Subtitle	Lesson Subtitle	TEKS	Key Math Objectives	Key Terms
11.1	**We Want to Hear from You!**	Formulating Questions and Collection Data	7.6F	• Collect data from a survey and analyze the results. • Differentiate between a census and a sample. • Differentiate between a parameter and a statistic.	• Survey • Data • Population • Census • Sample • Parameter • Statistic
11.2	**Dealing with Data: Selecting a Sample**	Collecting Data through Random Sampling	7.6F	• Differentiate between a random sample and a sample that is not chosen randomly. • Use several methods to select a random sample.	• Random sample • Random number generator • Random number table
11.3	**Floor Plans and Tiles**	Random Sampling	7.6F 7.6G 7.12B	• Investigate how results from a random sample are more reliable in representing the population than results from a sample that is not random. • Use sampling and proportional reasoning to predict the value of a population parameter.	• Dot plot (line plot)
11.4	**What Does the Data Mean?**	Using Samples, Centers, and Spreads to Describe Data	7.6F 7.6G 7.12B	• Analyze measures of center for samples from a population. • Analyze measures of variation for samples from a population.	• Variability • Spread • Range • Mean absolute deviation • Deviation from the mean
11.5	**Taking a Survey**	Using Sample Size	7.6F 7.6G	• Investigate the sample size of a survey. • Investigate the concept that as the sample size increases, the statistic obtained gets closer to the actual population parameter.	• Sample size
Learning Individually with MATHia or Skills Practice			7.6F 7.12B	In the MATHia software, students use statistics to gain information about a population.	

CARNEGIE LEARNING

12 Comparing Populations

This chapter uses measures of variability to compare inferences across two populations.

Standards: 7.6G, 7.6H, 7.12A, 7.12C

CARNEGIE LEARNING

13 Introduction to Probability

This chapter investigates experimental and theoretical probabilities. Probability models are developed and used to calculate probabilities of events. measures of variability to compare inferences across two populations.

Standards: 7.6A, 7.6B, 7.6C, 7.6D, 7.6E, 7.6H, 7.6I

Lesson	Lesson Title / Subtitle	Lesson Subtitle	TEKS	Key Math Objectives	Key Terms
13.1	**Rolling, Rolling, Rolling . . .**	Defining and Representing Probability	7.6A 7.6D 7.6E 7.6H	• Differentiate between an outcome and an event for an experiment. • List the sample space for an experiment. • Determine the probability for an event. • Understand that the probability for an event is between 0 and 1 that can be expressed as a fraction, decimal, or percent. • Determine that the sum of the probabilities of the outcomes of an experiment is always 1.	• Outcome • Experiment • Sample space • Event • Simple event • Probability • Equally likely
13.2	**Toss the Cup**	Determining Experimental Probability	7.6A 7.6B 7.6C 7.6H 7.6I	• Conduct trials of an experiment. • Predict the experimental probability of an event using the results from the trials of an experiment. • Use proportional reasoning to predict the probability of random events.	• Experimental probability
13.3	**Double Your Fun**	Determining Theoretical Probability	7.6A 7.6D 7.6I	• Calculate the experimental and theoretical probability of an experiment. • Determine the difference between experimental and theoretical probability. • Use proportional reasoning to predict probability of random events.	• Theoretical probability
13.4	**A Toss of a Coin**	Simulating Experiments	7.6A 7.6B 7.6C 7.6H	• Conduct trials using a simulation to determine probability. • Conduct a large number of trials to demonstrate that experimental probability approaches theoretical probability.	• Simulation • Trial
13.5	**Roll the Cubes Again**	Using Technology for Simulations	7.6B 7.6C 7.6H 7.6I	• Use technology to simulate a large number of trials of an experiment.	• Spreadsheet
Learning Individually with MATHia or Skills Practice			7.6B 7.6D 7.6E	In the MATHia software, students construct and interpret probability models of simple events. They use proportions to make predictions based on samples and theoretical probabilities. Students use results of probability experiments to make conjectures about theoretical probabilities. They select simulations to represent simple events.	

CARNEGIE LEARNING

14 Probability of Compound Events

This chapter focuses on probabilities of compound events. Simulations are used to generate frequencies for compound events.

Standards: 7.6A, 7.6B, 7.6C, 7.6D, 7.6I

Lesson	Lesson Title / Subtitle	Lesson Subtitle	TEKS	Key Math Objectives	Key Terms
14.1	**Is it Better to Guess?**	Using Models for Probability	7.6D	• Determine the probability model for an experiment. • Construct and interpret a uniform probability model. • Construct and interpret a non-uniform probability model.	• Probability model • Uniform probability model • Non-uniform probability model
14.2	**Three Girls and No Boys?**	Creating and Using Probability Models	7.6A 7.6B 7.6D	• Determine the probability model for an experiment. • Construct and interpret a non-uniform probability model.	• Tree diagram • Complementary events
14.3	**Pet Shop Probability**	Determining Compound Probability	7.6A 7.6D 7.6I	• Use probability models to calculate compound probabilities.	• Compound event
14.4	**What Type of Blood Do You Have?**	Simulating Probability of Compound Events	7.6A 7.6B 7.6C 7.6I	• Use simulations to estimate compound probabilities.	
Learning Individually with MATHia or Skills Practice			7.6A 7.6B 7.6C 7.6D 7.6I	In the MATHia software, students use simulations, tree diagrams, organized lists, and tables to determine compound probabilities. They select simulations to represent compound events.	