

SCHOOL DISTRICT U-46

COMPANION TO PRE ALGEBRA 1 PACING GUIDE

Course Title: **Pre Algebra 1 (7th Grade)**

Textbook: ***Mathematics Applications and Concepts Course 2*** © 2006

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Overview of Chapters

Chapter 1	Decimals Patterns and Algebra
Chapter 2	Statistics: Analyzing Data
Chapter 3	Algebra: Integers
Chapter 4	Algebra: Linear Equations and Functions
Chapter 5	Functions, Decimals, and Percents
Chapter 6	Applying Fractions
Chapter 7	Ratios and Proportions
Chapter 8	Applying Percent
Chapter 9	Probability
Chapter 10	Geometry
Chapter 11	Geometry: Measuring Two-Dimensional Figures
Chapter 12	Geometry: Measuring Three-Dimensional Figures

CHAPTER 1 DECIMALS PATTERNS AND ALGEBRA

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
1-1 Combine	Problem Solving Strategy (4 step plan)	8.7.12 Basic Combine with ISAT-type Extended Response practice throughout the year. See strategies on page 7. Include lesson 1-5a
1-2 11-1 Teach	Powers and Exponents Squares and Square Roots	6.7.01 supplement with powers of 10, i.e. $10 \times 10 \times 10 = 10^3$ and $4.3 \times 10^3 = 4300$ 6.7.04 Proficient 6.7.07 Basic
1-3 Teach	Order of Operations	6.7.09 Basic Missing problems with fractions Supplement with problems with benchmark fractions (i.e. $1/2$, $2/3$, $3/4$, etc.)
1-4 Teach	Algebra: Variables and Expressions	8.7.05 Basic Missing integers but covered in Chapter 3
1-5a Teach	Problem Solving Strategy <i>Guess and Check</i>	8.7.12 Basic Use extended response format Use with lesson 1-1
1-5 Postpone	Algebra: Equations	8.7.11 Basic Mental Math – use with Chapter 4
1-6 Teach	Algebra: Properties	6.7.10 Proficient Missing inverse properties (see sections 3-4 and 6-5)
1-7 Teach	Sequences	8.7.01 Proficient
1-8 Teach	Measurement: Metric System	7.7.05 Proficient Need to include word problems that require unit conversion (good 1-2 day stand-alone lesson or combine w/ Lesson 6-7))
1-9 Postpone	Scientific Notation	4 th quarter?

CHAPTER 2 STATISTICS: ANALYZING DATA

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
2-1 Teach	Frequency Tables	10.7.1, 10.7.03 Basic Only covers frequency tables
2-2a Skip	Problem Solving Strategy Using a Graph	
2-2 Teach	Making Predictions	10.7.01, 10.7.03, 10.7.04 Basic Introduce line of best fit with scatter plot
2-3 Combine	Line Plots	10.7.01 Basic Combine with 2-4
2-4 Combine	Mean, Median, and Mode	10.7.05 Proficient
2-5 Skip	Stem-and-Leaf Plots	
2-6 Skip	Box-and-Whisker Plots	
2-6a Skip	Graphing Calculator Investigation	
2-7 Teach	Bar Graphs and Histograms	10.7.01, 10.7.03 Basic Include interpreting circle graphs
2-7b Skip	Spreadsheet Investigation	
2-8 Postpone	Misleading Statistics	Not a 7 th grade standard Discussion
Teach	Compare different representations of same data	Need to include 10.7.02 Supplement (Ex.: spreadsheet lesson in computer class)

CHAPTER 3 ALGEBRA: INTEGERS

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal/Grade Objective/Comments</i>
3-1 Combine	Integers and Absolute Value	6.7.02 Proficient Combine with 3-2
3-2 Combine	Comparing and Ordering Integers	9.7.15 Supplement (determine distance between numbers on a vertical or horizontal number line) 6.7.05 Basic
3-3 Teach	Geometry: The Coordinate Plane	9.7.05 Proficient
3-4a Skip	Adding Integers (Lab)	
3-4 Teach	Adding Integers	6.7.08, 8.7.05 Basic
3-5a Skip	Subtracting Integers (Lab)	
3-5 Teach	Subtracting Integers	6.7.08, 8.7.05 Basic 2days
3-6a Teach	Problem Solving Strategy Looking for a Pattern	8.7.12 Basic Combine with ISAT-type Extended Response practice throughout the year.
3-6 Combine	Multiplication of Integers	6.7.08, 8.7.05 Basic 3-6 and 3-7 together
3-7 Combine	Division of Integers	6.7.08, 8.7.05 Basic
Teach	Short Response	Teach ISAT-type Short Response

CHAPTER 4 ALGEBRA: LINEAR EQUATIONS AND FUNCTIONS

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal/Grade Objective/Comments</i>
4-1 Teach	Writing Expressions and Equations	8.7.02 Proficient
4-2a Skip	Solving Equations Using Models	
4-2 Teach	Solving Addition and Subtraction Equations	8.7.11 Basic
4-3 Teach	Solving Multiplication Equations	8.7.11 Basic (may want to combine w/ division equations)
Teach	Solving Division Equations	8.7.11 Supplement
4-4a Teach	Problem Solving Strategy Work Backward	8.7.12 Basic Combine with ISAT-type Extended Response practice throughout the year.
4-4 Teach	Solving Two-Step Equations	8.7.11 Basic
4-5 Teach	Inequalities	8.7.11 Basic 8.7.09 Proficient
4-6 Teach	Functions and Linear Equations	8.7.06 (function table) 8.7.07, 8.7.08 Basic Supplement w/ interpretation of graphs i.e. interpreting speed during bike race (CMP Variables and Patterns)
4-7 Skip	Lines and Slope	
Teach	Combining Like Terms	8.7.03 Supplement
Teach	Equivalent Algebraic Expressions and Distributive Property	8.7.04 Supplement i.e. $2(x+5) = 2x + 10$ or $3x + 7 = 7 + 3x$
6-5 Teach (w/ch 4)	Algebra: Solving Equations	8.7.11, 6.7.10 Basic (introduce)

CHAPTER 5 FRACTIONS, DECIMALS, AND PERCENTS

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
5-1 Teach	Prime Factorization	6.7.07 Basic
5-2a Teach	Problem Solving Strategy Make an Organized List	8.7.12 Basic
5-2 Review	Greatest Common Factor	6.7.07 Basic Use problems as bell-ringers (this is review)
5-3 Review	Simplifying Fractions	Use problems as bell-ringers (this is review)
5-4 Teach	Fractions and Decimals	6.7.03 Basic
5-5 Teach	Fractions and Percents	6.7.16 Proficient 6.7.03 Basic
5-6 Teach	Percents and Decimals	6.7.16 Proficient 6.7.03 Basic Follow w/quiz
5-7 Review	Least Common Multiple	Use problems as bell-ringers (this is review)
5-8 Teach	Comparing and Ordering Rational Numbers	6.7.05 Advanced
Teach	Identify and locate rational numbers on a number line	6.7.06 Supplement

CHAPTER 6 APPLYING FRACTIONS

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
6-1 Review	Estimating with Fractions	Use problems as bell-ringers (this is review) Include ruler activities in this chapter
Postpone	Estimate and analyze effect on the accuracy of the results	6.7.12 Basic supplement and use p.558
6-2 Combine	Adding and Subtracting Fractions (proper fractions only) i.e: $\frac{1}{2} + \frac{1}{3}$ or $\frac{1}{2} - \frac{1}{3}$	6.7.11 Basic 6.7.08 Basic Combine 6.2, 6.3, 6.4, 6.6 Teach Calculator Keys
6-3 Combine	Adding and Subtracting Mixed Numbers	6.7.11 Basic 6.7.08 Basic Combine 6.2, 6.3, 6.4, 6.6 Teach Calculator Keys
6-3b Teach	Problem Solving Strategy Eliminate Possibilities	8.7.12 Basic Emphasize multiple-choice testing strategies
6-4 Combine	Multiplying Fractions and Mixed Numbers	6.7.11 Basic 6.7.08 Basic Combine 6.2, 6.3, 6.4, 6.6 Teach Calculator Keys
6-5 Teach (w/ch 4)	Algebra: Solving Equations	6.7.11 Basic 8.7.11 Basic (introduce)
6-6 Combine	Dividing Fractions and Mixed Numbers	6.7.11 Basic 6.7.08 Basic Combine 6.2, 6.3, 6.4, 6.6 Teach Calculator Keys

6-7 Combine	Measurement: Changing Customary Units	6.7.05 Basic (good 1-2 day stand-alone lesson or combine w/ Lesson 1-8)
6-8 Postpone	Geometry: Perimeter and Area	9.7.02 Basic Include before lesson 11-4
6-9a Skip	Circumference of a Circle	
6-9 Skip	Geometry: Circles and Circumference	

CHAPTER 7 RATIOS AND PROPORTION

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
7-1 Teach	Ratios	6.7.14 Proficient
7-2 Teach	Rates	6.7.14 Proficient
7-2b Skip	Rate of Change	
7-3 Teach	Algebra: Solving Proportions	6.7.15 Proficient
7-3a Skip	Wildlife Sampling (Lab)	
7-4a Teach	Problem Solving Strategy Draw a Diagram	8.7.12 Basic
7-4 Teach	Geometry: Scale Drawings	7.7.06, 6.7.15 Proficient (skip scale-factor)
7-4b Skip	Spreadsheet Investigation Scale Drawings	
7-5 Teach	Fractions, Decimals, and Percents	6.7.03 Proficient
7-6 Skip	Percents Greater Than 100% Percents Less Than 1%	
7-7 Combine	Percent of a Number	6.7.15 Proficient 6.7.17 Basic Combine w/ lesson 7-8
7-8a Skip	Using a Percent Model	
7-8 Teach	The Percent Proportion	6.7.15 Proficient 6.7.17 Basic Combine w/ lesson 7-7 Go to lesson 8-2 next

CHAPTER 8 APPLYING PERCENT

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
8-1 Skip	Percent and Estimation	Discuss reasonableness of answers when solving percent problems
8-1b Skip	Problem-Solving Strategy Reasonable Answers	Discuss reasonableness of answers when solving percent problems
8-2 Teach w/ Ch 7	Algebra: The Percent Equation	8.7.10, 8.7.11 Basic (after 7-7 and 7-8)
8-3a Skip	Sampling	
8-3 Skip	Statistics: Using Statistics to Predict	
8-4 Skip	Percent of Change	
8-5 Teach w/ Ch 7	Sales Tax and Discount	6.7.17 Basic Supplement: teach tip using estimation
8-6 Teach	Simple Interest	6.7.17 Basic
8-6b Skip	Spreadsheet Investigation Excel	
Teach	ISAT-type Extended Response practice	Supplement

CHAPTER 9 PROBABILITY

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
9-1 Teach	Simple Events	10.7.06 Basic ISAT REVIEW
9-2 Teach	Tree Diagrams	10.7.07 Basic ISAT REVIEW
9-3 Teach	The Fundamental Counting Principle	10.7.07 Basic ISAT REVIEW
9-4 Teach	Permutations	10.7.08 Basic
9-5a Skip	Exploring Combinations	
9-5 Teach	Combinations	10.7.08 Basic
9-6a Skip	Problem Solving Strategy Act it Out	
9-6 Skip	Theoretical and Experimental Probability	
9-6b Skip	Experimental Probability	
9-7 Teach	Independent and Dependent Events	10.7.06 Basic

Chapter 10 Geometry

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
10-1 Review	Angles	9.7.09 Proficient Bell-ringer review
10-1b Skip	Constructing and Bisecting Angles	
10-2 Teach/Postpone	Statistics: Making Circle Graphs	9.7.04 Review/mention diameter and radius 10.7.01,10.7.03 Basic Interpret only, include w/ chapter 2 Teach making them 4 th Quarter
10-3 Teach	Angle Relationships	9.7.08 Basic 9.7.10 Proficient
10-3b Skip	Constructing Parallel Lines	
10-4 Teach	Triangles	9.7.03 Basic
10-4b Skip	Constructing Triangles	
10-5 Teach	Quadrilaterals	9.7.01, 9.7.03 Basic
Teach	Congruent Figures	9.7.13 Supplement
10-6 Teach	Similar Figures	9.7.13 Supplement 9.7.14 Proficient Skip indirect measurement (CMP Stretching and Shrinking is a good resource for similar figures) Compare and contrast similar/congruent
10-7a Postpone	Problem Solving Use Logical Reasoning	8.7.12 Basic 4 th Q
Teach	Insert an ER type lesson here	8.7.12 Basic
10-7 Teach	Polygons and Tessellations	9.7.01 Basic Teach polygons, skip tessellations
10-8 Teach	Translations	9.7.06 Basic 9.7.07 Basic
10-8b Skip	Spreadsheet Investigation Dilations	
10-9 Teach	Reflections	9.7.06 Basic 9.7.07 Basic
10-9b Review	Hands-On Lab Rotations	9.7.07 Basic Review the concept of rotation Discus p.461

CHAPTER 11 GEOMETRY: MEASURING TWO-DIMENSIONAL FIGURES

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
11-1 Combine	Squares and Square Roots	6.7.07 Basic 11-1 and 11-2 together
11-2 Combine	Estimating Square Roots	6.7.13 Basic Change directions to: Estimate between the nearest two whole numbers.
11-3 Skip	The Pythagorean Theorem	
6-8 Teach	Perimeter and Area	9.7.04 Basic
11-4 Teach	Area of Parallelograms	9.7.02 Basic 7.7.02 Basic teach 6-8 before this – then some lessons on changing area- constant perimeter etc. 9.7.12 Basic
11-5 Teach	Area of a Triangles and Trapezoids	9.7.02 Basic 7.7.02 Basic Intro level for trapezoids
11-6 Skip	Areas of Circles	
11-7a Teach	Problem Solving Strategy Solve a Simpler Problem	8.7.12 Basic ISAT-type Extended Response practice
11-7 Teach	Area of Complex Shapes	9.7.02 Basic 7.7.02 Basic Circle problems are NOT 7 th grade curriculum
11-8 Skip	Probability: Area Models	

CHAPTER 12 GEOMETRY: MEASURING THREE-DIMENSIONAL FIGURES

<i>Section</i>	<i>Math Skills and Concepts</i>	<i>State Goal.Grade.Objective/Comments</i>
12-1a Skip	Building Three Dimensional Figures	
12-1 Skip	Drawing Three-Dimensional Figures	
12-1b Teach	Problem Solving Strategy Make a Model	8.7.12 Basic ISAT-type Extended Response
12-2 Teach	Volume of a Rectangular Prism	9.7.02 Basic 7.7.04 Basic
12-2b Skip	Spreadsheet Investigation Similar Solids	
12-3 Skip	Volume of Cylinders	
12-4a Teach	Nets and Surface Area	9.7.11 Basic Supplement: needs more nets
12-4 Teach	Surface Area of Rectangular Prisms	9.7.02 Basic 7.7.04 Basic
12-4b Skip	Changes in Volume and Surface Area	
12-5 Skip	Surface Area of Cylinders	
12-6 Postpone	Measurement: Precision	7.7.01 Basic
Postpone	Estimate volume, perimeter, area, weight, mass, length and angles using referents.	7.7.03 Supplement