

		Student Book	Skill Builders
	Solving Problems and Number Theory		
1.5.8	Generate and solve addition, subtraction, multiplication, and division problems using whole numbers and decimals in practical situations.	14, 17, 48, 49	26-1, 45-1
2.0	PATTERNS, FUNCTIONS AND ALGEBRA		
	Students will use various algebraic methods to analyze, illustrate, extend, and create numerous representations (words, numbers, tables, and graphs) of patterns, functions, and algebraic relations as modeled in practical situations to solve problems, communicate, reason, and make connections with and beyond the field of mathematics.		
2.5.1	Identify, describe, and represent patterns and relationships in the number system, including triangular numbers and perfect squares.		44-1
	Variables and Unknowns		
2.5.2	Find possible solutions to an inequality involving a variable using whole numbers as a replacement set.		
	<ul style="list-style-type: none"> Solve equations with whole numbers using a variety of methods, including inverse operations, mental math, and guess and check. 		
	Number Sentences, Expressions, and Polynomials		
2.5.3	Complete number sentences with the appropriate words and symbols including \geq , \leq , and \neq .	32	2-1, 24-1
3.0	MEASUREMENT		
	Students will use appropriate tools and techniques of measurement to determine, estimate, record, and verify direct and indirect measurements to solve problems, communicate, reason, and make connections within and beyond the field of mathematics.		
	Comparison, Estimation, and Conversion		
3.5.1	Estimate and convert units of measure for weight and volume/capacity within the same measurement system (customary and metric).	61, 62	41-1, 42-1
	Precision in Measurements		
3.5.2	Measure volume and weight to a required degree of accuracy in the customary and metric systems.		
	Formulas		
3.5.3	Describe the difference between perimeter and area, including the difference in units of measure.	57 (T.G.), 58 (T.G.)	38-1, 38-2
3.5.4	Determine totals, differences, and change due for monetary amounts in practical situations.	64	43-1

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3.5.6	Determine equivalent periods of time, including relationships between and among seconds, minutes, hours, days, months, and years.		40-1
4.0	SPATIAL RELATIONSHIPS, GEOMETRY, AND LOGIC		
	Students will identify, represent, verify, and apply spatial relationships and geometric properties to solve problems, communicate, and make connections within and beyond the field of mathematics.		
	Two-Dimensional Shapes		
4.5.1	Identify, classify, compare, and draw triangles and quadrilaterals based on their properties.	53	34-1
	<ul style="list-style-type: none"> Identify and draw circles and parts of circles, describing the relationships between the various parts. 	54	35-1
	Congruence, Similarity, and Transformations		
4.5.2	Represent concepts of congruency, similarity, and/or symmetry using a variety of methods including dilation (enlargement/reduction) and transformational motions.		32-2
	Coordinate Geometry and Lines of Symmetry		44-2
4.5.3	Graph coordinates representing geometric shapes in the first quadrant.		
	Three-Dimensional Figures		
4.5.4	Predict and describe the effects of combining, dividing, and changing shapes into other shapes.		
	Lines, Angles, and Their Properties		
4.5.6	Identify, draw, label, and describe planes, parallel lines, intersecting lines, and perpendicular lines.	52	32-1
	Triangles		
4.5.7	Describe characteristics of right, acute, obtuse, scalene, equilateral, and isosceles triangles.		
	Logic		
4.5.9	Represent relationships using Venn Diagrams.		
5.0	DATA ANALYSIS		
	Students will collect, organize, display, interpret, and analyze data to determine statistical relationships and probability projections to solve problems, communicate, reason, and make connections within and beyond the field of mathematics.		
	Data Collection and Organization		
5.5.1	Pose questions that can be used to guide the collection of categorical and numerical data.	22	

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•	Organize and represent data using a variety of graphical representations including stem-and-leaf plots and histograms.	63, 64	50-1 to 50-5
Central Tendency and Data Distribution			
5.5.2	Compute range	22	
•	Model and compute the measures of central tendency for mean, median, and mode.	21, 22	46-1, 46-2
Interpretation of Data			
5.5.3	Interpret data and make predictions using stem-and-leaf plots and histograms.		
Permutations and Combinations			
5.5.4	Represent and solve problems involving combinations using a variety of methods.		
Experimental and Theoretical Probability			
5.5.5	Conduct simple probability experiments using concrete materials.		47-2
•	Represent the results of simple probability experiments as decimals to make predictions about future events.		
Statistical Inferences			
5.5.6	Select an appropriate type of graph to accurately represent the data and justify the selection.		
PROBLEM SOLVING			
Students will develop their ability to solve problems by engaging in developmentally appropriate opportunities where there is a need to use various approaches to investigate and understand mathematical concepts in order to:			
- Formulate their own problems			
- Find solutions to problems from everyday situations			
- Develop and apply strategies to solve a variety of problems			
- Integrate mathematical reasoning, communication and connections			
•	Generalize and apply previous experiences and strategies to new problem solving situations.	17, 33	45-1
•	Determine an efficient strategy, verify, interpret, and evaluate the results with respect to the original problem.	26	
•	Try more than one strategy when the first strategy proves to be unproductive.	26	
•	Interpret and solve a variety of mathematical problems by paraphrasing.	49 (T.G.)	
•	Identify necessary and extraneous information.		45-3
•	Check the reasonableness of a solution.		45-1

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<ul style="list-style-type: none"> Use technology, including calculators, to develop mathematical concepts. 		18	
MATHEMATICAL COMMUNICATION			
<p>Students will develop their ability to communicate mathematically by solving problems where there is a need to obtain information from the real world through reading, listening, and observing in order to:</p>			
- Translate information into mathematical language and symbols.			
- Process information mathematically			
- Present results in written, oral, and visual formats			
- Discuss and exchange ideas about mathematics as a part of learning.			
- Read a variety of fiction and nonfiction texts to learn about mathematics			
- Use mathematical notation to communicate and explain problems			
<ul style="list-style-type: none"> Use inquiry techniques to solve mathematical problems. 		throughout	
<ul style="list-style-type: none"> Use a variety of methods to represent and communicate mathematical ideas through oral, verbal, and written formats 		throughout	
<ul style="list-style-type: none"> Identify and translate key words and phrases that imply mathematical operations. 		13	
<ul style="list-style-type: none"> Use everyday language, both orally and in writing, to communicate strategies and solutions to mathematical problems. 		throughout	
MATHEMATICAL REASONING			
<p>Students will develop their ability to reason mathematically by solving problems where there is a need to investigate mathematical ideas and construct their own learning in all content areas in order to:</p>			
- Reinforce and extend their logical reasoning abilities			
- Reflect on, clarify, and justify their thinking			
- Ask questions to extend their thinking			
- Use patterns and relationships to analyze mathematical situations			
- Determine relevant, irrelevant, and/or sufficient information to solve mathematical problems			
<ul style="list-style-type: none"> Draw logical conclusions about mathematical problems 		26 (T.G.)	
<ul style="list-style-type: none"> Follow a logical argument and judge its validity 		26 (T.G.)	
<ul style="list-style-type: none"> Review and refine the assumptions and steps used to derive conclusions in mathematical arguments 		26 (T.G.)	
<ul style="list-style-type: none"> Justify and explain the solutions to problems using manipulatives and physical models 		throughout	

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MATHEMATICAL CONNECTIONS			
Students will develop the ability to make mathematical connections by solving problems where there is a need to view mathematics as an integrated whole in order to:			
- Link new concepts to prior knowledge			
- Identify relationships between content strands			
- Integrate mathematics with other disciplines			
- Allow the flexibility to approach problems in a variety of ways within and beyond the field of mathematics			
•	Use mathematical ideas from one area of mathematics to explain an idea from another area of mathematics	39	
•	Use physical models to explain the relationship between concepts and procedures	throughout	
•	Apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as rhythm in music and motion in science	3	
•	Identify, explain, and use mathematics in everyday life.	14, 18, 21	