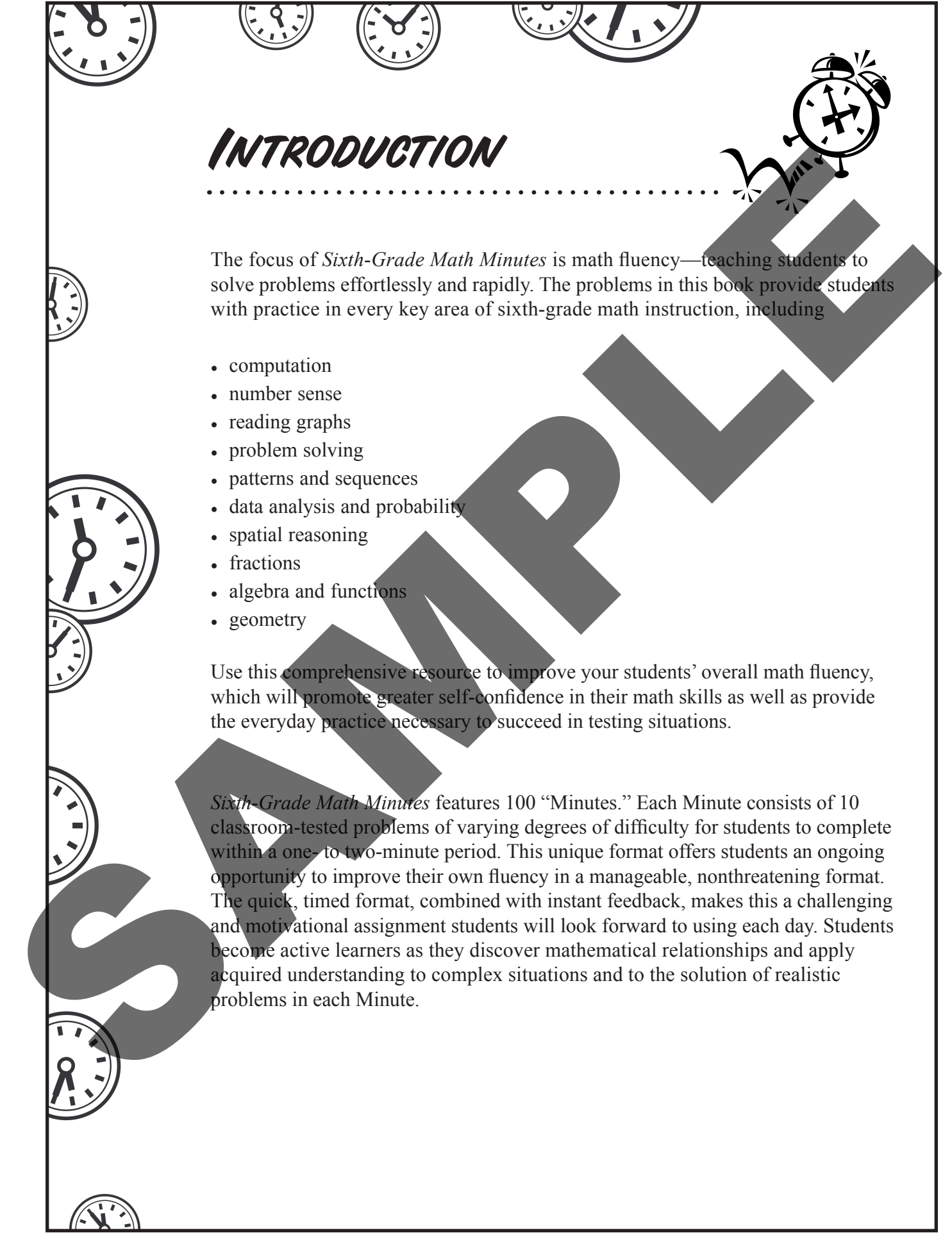


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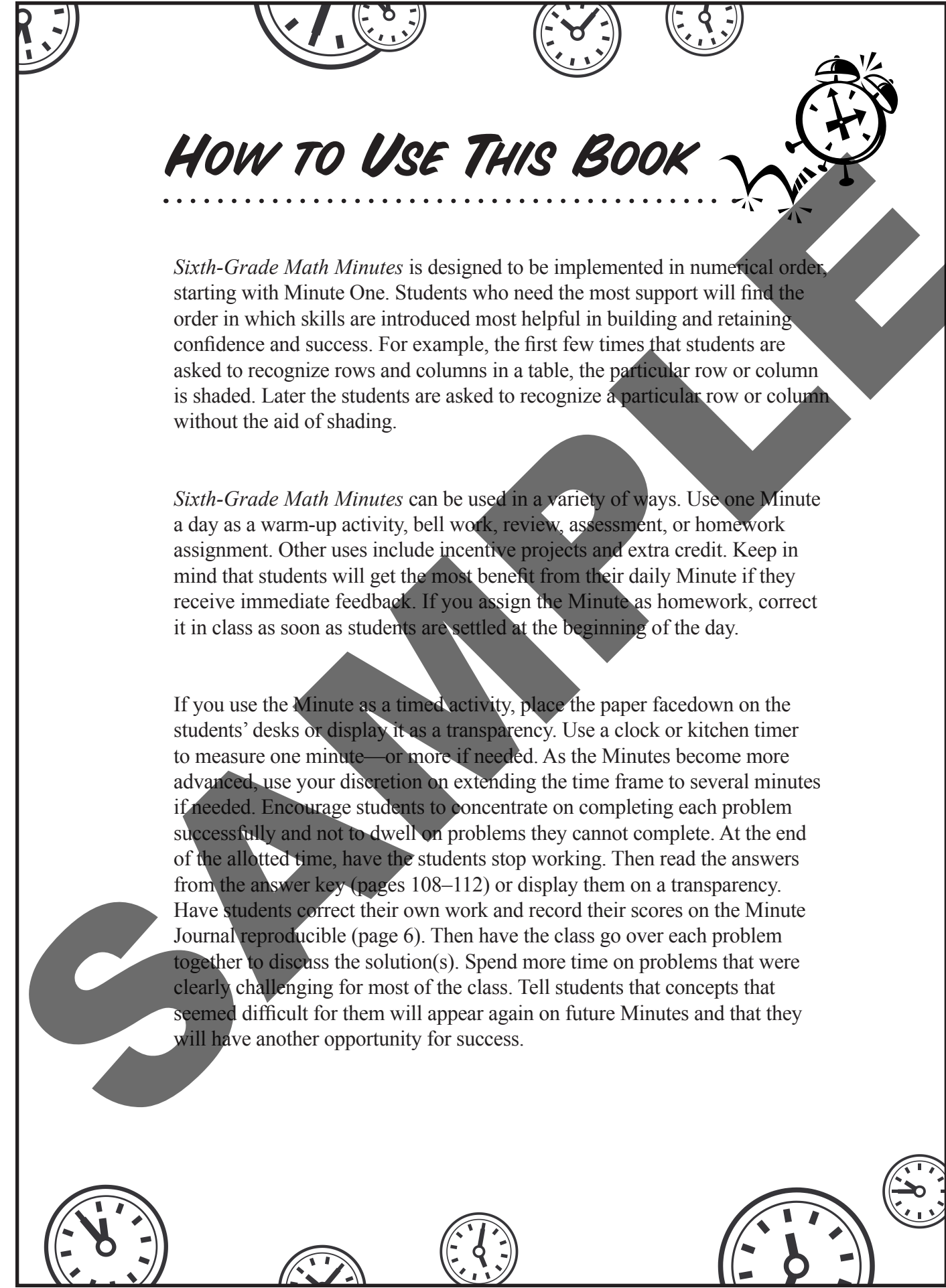
INTRODUCTION

The focus of *Sixth-Grade Math Minutes* is math fluency—teaching students to solve problems effortlessly and rapidly. The problems in this book provide students with practice in every key area of sixth-grade math instruction, including

- computation
- number sense
- reading graphs
- problem solving
- patterns and sequences
- data analysis and probability
- spatial reasoning
- fractions
- algebra and functions
- geometry

Use this comprehensive resource to improve your students' overall math fluency, which will promote greater self-confidence in their math skills as well as provide the everyday practice necessary to succeed in testing situations.

Sixth-Grade Math Minutes features 100 “Minutes.” Each Minute consists of 10 classroom-tested problems of varying degrees of difficulty for students to complete within a one- to two-minute period. This unique format offers students an ongoing opportunity to improve their own fluency in a manageable, nonthreatening format. The quick, timed format, combined with instant feedback, makes this a challenging and motivational assignment students will look forward to using each day. Students become active learners as they discover mathematical relationships and apply acquired understanding to complex situations and to the solution of realistic problems in each Minute.

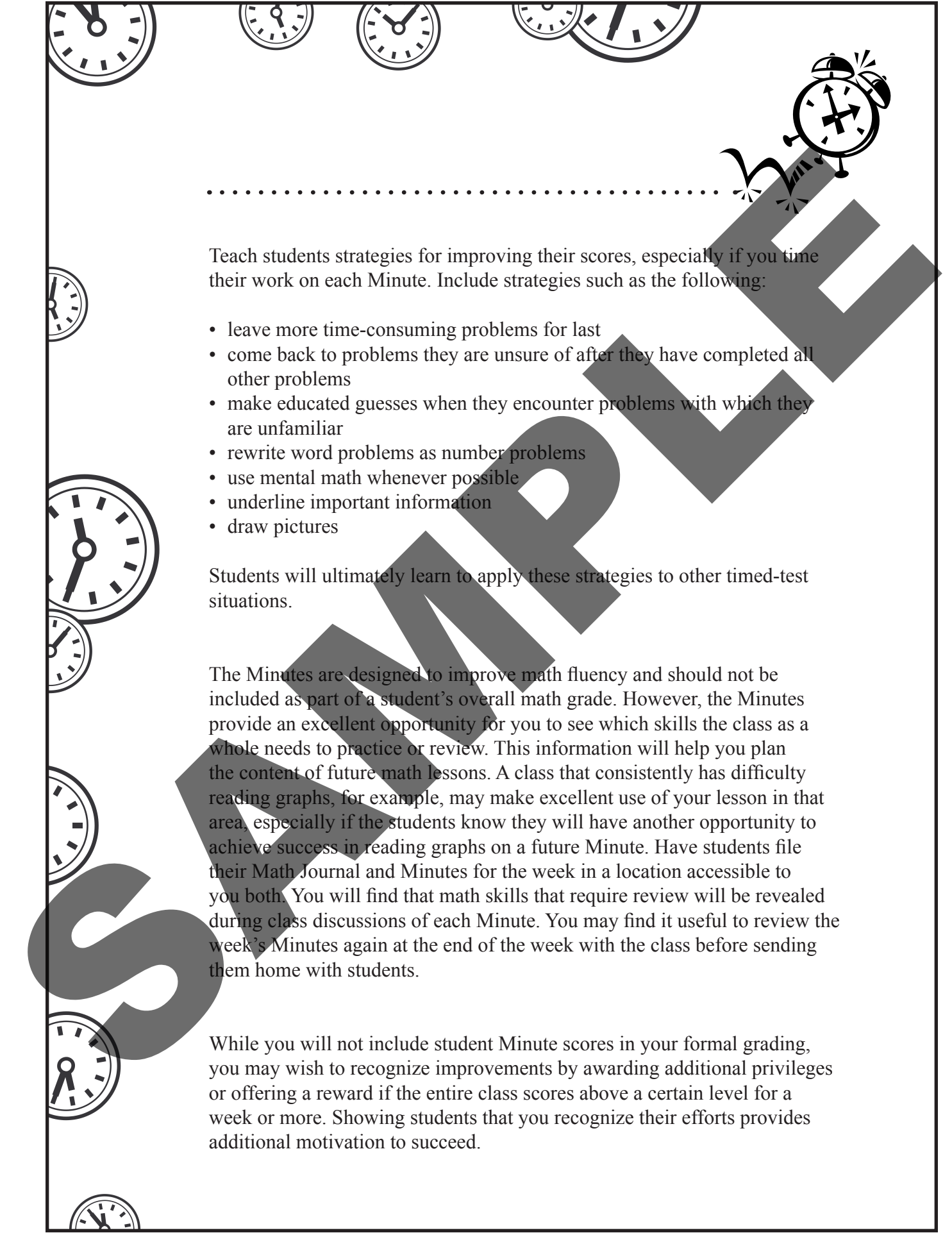


HOW TO USE THIS BOOK

Sixth-Grade Math Minutes is designed to be implemented in numerical order, starting with Minute One. Students who need the most support will find the order in which skills are introduced most helpful in building and retaining confidence and success. For example, the first few times that students are asked to recognize rows and columns in a table, the particular row or column is shaded. Later the students are asked to recognize a particular row or column without the aid of shading.

Sixth-Grade Math Minutes can be used in a variety of ways. Use one Minute a day as a warm-up activity, bell work, review, assessment, or homework assignment. Other uses include incentive projects and extra credit. Keep in mind that students will get the most benefit from their daily Minute if they receive immediate feedback. If you assign the Minute as homework, correct it in class as soon as students are settled at the beginning of the day.

If you use the Minute as a timed activity, place the paper facedown on the students' desks or display it as a transparency. Use a clock or kitchen timer to measure one minute—or more if needed. As the Minutes become more advanced, use your discretion on extending the time frame to several minutes if needed. Encourage students to concentrate on completing each problem successfully and not to dwell on problems they cannot complete. At the end of the allotted time, have the students stop working. Then read the answers from the answer key (pages 108–112) or display them on a transparency. Have students correct their own work and record their scores on the Minute Journal reproducible (page 6). Then have the class go over each problem together to discuss the solution(s). Spend more time on problems that were clearly challenging for most of the class. Tell students that concepts that seemed difficult for them will appear again on future Minutes and that they will have another opportunity for success.



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Teach students strategies for improving their scores, especially if you time their work on each Minute. Include strategies such as the following:

- leave more time-consuming problems for last
- come back to problems they are unsure of after they have completed all other problems
- make educated guesses when they encounter problems with which they are unfamiliar
- rewrite word problems as number problems
- use mental math whenever possible
- underline important information
- draw pictures

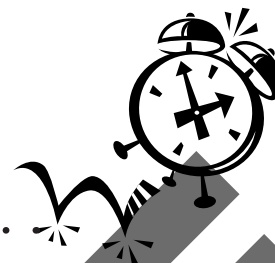
Students will ultimately learn to apply these strategies to other timed-test situations.

The Minutes are designed to improve math fluency and should not be included as part of a student's overall math grade. However, the Minutes provide an excellent opportunity for you to see which skills the class as a whole needs to practice or review. This information will help you plan the content of future math lessons. A class that consistently has difficulty reading graphs, for example, may make excellent use of your lesson in that area, especially if the students know they will have another opportunity to achieve success in reading graphs on a future Minute. Have students file their Math Journal and Minutes for the week in a location accessible to you both. You will find that math skills that require review will be revealed during class discussions of each Minute. You may find it useful to review the week's Minutes again at the end of the week with the class before sending them home with students.

While you will not include student Minute scores in your formal grading, you may wish to recognize improvements by awarding additional privileges or offering a reward if the entire class scores above a certain level for a week or more. Showing students that you recognize their efforts provides additional motivation to succeed.



MINUTE JOURNAL



NAME _____

MINUTE	DATE	SCORE	MINUTE	DATE	SCORE	MINUTE	DATE	SCORE	MINUTE	DATE	SCORE
1			26			51			76		
2			27			52			77		
3			28			53			78		
4			29			54			79		
5			30			55			80		
6			31			56			81		
7			32			57			82		
8			33			58			83		
9			34			59			84		
10			35			60			85		
11			36			61			86		
12			37			62			87		
13			38			63			88		
14			39			64			89		
15			40			65			90		
16			41			66			91		
17			42			67			92		
18			43			68			93		
19			44			69			94		
20			45			70			95		
21			46			71			96		
22			47			72			97		
23			48			73			98		
24			49			74			99		
25			50			75			100		

SCOPE AND SEQUENCE



MINUTE IN WHICH SKILL FIRST APPEARS		MINUTE IN WHICH SKILL FIRST APPEARS	
SKILL		SKILL	
Place Value	1	Venn Diagrams	20
Fractions, Decimals, and Percents (ordering, comparing, recognizing)	1	Symmetry	22
Fractions (naming, identifying, comparing, reducing)	1	Working with Rows and Columns	22
Graphs (bar, line, circle, frequency charts)	1	Fractions (mixed and improper)	26
Patterns/Sequences	1	Geometry (circles/radii/diameters/hypotenuse)	27
Computation (add, subtract, multiply, divide)	1	Estimation	41
Area of Shapes	1	Multiples	42
Simple Probability and Odds	2	Bar Notation	44
Simple Geometry and Shape Recognition	2	Factors and Factor Trees	47
Perimeter	2	Geometry (angles and degrees in a triangle)	51
Time (clock, calendar)	3	Squares, Square Roots, and Exponents	51
Spatial Reasoning	3	Simple Permutations and Combinations	52
Story Problems and Reasoning	3	Number Lines	54
Decimals (expressing, addition, subtraction, multiplication, division)	4	Primes	55
Number Sense/Reasonable Answers	5	Solving Two-Step Equations	57
Geometry (congruent/similar/shapes/vertices/sides/degrees, vocabulary)	5	Analogies	57
Simple Algebraic Expressions/Substitutions	7	Coordinate Graphs (quadrants, graphing, points, lines, distance)	63
Money	8	Integers (add, subtract, multiply, divide)	63
Rounding	9	Absolute Value	66
Simple Functions	10	Midpoints	70
Solving Simple Equations	11	Solutions to Inequalities	78
Volume (boxes)	11	Greatest Common Factor	83
Ratios	12	Mean	85
Changing Fractions, Decimals, and Percents	14		
Order of Operations	17		
Fractions (add, subtract, multiply, divide)	19		

NAME: _____



MINUTE 1

1. Circle the number that has a 4 in the tens place. 324 24 4,321 49

2. Circle the set of lines that are parallel.

3. Write these decimals in order from least to greatest. 0.403 0.034 0.340

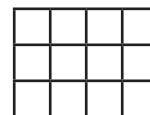
4. Write the fraction that represents the shaded boxes.



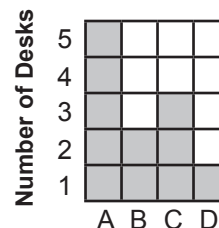
5. $5 + \square = 12$

6. Complete the pattern: 1, 5, 9, 13, _____.

7. What is the area (number of squares) in the rectangle to the right?



8. According to the chart, how many desks are in column A?



9. $9 \times 4 =$

$9 \times 7 =$

$9 \times 9 =$

10. $7 \overline{)28} =$

$7 \overline{)42} =$

$7 \overline{)63} =$

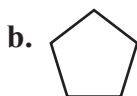
NAME: _____



MINUTE 2

1. If you flip a coin 10 times, how many times will it land on heads?
 a. 10 b. 5 c. 2 d. impossible to tell

2. Which shape is a pentagon?



3. Write the fraction for each:

Two-fifths = _____

Three-fourths = _____

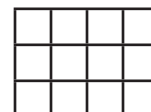
4. Write the fraction that represents the shaded boxes. _____



5. $3 \times 4 + 4 =$ _____

6. Complete the pattern: 4, 8, 12, 16, _____.

7. What is the perimeter (distance around) of the rectangle to the right? _____.

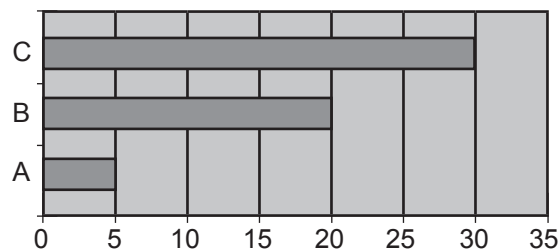


8. According to the graph to the right:

A = _____

B = _____

C = _____



9. $8 \cdot 6 =$ $8 \cdot 4 =$ $8 \cdot 7 =$

10. $\frac{24}{6} =$ $\frac{36}{6} =$ $\frac{18}{6} =$