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INTRODUCTION AND RESEARCH

The Need for Practice

In order to be successful in today’s mathematics classroom, students must deeply understand both concepts and procedures so that they can discuss and demonstrate their understanding. Demonstrating understanding is a process that must be continually practiced in order for students to be successful. According to Marzano (2010, 83), “practice has always been, and will always be, a necessary ingredient to learning procedural knowledge at a level at which students execute it independently.” Practice is especially important to help students apply their concrete, conceptual understanding to a particular procedural skill.

Understanding Assessment

In addition to providing opportunities for frequent practice, teachers must be able to assess students’ understanding of mathematical procedures, terms, concepts, and reasoning (Kilpatrick, Swafford, and Findell 2001). This is important so that teachers can adequately address students’ misconceptions, build on their current understanding, and challenge them appropriately.

Assessment is a long-term process that often involves careful analysis of student responses from a lesson discussion, project, practice sheet, or test. When analyzing the data, it is important for teachers to reflect on how their teaching practices may have influenced students’ responses and to identify those areas where additional instruction may be required. In short, the data gathered from assessments should be used to inform instruction: slow down, speed up, or reteach. This type of assessment is called *formative assessment* and is used to provide a seamless connection between instruction and assessment (McIntosh 1997).

HOW TO USE THIS BOOK

180 Days of Math for Fourth Grade offers teachers and parents a full page of mathematics practice activities for each day of the school year.

Easy to Use and Standards-Based

These activities reinforce grade-level skills across a variety of mathematical concepts. The questions are provided as a full practice page, making them easy to prepare and implement as part of a classroom morning routine, at the beginning of each mathematics lesson, or as homework.

Every fourth-grade practice page provides 10 questions, each tied to a specific mathematical concept. Students are provided the opportunity for regular practice in each mathematical concept, allowing them to build confidence through these quick, standards-based activities.

Question	Mathematics Concept	NCTM Standard
1	Addition or Subtraction	Understands meanings of operations such as addition and subtraction and how they relate to one another
2	Multiplication or Fractions, Decimals, Percents	Understands various meanings of multiplication; Recognizes and generates equivalent forms of fractions, decimals, and percents
3	Division	Understands various meanings of division; Understands meanings of operations and how they relate to one another; Computes fluently and makes reasonable estimates
4		
5	Place Value or Number Sense	Understands representations of numbers, relationships among numbers, and number systems; Understands place-value structure of the base-ten number system
6	Algebra and Algebraic Thinking	Understands patterns, relations, and functions; Represents and analyzes patterns and functions, using words, tables, and graphs
7	Measurement	Applies appropriate techniques and formulas to determine measurements; Understands measurable attributes of objects and the units, systems, and processes of measurement
8		
9	Geometry or Data Analysis	Uses visualization and spatial reasoning to solve problems; Analyzes properties of two- and three-dimensional geometric shapes
10	Word/Logic Problem or Mathematical Reasoning	Solves problems that arise in mathematics and in other contexts

Standards are listed with the permission of the National Council of Teachers of Mathematics (NCTM). NCTM does not endorse the content or validity of these alignments.

HOW TO USE THIS BOOK *(cont.)*

Using the Practice Pages

As outlined on page 4, every question is aligned to a mathematics concept and standard.

Practice pages provide instruction and assessment opportunities for each day of the school year.

Each question ties student practice to a specific mathematics concept.

DAY 2

NAME: _____

DIRECTIONS Solve each problem.

SCORE

1. (Y) (N) 1. $\begin{array}{r} 19 \\ - 8 \\ \hline \end{array}$

2. (Y) (N) 2. $2 \times 12 = \underline{\quad}$

3. (Y) (N) 3. $16 \div 8 = \underline{\quad}$

4. (Y) (N) 4. Divide twenty into five equal groups.

5. (Y) (N) 5. What is the value of the 4 in 45?

6. (Y) (N) 6. $5 + \square = 14$

7. (Y) (N) 7. Calculate the perimeter of a square with 3-cm sides.

8. (Y) (N) 8. What is the temperature?

9. (Y) (N) 9. What does the arrow show?

10. (Y) (N) 10. Lou's mass is 5 kg less than Don, who has a mass of 34 kg. What is Lou's mass?

____ / 10
Total

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Using the Scoring Guide

Use the scoring guide along the side of each practice page to check answers and see at a glance which skills may need more reinforcement.

Fill in the appropriate circle for each problem to indicate correct (Y) or incorrect (N) responses. You might wish to indicate only incorrect responses to focus on those skills. (For example, if students consistently miss numbers 2 and 6, they may need additional help with those concepts as outlined in the table on page 4.) Use the answer key at the back of the book to score the problems, or you may call out answers to have students self-score or peer-score their work.

NAME: _____

DIRECTIONS Solve each problem.

SCORE

1. (Y) (N)

1. $24 - 6 = \underline{\hspace{2cm}}$

6. $\square \times 8 = 32$

2. (Y) (N)

7. Is the area of the cover of a book measured in cm^2 or m^2 ?

3. (Y) (N)

2.
$$\begin{array}{r} 9 \\ \times 7 \\ \hline \end{array}$$

8. Would you use a thermometer or a ruler to measure temperature?

4. (Y) (N)

3. $2 \overline{)10}$

9. Complete around the axis of symmetry.

5. (Y) (N)

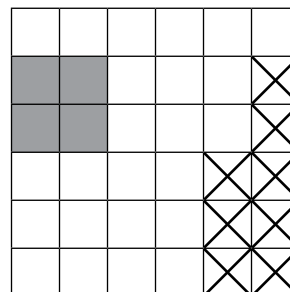


6. (Y) (N)

4. $87 \div 10 = \underline{\hspace{2cm}}$

10. If the shaded area is equal to one, what is the area of the crossed region?

7. (Y) (N)



8. (Y) (N)

5. Write the largest 4-digit numeral using 1, 0, 7, and 9.

9. (Y) (N)

10. (Y) (N)

___ / 10

Total

NAME: _____

DIRECTIONS

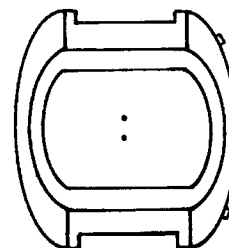
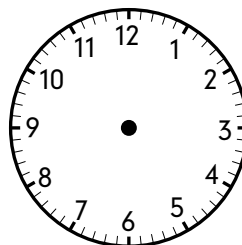
Solve each problem.

1.
$$\begin{array}{r} 47 \\ + 23 \\ \hline \end{array}$$

6. $7 \times \square$ is $\frac{1}{4}$ of 56

2. Write 0.84 as a percentage.

7. Complete the clocks for the time 25 to 2.

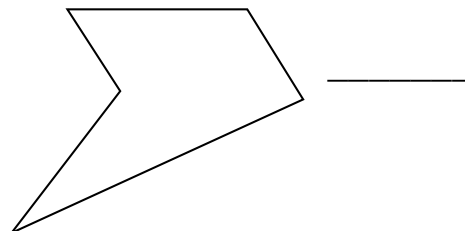


3. $15 \overline{)45}$

8. 3 quarts = _____ pints

4. $47 \div 10 =$ _____

9. How many acute angles are inside this polygon?



5. Write 1,846 in words.

10. Dan gets \$5.00 each week for allowance. He saves $\frac{1}{2}$ of the money and spends the rest. How much does he spend in 3 weeks?

SCORE

1. (Y) (N)

2. (Y) (N)

3. (Y) (N)

4. (Y) (N)

5. (Y) (N)

6. (Y) (N)

7. (Y) (N)

8. (Y) (N)

9. (Y) (N)

10. (Y) (N)

___ / 10

Total