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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 Kindergarten* offers teachers and parents a full page of daily 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 kindergarten practice page provides 6 questions, each tied to a specific mathematical concept. Students are given the opportunity for regular practice in each mathematical concept, allowing them to build confidence through these quick standards-based activities.

Kindergarten students may need additional support in order to complete the practice pages. Depending on students' reading skills and readiness levels, teachers, classroom volunteers, or parents may need to read the questions aloud to students. Have students write the answers on their own, or if needed, have them say their answers aloud and assist them with recording the answers.

Question	Mathematics Concept	NCTM Standards
1	<b>1-to-1 Correspondence, Number Identification, or Comparing Numbers</b>	Understands numbers, ways of representing numbers, relationships among numbers, and number systems; Counts with understanding and recognizes “how many” in sets of objects; Develops a sense of whole numbers and represents and uses them in flexible ways
2	<b>Addition or Subtraction</b>	Understands meanings of operations and how they relate to one another; Computes fluently and makes reasonable estimates; Understands various meanings of addition and subtraction of whole numbers
3	<b>Patterns</b>	Understands patterns, relations, and functions; Recognizes, describes, and extends patterns
4	<b>Measurement</b>	Understands measurable attributes of objects and the units, systems, and processes of measurement; Recognizes the attributes of length, volume, weight, area, and time
5	<b>Geometry</b>	Analyzes characteristics and properties of two-dimensional and three-dimensional geometric shapes and develops mathematical arguments about geometric relationships; Recognizes, names, builds, draws, compares, and sorts two- and three-dimensional shapes
6	<b>Story Problem or Mathematical Reasoning</b>	Builds new mathematical knowledge through problem solving; 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. ☺☺ **1. Color 2 circles.**

2. ☺☺ **2. Count how many hearts in all.**

3. ☺☺ **3. Circle what will come next.**

4. ☺☺ **4. Circle the shorter animal.**

5. ☺☺ **5. Circle the solid that looks like the object.**

6. ☺☺ **6. Three birds were sitting on a tree. One more bird came. How many birds are on the tree now?**

\_\_\_\_ / 6  
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 (☺) or incorrect (☹) 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. 😊 😐

1. Color 4 apples.



2. 😊 😐

2. Count how many umbrellas in all.



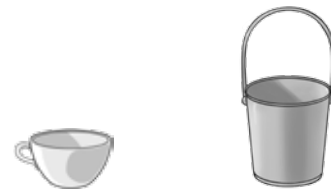
3. 😊 😐

3. Circle what will come next.



4. 😊 😐

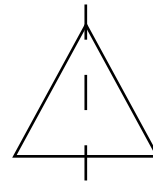
4. Circle the container that holds more.



5. 😊 😐

5. Does the shape have symmetry? Circle the answer.

yes      no



6. 😊 😐

6. Show 5 dots. Add or cross out dots.



\_\_\_\_ / 6  
Total

NAME: \_\_\_\_\_

**DIRECTIONS** Solve each problem.

SCORE

1. 😊 😐

**1.** Put these numbers in order.

29 27 28 25 26

\_\_\_\_\_

\_\_\_\_\_

2. 😊 😐

**2.** Subtract.

$5 - 4 =$  \_\_\_\_\_

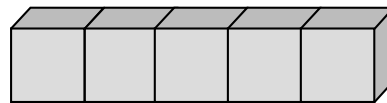
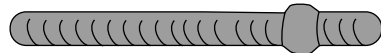
$5 - 3 =$  \_\_\_\_\_

$5 - 2 =$  \_\_\_\_\_

3. 😊 😐

**4.** How long is the worm?

\_\_\_\_\_ cubes



4. 😊 😐

**5.** Draw a circle to the left of a diamond.

5. 😊 😐

**3.** Circle what will come next.



**6.** Nia has homework every school day except Friday. How many days does Nia have homework?

\_\_\_\_\_

\_\_\_\_ / 6  
Total