1.6 Math Boxes

**Objectives** To introduce *My Reference Book*; and to introduce the Math Boxes routine.

1. **Teaching the Lesson**

   **Key Concepts and Skills**
   - Explore money equivalencies.
     [Measurement and Reference Frames Goal 4]
   - Explore analog and digital time pieces.
     [Measurement and Reference Frames Goal 6]

   **Key Activities**
   Children are introduced to *My Reference Book*. They are introduced to the Math Boxes routine and complete the first Math Box page.

   **Key Vocabulary**
   *My Reference Book* ◆ Table of Contents ◆ Math Boxes

   **Materials**
   Math Journal 1, p. 7
   *My Reference Book* slate

2. **Ongoing Learning & Practice**

   **Playing Penny Plate**
   Math Masters, p. 468
   *My Reference Book*, pp. 146 and 147 per partnership: plate, cup, or other container; 20 tool-kit pennies
   Children practice naming parts of a whole.

   **Ongoing Assessment:**
   - **Informing Instruction** See page 44.
   - **Recognizing Student Achievement**
     Use *Math Masters*, page 468.
     [Operations and Computation Goal 1]

3. **Differentiation Options**

   **READINESS**
   Playing Two-Fisted Penny Addition
   10 or more pennies
   Children practice naming parts of a whole using concrete models.

   **EXTRA PRACTICE**
   Minute Math+.
   *Minute Math*+, pp. 9, 23, 32, and 33
   Children solve problems with complements of 10 and 2-, 3-, and 4-digit numbers.

**Advance Preparation**
For *Penny Plate* in Part 2, obtain paper plates or other open-top, opaque containers. During the game, children will turn the containers upside down and arrange as many as 20 pennies on the containers’ bottoms. Make sure the bottom of each container is wide and sturdy enough to hold the pennies.

*Teacher’s Reference Manual, Grades 1–3* pp. 11, 12, 16

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Getting Started

**Math Boxes**

**LESSON 1**

**Date Time**

1. Fill in the missing numbers.
   a. 36, ____, 38, ____, 39
   b. ____, 12, 13, ____, 14
   c. 89, ____, 91, ____, 92
   d. ____, 147, ____, 149, 150

3. How likely is it that our class will go on a field trip today?
   Circle.
   - certain
   - likely
   - unlikely
   - impossible

5. Fill in the circle next to the name of the shape.
   - triangle
   - rectangle
   - pentagon

6. Write two even and two odd numbers.
   - even
   - even
   - odd
   - odd

**Math Journal 1, p. 7**

**Mental Math and Reflexes**

On slates,
- Write all the 1-digit numbers. How many are there? 10
- Write two 2-digit numbers. Circle the larger one.
- Write two 3-digit numbers. Circle the digit in the ones place and put an X on the digit in the hundreds place.

**Math Message**

Spend a few minutes looking through your **My Reference Book**. Be ready to share something you found interesting. Think about how this book can be helpful to you.

**Math Message Follow-Up**

(***My Reference Book***)

Have children briefly share some interesting things that they found. Discuss ways in which **My Reference Book** can be helpful.

With the class, look up the Table of Money Equivalencies in **My Reference Book**. Ask children simple questions regarding money equivalences. For example, ask: How many pennies in a dime? 10 How many nickels in a dime? 2 How many nickels in a quarter? 5

Discuss the sections of **My Reference Book**.

The **Table of Contents** may be used to find information about a particular topic. The Table of Contents also gives the page number of the first page of a topic.

Use the Table of Contents to look up information on clocks on pages 78 and 79. Discuss the information in **My Reference Book** regarding clocks. Be sure to allow the children enough time to explore the clock section.

Explain to the children that in today’s lesson they will see how **My Reference Book** can be helpful to them as they work in their **Math Journals**.

**Introducing Math Boxes**

(***Math Journal 1, p. 7***)

Ask children to name activities that people practice. Sample answers: Dancing, singing, playing a musical instrument, speaking a foreign language, playing basketball and other sports, and so on...
Ask children: *What would happen if people never practiced? Is anyone familiar with the expression, “Practice makes perfect?” What does this mean?*

Explain that practice is necessary in mathematics, too. In *Everyday Mathematics*, one of the ways to practice is by doing a page of problems called **Math Boxes**.

Have children turn to journal page 7. Call children’s attention to the *My Reference Book* icon in the Math Boxes. Discuss how this icon tells them which page to go to in *My Reference Book* if they need more information to complete the Math Boxes.

**NOTE** For practice estimating collections of objects, see [www.everydaymathonline.com](http://www.everydaymathonline.com).

## Completing a Math Boxes Page
(Math Journal 1, p. 7)

**Mixed Practice** Go over each problem so children understand what to do. Children complete the journal page independently or with a partner. When children have finished, briefly discuss the answers.

## Ongoing Learning & Practice

### Playing Penny Plate
(Math Masters, p. 468; *My Reference Book*, pp. 146 and 147)

**Algebraic Thinking** Have children read the rules for *Penny Plate* on pages 146 and 147 in *My Reference Book* and play the game in partnerships. Playing this game frequently will help develop children’s automaticity with sum-equals-ten facts.

### Ongoing Assessment: Informing Instruction

Watch for children who are having difficulty determining the number of pennies. Suggest that they draw circles to represent all of the pennies. Then suggest that the children use one of the strategies below to figure out how many pennies are under the plate:

- Cross off one circle for each penny on top of the plate. Count the uncrossed circles to find the number of pennies under the plate.
- Use a second set of pennies as markers. Cover one circle for each penny on top of the plate. Count the uncovered circles to find the number of pennies under the plate.

Children name the two parts of 10 shown here: 6 and 4.
Ongoing Assessment: Recognizing Student Achievement

Use *Math Masters, page 468* to assess children’s ability to solve sum-equals-ten facts. Children are making adequate progress if they can name the number of pennies under the plate without actually counting the pennies. Some children may be able to write a number model that represents each round.

(Operations and Computation Goal 1)

3 Differentiation Options

**READINESS**

▶ Playing *Two-Fisted Penny Addition*

To explore finding sums to ten using a concrete model, have children play *Two-Fisted Penny Addition*. Children count out 10 pennies and split them between their two hands. Help children identify their left and right hands.

Call on several children to share amounts. *For example:*

▶ My left hand has 1 penny and my right hand has 9 pennies.
▶ My left hand has 3 pennies and my right hand has 7 pennies.

The various splits can be recorded on the board.

Repeat with other numbers of pennies. Partners can continue to practice using different total numbers of pennies: 9, 12, 20, and so on.

**EXTRA PRACTICE**

▶ Minute Math+

To offer children more experience with complements of 10, as well as with 2-, 3-, and 4-digit numbers, see the following pages in *Minute Math+:* pp. 9, 23, 32, and 33.

2. Player 2:
   • Counts the pennies on top of the plate.
   • Figures out how many pennies are hidden under the plate.

   *Tape 2 pennies. There are 10 pennies in all. So there are 4 pennies under the plate.

3. If the number is correct, Player 2 gets a point.

4. Players trade roles and repeat Steps 1 and 2.

5. Each player keeps a tally of their points.

The first player to get 5 points is the winner.

Another Way to Play

Use a different number of pennies.
**Penny Plate Record Sheet**

**Example:**
Start with 10 pennies.
There are 6 pennies on top.
There are 4 pennies inside.

**Round 1**
Start with ____ pennies.
There are ____ pennies on top.
There are ____ pennies inside.

**Round 2**
Start with ____ pennies.
There are ____ pennies on top.
There are ____ pennies inside.

**Round 3**
Start with ____ pennies.
There are ____ pennies on top.
There are ____ pennies inside.