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Focused Mathematics Intervention— Level 1

This sample includes the following:

Level 1

Focused Mathematics Intervention

Teacher's Guide

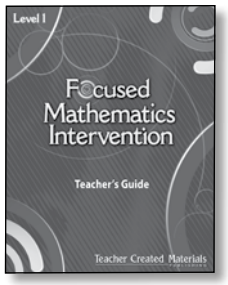
Teacher Created Materials
PUBLISHING

Table of Contents

Kit Components

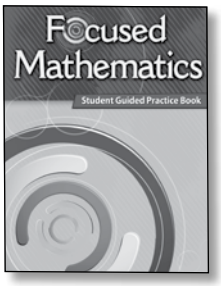
Teacher's Guide

30 easy-to-use, standards-based lesson plans



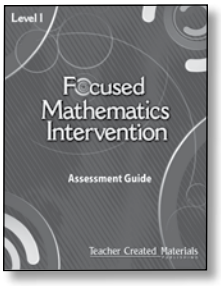
Student Guided Practice Book

Full-color student activities



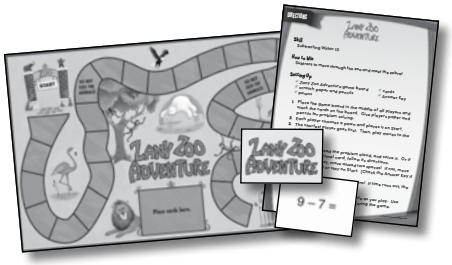
Assessment Guide

Includes a pretest, posttest, performance tasks with assessments, and the answer key for the *Student Guided Practice Book*



3 Math Fluency Game Sets

Include a game board, directions, an answer key, and game pieces



3 Digital Math Fluency Games

Focus on mathematical skills and strategies and are on the Digital Resources USB Device

Digital Resources

- PDFs of all student materials, game sets, activity sheets, assessments, etc.
- PDFs of teacher resources
- Digital Math Fluency Games
- Electronic versions of the Pretest, Posttest, Performance Tasks, and reporting tools

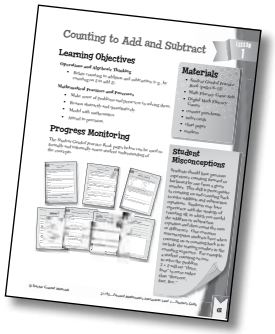
Refocus Mini Lesson PPT

Provides as PowerPoint® and PDF files

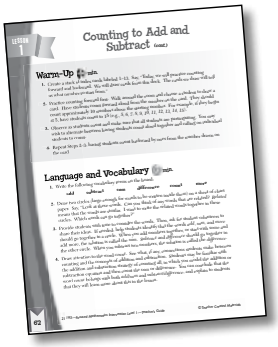
Teaching a Lesson

Teacher's Guide

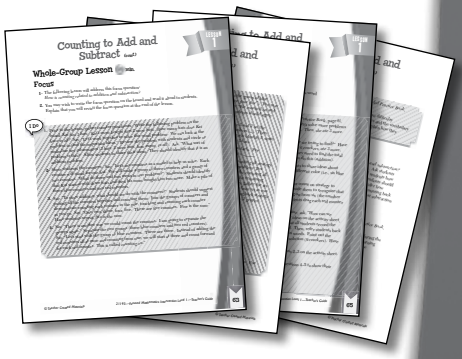
Each 8-page lesson is organized in a consistent format for ease of use. Teachers may choose to complete some or all of the lesson activities to best meet the needs of their students. Lesson materials can be utilized flexibly in a variety of settings. For example, modeling with a small group, using printed materials with a document camera, or using PDF materials on a digital platform, such as an interactive whiteboard. Each lesson includes:



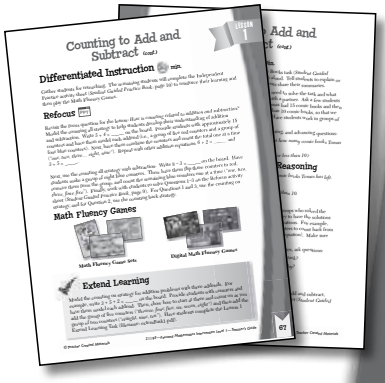
- an overview page with key information for planning
- key mathematics content standards covered
- key mathematical practices and processes addressed
- an overview providing teacher background or student misconceptions



- a Warm-Up activity to build students' recall of important mathematical concepts
- a whole-class Language and Vocabulary activity
- time markers to indicate the approximate time for instruction



- a whole-class section focusing on the key concept/skill being taught
- use of the gradual release of responsibility model in the Whole-Group lesson section



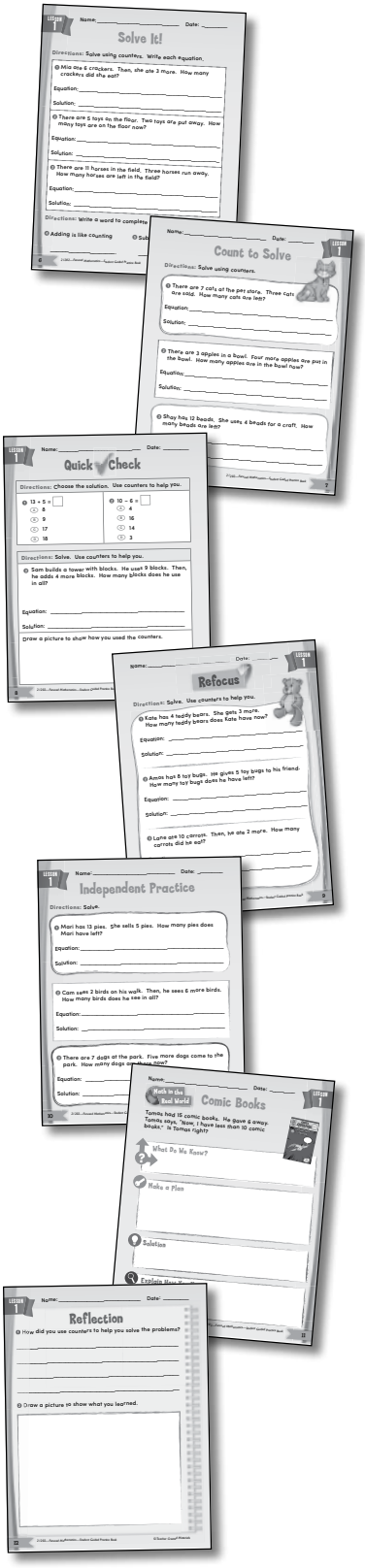
- differentiation strategies to support and extend learning with the Refocus lesson and Extend Learning activity
- math fluency games that motivate students to develop and reinforce mastery of basic skills
- a Math in the Real World concept task activity

Teaching a Lesson *(cont.)*

Student Guided Practice Book

Each lesson in the *Teacher's Guide* has seven corresponding student pages in the *Student Guided Practice Book:*

- a We Do activity to support the gradual release of responsibility model
- a You Do activity to facilitate independent practice
- a Quick Check to easily monitor students' progress
- a Refocus activity for students who need more instruction
- an Independent Practice page to reinforce mathematical content taught in the lesson
- a Math in the Real World concept task for students to apply the math concept in a real-life scenario
- a Reflection page for students to share their mathematical understanding



LESSON 7

Addition Equations with an Unknown

Learning Objectives

Operations and Algebraic Thinking

- Determine the unknown whole number in an addition equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in these equations: 8 + ? = 11, 6 + 6 = ?*

Mathematical Practices and Processes

- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Attend to precision.
- Look for and make use of structure.

Materials

- *Student Guided Practice Book* (pages 48–54)
- Math Fluency Game Sets
- Digital Math Fluency Games
- counter punchouts
- chart paper
- markers
- index cards
- tape
- sentence strips

Progress Monitoring

The *Student Guided Practice Book* pages below can be used to formally and informally assess student understanding of the concepts.

Teacher Background

Students will utilize a deeper understanding of addition as they solve addition equations with an unknown in different positions. The use of the part-part-whole model in this lesson will provide a helpful visual reference to students. Eventually, students should also begin to recognize fact families as they continue to investigate the relationships among facts.

Addition Equations with an Unknown *(cont.)*

Warm-Up 10 min.

1. Write the following in large print at the top of a sheet of chart paper: *We can make 10!*
2. Say, "Ten is an important number. Today we are going to make 10 in different ways."
3. Provide each student with two or three index cards, depending on class size. (Smaller groups may have time for three index cards; for larger groups, two may be preferred.) Say, "I want you to think of two numbers that you can combine, or add, to make 10. Then, you will show those numbers on a card. You can use numbers, words, or a drawing." Model this for students using the numbers 3 and 7. Show them examples:

3 + 7 = 10	**three and seven equal ten**	●●●	+	●●●● ●●●	=	●●●●● ●●●●●

Remind students that they can use any representation they would like, and that they should choose different numbers for each index card. If students struggle to come up with numbers, you can assist them by supplying one number and having them generate the other. (For example, tell the student 4; they generate 6.)

4. Provide time for students to create representations. Then, assist them in taping the index cards on the chart paper. Conclude by reviewing a variety of student responses.

Language and Vocabulary 10 min.

1. Prior to the lesson, write the following words on the board:

add **sum** **subtract** **difference** **equal** **equation**

Then, write the following sentences on sentence strips or on chart paper.

- In the problem 5 – 2, the sum is 3.
- When you add, you join two amounts together.
- In the problem 6 + 2 = 8, the number 8 is an addend.

2. First, define each word to the class. Then, hold up a sentence strip. Say, "I am going to read a sentence. I want you to think about how the word is used in the sentence. If it is used correctly, I want you to give me a thumbs-up signal. If it is used incorrectly, I want you to give me a thumbs-down signal."
3. Read each sentence to the class. Observe students' understanding of the meaning and use of each word. If the word is used incorrectly, ask what word should replace the underlined word.

Addition Equations with an Unknown *(cont.)*

Whole-Group Lesson 40 min.

Focus

1. The following lesson will address this focus question:
   How can you solve addition equations?
2. You may wish to write the focus question on the board and read it aloud to students. Explain that you will revisit the focus question at the end of the lesson.

I Do

1. Say, "Today we are going to work together to solve equations." Write the following equation on the board: $5 + 3 = \square$. Explain to students that the box is empty because this is the number they are solving for.
2. Say, "To help us solve this problem, we can use a model." Draw a part-part-whole model on the board:

Whole	
Part	Part

   Say, "This is called a part-part-whole model. We can use this model to help us solve problems with addition. What number do we start with? How many are we adding to it?" Once students identify that they start with five and add, ask, "Where do you think these numbers belong in the model?" Lead students to understand that each addend is one part. When the parts are combined, that is the whole. Record each addend in one of the *Part* sections. Include dots to represent each part.
3. Ask, "How could we find the whole to complete the model?" Allow students to share ideas. Students should identify that they can combine the two numbers by counting on (e.g., counting on from five or counting on from three). Write *Count On* on the board.

Whole	
Part 5 	Part 3 

Addition Equations with an Unknown *(cont.)*

Whole-Group Lesson *(cont.)*

Language Support

New language learners may have difficulty remembering all of the number names as they count on. Provide students with a number line to assist them in counting.

I Do (cont.)

4. Work with students to solve for the missing whole by counting on. Practice counting on from five (*fiiive*, *six*, *seven*, *eight*) and also by counting on from three (*threee*, *four*, *five*, *six*, *seven*, *eight*). Show students how to use the dots to help you keep track of the numbers. Explain to students that when you add, you can count on from either addend.
5. Ask, "What is the whole, or the sum?" When students identify that the sum is 8, record it on the part-part-whole model and complete the equation ($5 + 3 = 8$).
6. Say, "Let's try another equation together." Write the equation $2 + \square = 9$ on the board. Ask, "How is this equation the same as the first? How is it different?" Students should recognize that this equation also has a box to show the missing number, but in this equation they need to solve for an addend, not the sum.
7. Draw a new part-part-whole model on the board. Say, "Let's use a part-part-whole model to solve." Ask students if they can identify how to fill in the part-part-whole model using the given equation. If needed, help students recognize that the sum, 9, is the whole, and the addend, 2, is one part. Leave the left *Part* portion blank.
8. Remind students of the *count on* strategy. Say, "This time we will count on a little differently. We will start at 2. For every number we count, we will draw a dot in the missing *Part*. We will stop counting when we reach 9 (the whole). Then, we will count the dots to figure out the missing *Part*. Use this strategy to determine the missing part (7) and complete the part-part-whole model and the equation.
9. Repeat Steps 7–9 with another missing addend equation: $\square + 3 = 10$.

Addition Equations with an Unknown *(cont.)*

Whole-Group Lesson *(cont.)*

We Do

1. Refer students to the Find the Missing Numbers activity sheet (*Student Guided Practice Book*, page 48).
2. Use the part-part-whole model and the count on strategy to solve Questions 1–4 with students. Provide some support by using guiding questions, such as: "How can you show this equation on the part-part-whole model?" and "What is a strategy you can use to find the missing part/whole?"
3. As students use the count on strategy to complete addition equations up to 20, model for them how to use 10 as a benchmark number to count with. For example, look at Question 1 together (*7 + 4 =* ☐). Ask students to identify how to fill in the part-part-whole model (*Part: 7; Part: 4*). Say, "Let's use the count on strategy. What number should we count on from?" Allow students to share their ideas. If students suggest counting on from 7, say, "Rather than starting at 7 and counting on 4 by ones, I will think of my benchmark number, 10. Counting on from 7, I know that three more gets me to 10. I need to count on a total of 4. So I will count one more, which gets me to 11." You can also model the strategy of counting on from 4. For example, "Counting on from 4, I know that six more gets me to 10. I need to count on a total of 7. So I will count one more, which makes 11." Be sure students recognize that this procedure can only be followed when the addend they are counting on from is less than 10.
4. Repeat for Question 2 (*10 +* ☐ *= 17; 7*), Question 3 (☐ *+ 6 = 12; 6*), and Question 4 (*11 +* ☐ *= 18; 7*).
5. Finally, have students answer Question 5. They will choose one question on the activity sheet and explain how they used the count on strategy to solve. Provide them with the following sentence frames to help them explain their thinking.
   - *I counted on from the number*_____.
   - *I counted on* _____ *more.*

Addition Equations with an Unknown *(cont.)*

Whole-Group Lesson *(cont.)*

You Do

1. Refer students to the Missing Numbers: Add activity sheet (*Student Guided Practice Book*, page 49). Students will continue to solve addition equations with unknowns in various positions using part-part-whole.
2. Have students share their addition equations and reasoning. If students have difficulty explaining their reasoning, remind them to use the sentence frames and the vocabulary terms. For example, students should describe how they counted on or counted back to the find the missing *part* or *whole* in the model.

Closing the Whole-Group Lesson

Revisit the focus question for the lesson: *How can you solve addition equations?* Ask students to identify the model that you used to solve (*part-part-whole*) as well as the strategies (*count on*; *using 10 as a benchmark to count on*). On the board, show students an example of a problem you solved during the lesson. Ask students to identify anything they noticed about the numbers in the model and in the equation. Guide them to recognize that even though they used these models to solve addition problems, the models can also be used for subtraction. In subtraction, we start with a whole and subtract one part. The result is the other part. In addition, we combine the parts to make the whole.

Progress Monitoring 5 min.

1. Have students complete the Quick Check activity sheet (*Student Guided Practice Book*, page 50) to gauge student progress toward mastery of the Learning Objectives.
2. Based on the results of the Quick Check activity sheet and your observations during the lesson, identify students who may benefit from additional instruction in the Learning Objectives. These students will be placed into a small group for reteaching. See instructions on the following page.

Addition Equations with an Unknown *(cont.)*

Differentiated Instruction 20 min.

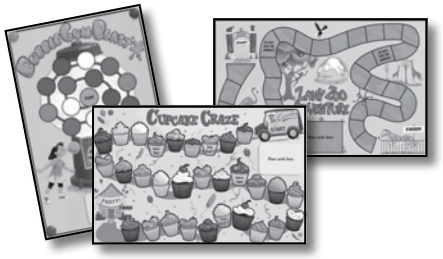
Gather students for reteaching. The remaining students will complete the Independent Practice activity sheet (*Student Guided Practice Book*, page 52) to reinforce their learning and then play the Math Fluency Games.

Refocus PPT

Revisit the focus question for the lesson: *How can you solve addition equations?* Provide students with unlined paper. This will become a large part-part-whole model. Help students fold the paper in half horizontally, unfold it, and trace the fold. Then, have students lay the paper lengthwise and draw a vertical line to divide the bottom section into two parts. Finally, label the top section *Whole* and each bottom section *Part*. Provide students with counters.

Write: □ + *2* = *7*. Record the equation on the part-part-whole model (*7 is the whole; 2 is one part*). Then, have them model the part by making a group of two counters. Say, "To find the missing part, we need to add counters until we get to seven." Count on from 2 until they have seven total counters. Students should make the other group of counters in the empty *Part* section. Ask how many counters were added (*five*) and complete the equation. Have students "clear" the part-part-whole model by removing the counters and erasing the numbers. Repeat to solve □ + *3* = *11* (*8* + *3* = *11*). Finally, support students as they solve Questions 1–4 on the Refocus activity sheet (*Student Guided Practice Book*, page 51) independently or with a partner.

Math Fluency Games



Math Fluency Game Sets

Digital Math Fluency Games

Extend Learning

Solve problems with two missing addends. For example: *Martha has some nickels and some pennies. She has 6 coins altogether. How many nickels and how many pennies could she have?* Say, "We know Martha has six coins. We need to think of different combinations of numbers that equal six coins." Guide students in identifying pairs of numbers (*one nickel/five pennies; two nickels/four pennies; three nickels/three pennies; four nickels/two pennies; five nickels/one penny*). Then, support students as they complete the Lesson 7 Extend Learning Task (extendtask7.pdf).

Addition Equations with an Unknown *(cont.)*

Math in the Real World 30 min.

1. Refer students to the Math in the Real World: Swimming Laps task (*Student Guided Practice Book*, page 53). Have a student read the task aloud. Tell students to explain or summarize the task to their partner. Have a few students share their summaries.
2. Ask students to think about what information they will need to solve the task and what the task is asking them to do. Then, have them share with a partner. Ask a few students to share out. Students should identify that we know Josh swam five laps and Jo also swam laps. We need to find out how many laps Jo swam. Have students work in groups of two or three to complete the task.
3. As students are working, circulate and ask focusing, assessing, and advancing questions:
   - *How can you use a part-part-whole model to solve?*
   - *How can you write an equation to match the problem?*

Sentence Frames for Explaining Reasoning

- *The whole is _____. The part is _____. To find the missing part, I can _____.*
- *I can use the equation _____ to solve the problem.*
- *Jo swam _____ laps.*

4. Observe how students are solving the task, and choose a few groups who solved the task in different ways to share their solutions and reasoning. Try to have the solutions move from concrete representations to more abstract representations. For example, have students share solutions using the part-part-whole model. Then, have students share the equation that can be used to solve the problem ($5 + \square = 16$). Make sure students explain their reasoning as they share solutions.
5. As groups are sharing their solution paths, reasoning, and strategies, ask questions:
   - *How is this strategy similar to one that we have seen in a previous task?*
   - *Who can restate ____'s strategy/solution/reasoning?*

Lesson Reflection 5 min.

Have students summarize their learning about how to solve for an unknown in an addition problem, and draw a picture to show their learning on the Reflection activity sheet (*Student Guided Practice Book*, page 54).

LESSON 7

Name: _____ Date: _____

Find the Missing Numbers

Directions: Find the numbers that are missing.

1. 7 + 4 = ☐

Whole	
Part	Part

2. 10 + ☐ =17

Whole	
Part	Part

3. ☐ + 6 = 12

Whole	
Part	Part

4. 11 + ☐ = 18

Whole	
Part	Part

Pick a question. Tell how you solved.

_____

_____

_____

Name: _____ Date: _____

LESSON 7

Missing Numbers: Add

Directions: Find the numbers that are missing.

1. ☐ + 6 = 11

Whole	
Part	Part

2. 7 + 5 = ☐

Whole	
Part	Part

3. ☐ + 5 = 14

Whole	
Part	Part

4. 8 + ☐ = 16

Whole	
Part	Part

LESSON 7

Name: _____ Date: _____

Quick Check

Directions: Solve for the missing number. Choose the solution.

1. 10 + ☐ = 14

   A) 24 C) 14

   B) 5 D) 4

2. ☐ + 11 = 16

   A) 5 C) 7

   B) 16 D) 27

Directions: Fill in the missing number. Then, tell how you solved.

3. ☐ + 8 = 15

Whole	
Part	Part

_____

_____

_____

Name: _____ Date: _____

LESSON 7

Refocus

Directions: Find the numbers that are missing.

1. ☐ + 5 = 10

2. 8 + ☐ = 12

3. 9 + 7 = ☐

4. ☐ + 6 = 13

LESSON 7

Name: _____ Date: _____

Independent Practice

Directions: Find the missing number. Then, color the square.

6 = blue 3 = yellow 7 = green

1. ◯ + 9 = 15
2. 7 + ◯ = 14
3. 2 + ◯ = 8
4. 12 + ◯ = 15
5. ◯ + 10 = 16
6. 8 + ◯ = 14

What letter did you make with blue? _____

Name: _____ Date: _____

LESSON 7

Math in the Real World

Swimming Laps

Josh swam 5 laps at the pool. Jo swam some laps, too. Together, they swam 16 laps. How many laps did Jo swim?

What Do We Know?

Make a Plan

Solution

Explain How You Know

LESSON 7

Name: _____ Date: _____

Reflection

1. How did you solve for the missing number?

_____

_____

_____

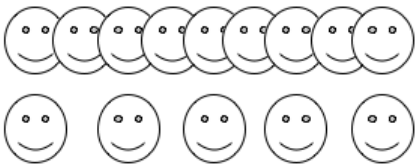
_____

2. Draw a picture to show what you learned.

Name:_____ Date:_____

Pretest

1. Ann had 9 stickers for good work. She got 5 more. How many stickers does she have now?



(A) 15 stickers

(B) 4 stickers

(C) 13 stickers

(D) 14 stickers

2. There are 7 green grapes and 8 red grapes in a bowl. How many grapes are there in all?

(A) 15 grapes

(B) 16 grapes

(C) 1 grape

(D) 19 grapes

3. Jeff has 4 more cookies than Juan. Juan has 6 cookies. How many cookies does Jeff have?

(A) 8 cookies

(B) 9 cookies

(C) 10 cookies

(D) 11 cookies

4. Pat has 10 dolls. There are 3 dolls with brown hair. The rest have black hair. How many dolls have black hair?

(A) 6 dolls

(B) 7 dolls

(C) 8 dolls

(D) 13 dolls

Name:_____ Date:_____

Performance Task 1
Zoo Field Trip

Part A

Mr. Kwan's class went on a field trip to the zoo.

1. First, the class saw monkeys. There were 10 monkeys in a tree. Then, 4 more monkeys came. How many monkeys were there in all?

Solution: _____

2. Next, the class saw parrots. They saw 12 parrots eating fruit. Then, 3 flew away. How many parrots were left?

Solution: _____