

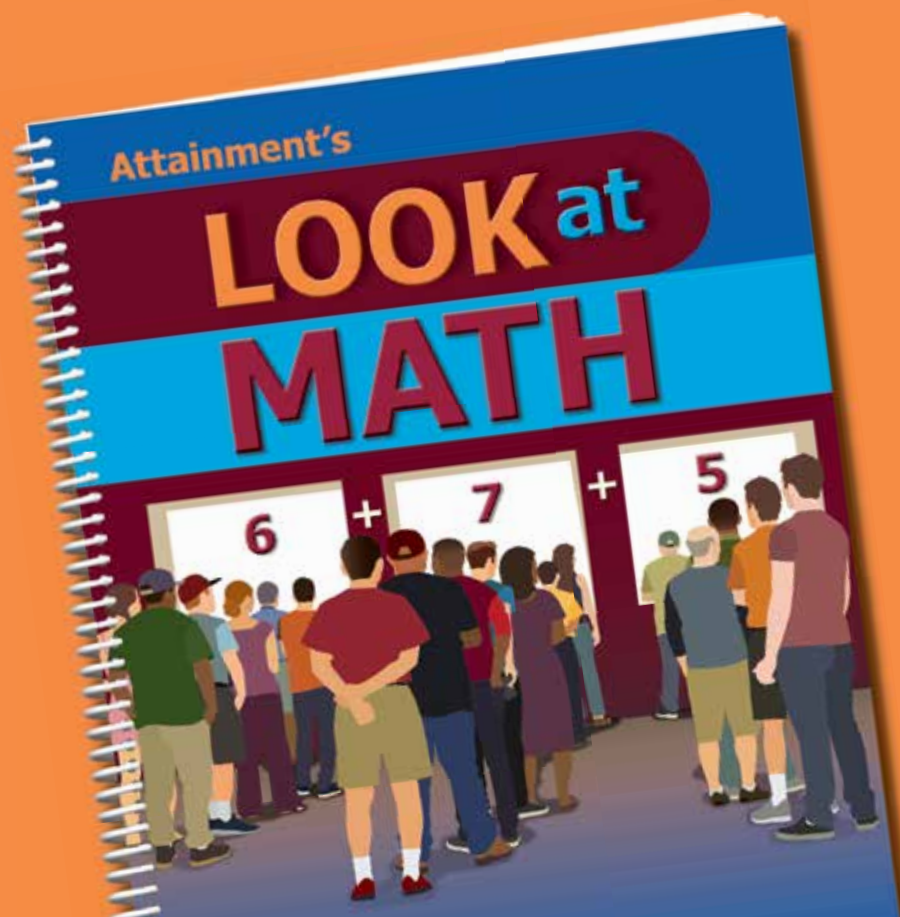
Attainment's

LOOK at

MATH

Instructor's Guide

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UNIT ONE • NUMBERS

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Materials

Materials for All Three Units

Student Book

Covers three units and eleven chapters of math content; includes four topics per chapter with multiple activities for each. Provides math-related illustrations and number lines that represent abstract problems to help students solve math problems.

Instructor's Guide

Provides step-by-step instructions for 122 lessons, complete with vocabulary and quizzes to assess student progress.

Black Bases with Unmarked Number Lines

These bases are used in conjunction with the Hands-On Math 2 number lines. They include unmarked number lines for better placement of the number pieces.

Storage Boxes (3)

Store the curriculum components for the three units.

Number Lines (12)

There are twelve number lines that are included with the hands-on materials for Hands-On Math 2, four for each unit.

Pegs (blue and red)

Ten pegs come with the HOM2 Kit to use with all four math operations.

Blue Foam Sheets (6)

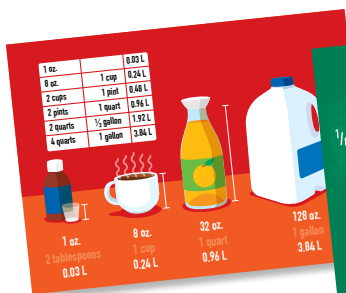
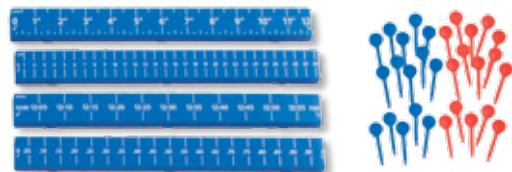
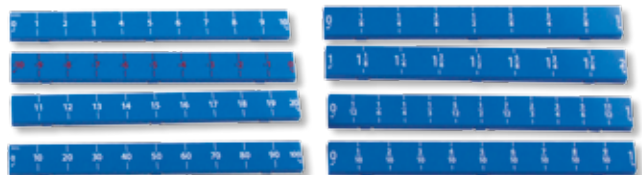
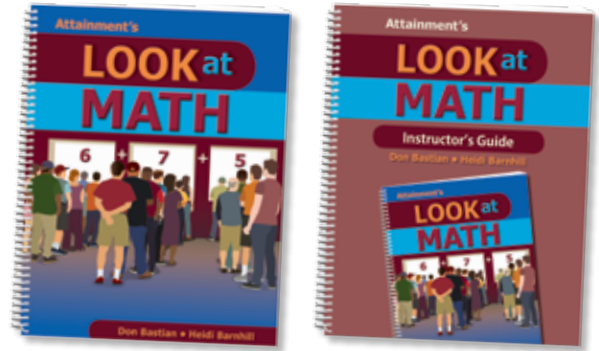
Apply the supplemental number lines and number pieces to the foam sheets for increased durability.

Flash Drive with PDF files

The flash drive contains PDF files of the *Student Book*, *Vocabulary Cards*—picture and word cards, the image library, and all the number lines and number pieces in an electronic format. It also includes supplemental number lines and pieces that are not included in the HOM2 kit, but may be pictured in the **Look at Math** books.

Image Library

Consists of images for all the vocabulary words as well as the detailed illustrations used to represent the math problems in the **Look at Math Student Book**.



Materials for *Unit One: Numbers*

Unit One Storage Box

Stores the curriculum components for *Unit One: Numbers*.

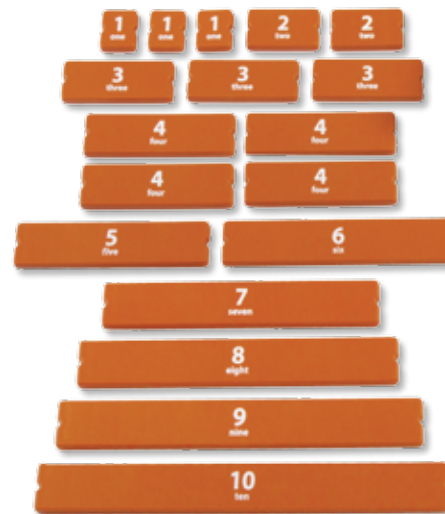
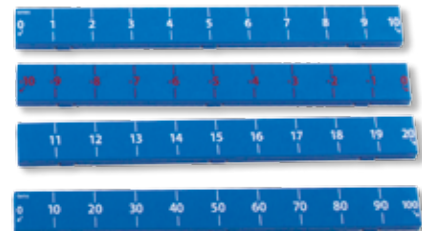
Number Lines

- 1 to 10 number line
- 1 to -10 number line
- 11 to 20 extension number line
- 10 to 100 number line

Number pieces

Eighteen number pieces are included in HOM 2. These same number pieces are on the Look at Math flash drive for printing purposes. Use the foam sheets provided to make the pieces more durable for your students.

Note: Foam sheets can be purchased at several retailers nationwide at a minimal cost.



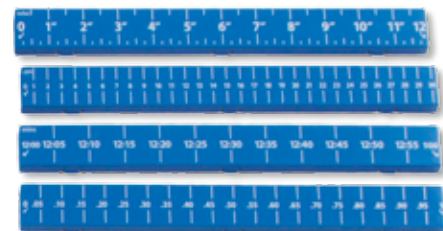
Materials for *Unit Two: Measurements*

Unit Two Storage Box

Contains the curriculum components for *Unit Two: Measurements*.

Number Lines

- 1" to 12" number line
- 1 to 30 cm number line
- 12:05 to 1:00 number line
- .05 to 1.00 number line



Materials

Decimal and Money Pieces

Twenty-four decimal and money pieces are used throughout *Unit Two*, most specifically to help students conceptualize math related to money. Use the foam sheets provided to make the pieces more durable for your students.

Minute Pieces

Twenty minute pieces are included for hands-on support when covering math related to time.

TimeWheel

Hands-on representation of a digital and analog clock for use in *Chapter 6, Time*.

Objects to Measure

Multiple objects are measured in the **Look at Math** lessons. The HOM2 includes wooden dowels, a pen, a spoon, a plastic worm, and a toothbrush holder for measurement purposes.

Geometric Shapes

Black geometric shapes are used to help represent math problems related to measurement: (length, width, perimeter, area, etc.)



Materials for Unit Three: Fractions

Unit Three Storage Box

Contains all curriculum components for *Unit Three: Fractions*.

Number Lines

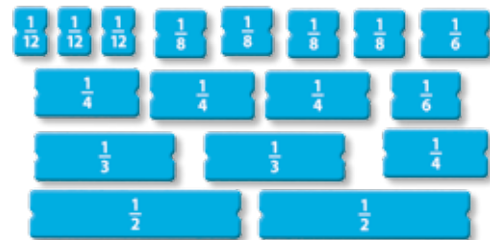
- $\frac{1}{8}$ to 1 number line
- $1\frac{1}{8}$ to 2 number line
- $\frac{1}{2}$ to 1 number line
- $\frac{1}{10}$ to 1 number line

Fraction Pieces

Twenty-seven fraction pieces are used with the fraction lines to help students solve math problems related to fractions. Use the foam sheets provided to make the pieces more durable for your students.

2 foam fraction dice

Large format dice showing the following fractions: $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{8}$, $\frac{1}{12}$. Play games with the dice for additional practice with fractions.



Lesson Structure

All the lessons in the **Look at Math Instructor's Guide** have the same structure. Each lesson, color-coded by unit, includes the lesson number and lesson title. It also provides a step-by-step procedure for teachers to follow in their daily instruction. Within each step, there are additional points that can be discussed to extend or expand lesson content. Thumbnails of the student pages are included as a reference point, along with all the answers for the math exercises.

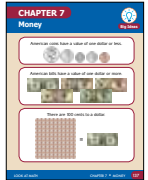
To start every chapter, three *Big Ideas* are presented, highlighting the chapter's key math facts. Following the three *Big Ideas* are eight vocabulary words. Vocabulary cards (both picture- and word-based) are included on the flash drive for additional activities and exercises. The chapters continue with four progressive topics, ending with an assessment quiz to determine student mastery. The last component of the chapter is the *Challenge* which is completely optional. It provides an advanced

activity that extends the math concept beyond the topics covered in the chapter. Lastly, a glossary of all vocabulary words is found at the end of the **Student Book** which includes each vocabulary word, a corresponding illustration, definition, and the page on which the word can be found.

Lesson 67 Identify 3 Big Ideas in Money Measurement

Student Book page 137

- Read the text and examples for the first big idea. Discuss the following points:
 - Use actual coins to show students that coins with the same value vary in appearance.
- Read the text and examples for the second big idea. Discuss the following points:
 - There is a \$100.00 bill. As with coins, bills of the same value vary in appearance.
- Read the text and examples for the third big idea. Discuss the following points:
 - Point out that \$100.00 equals 100 one-dollar bills.



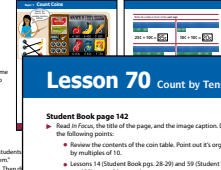
Lesson 69 Count Coins

Student Book page 140

- Read the page title, image caption, and the contents of the writing machine drawing. Then discuss the following points:
 - Discuss the meaning of *exact change*.
 - Reinforce that the images on the fronts and backs of coins of the same value may vary, so it's important to recognize coins by their size and general appearance.
- Read the exercise instructions and tell students to "first look at the picture, then circle the answer for each problem."

Student Book page 141

- Read the exercise instructions and tell students to "write on a separate piece of paper or on a separate piece of paper or on a separate piece of paper."
- Tell students that each new vocabulary word will be reviewed again after 15 days in a lesson.



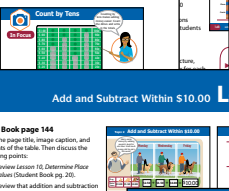
Lesson 70 Count by Tens and Topic Quiz

Student Book page 142

- Read the page title, the title of the page, and the image caption. Discuss the following points:
 - Review the contents of the coin table. Point out it's organized by multiple of 10.
 - Lessons 14 (Student Book pages 28-29) and 59 (Student Book page 126) cover skip counting.
- Read the exercise instructions and review the *dollar sign*. Tell students to "first look at the picture, then complete each problem."

Student Book page 143

- These options to administer the quiz are given to work together in small groups or "take the quiz" individually.
- Option 1: Students take the quiz independently.
- Option 2: Teacher reads the word problems to students and they write their answers. Students look at the end of the page to check their answers.
- Option 3: Teacher reads each problem and then places matching number pieces in the number or writes the answer. As an additional prompt, it is to answer.



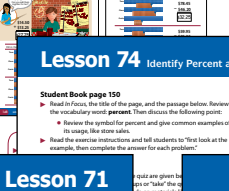
Lesson 71 Add and Subtract Within \$10.00

Student Book page 144

- Read the page title, image caption, and the contents of the table. Then discuss the following points:
 - Reinforce that the numbers to the right of a decimal point have values less than 1.
 - Discuss the meanings of "cents" and "tenths."
- Read the exercise instructions and tell students to "first look at the picture, and then complete the answer for each problem."

Student Book page 145

- Tell students to "first look at the picture, and then complete the answer for each problem."
- The table shows how much money changes to get the larger the dog, the more the changes.



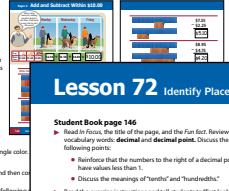
Lesson 72 Identify Place Values for Decimals and Topic Quiz

Student Book page 146

- Read the page title, the title of the page, and the Fun Fact. Review the vocabulary words: *decimal* and *decimal point*. Discuss the following points:
 - Reinforce that the numbers to the right of a decimal point have values less than 1.
 - Discuss the meanings of "cents" and "tenths."
- Read the exercise instructions and tell students to "first look at the picture, and then count the money and write the value for each problem."

Student Book page 147

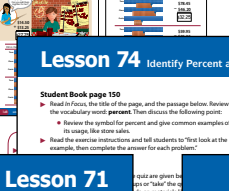
- These options to administer the quiz are given below. Students can work together in small groups or "take the quiz" individually.
- Option 1: Students take the quiz independently without teacher support.
- Option 2: Teacher reads the word problems to the students and they circle or point to their answers. Students look at the number problems and place matching number pieces in the number lines to get or verify their answers.



Lesson 73 Add and Subtract Within \$100.00

Student Book page 148

- Read the page title, image caption, and the contents of the table. Then discuss the following points:
 - Reinforce that the numbers to the right of a decimal point have values less than 1.
 - Discuss the meanings of "cents" and "tenths."
- Read the exercise instructions and tell students to "first look at the picture, and then complete the answer for each problem."



Vocabulary Word	Illustration	Definition	Page
Cent sign	¢	Used when values are less than a dollar	141
Circumference		Distance around a circle	174
Common denominator	$\frac{1}{8}, \frac{3}{8}$	When fractions have the same denominator	
Common factor	$\frac{4+4}{8+4} = \frac{1}{2}$	A number into two or more numbers	
Convert	$\frac{1}{5} = 0.20$	To change different units to the same unit	
Cross multiply	$\frac{1}{2} \times \frac{3}{8}$	To multiply each side of the other	
Currency		A type of money	
Decimal	1.25	A number value that is less than one	

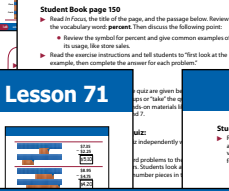
Lesson 74 Identify Percent and Topic Quiz

Student Book page 150

- Read or review the title of the page, and the passage below. Review the vocabulary word *percent*. Then discuss the following points:
 - Reinforce that the symbol for percent and give common examples of its usage in real life.
- Read the exercise instructions and tell students to "first look at the picture, then complete the answer for each problem."

Student Book page 151

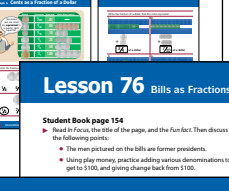
- Read the exercise instructions and tell students to "first look at the picture, then complete the answer for each problem."



Lesson 75 Identify Cents as Fractions of a Dollar

Student Book page 152

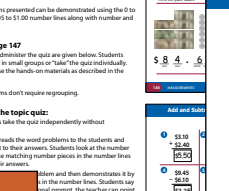
- Read the page title, image caption, and the contents of the table. Review the vocabulary word: *equivalent*. Discuss the following points:
 - The quarter and half-dollar coins are named after the fractions their value represents.
- Read the exercise instructions and tell students to "first look at the picture, then complete the answer for each problem."



Lesson 76 Bills as Fractions of \$100.00 and Topic Quiz

Student Book page 154

- Read the page title, the title of the page, and the Fun Fact. Then discuss the following points:
 - The new printed on the bills are former presidents.
 - Using play money, practice adding various denominations to get to \$100, and giving change back from \$100.
- Read the exercise instructions and tell students to "first look at the picture, then complete the answer for each problem."



Challenge: Understand Exchange Rate Lesson 77

Student Book page 156

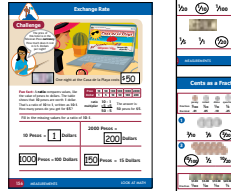
- Read the page title, image caption, the contents of the computer screen, and the Fun Fact. Review the vocabulary words: *currency* and *exchange rate*. Then discuss the following points:
 - Show where Mexico is on a map of the globe.
 - Look up images of Mexican Pesos on the Internet.
 - Discuss other common uses of pesos. For example, a recipe for guacamole uses 1 cup of oil for 2 cups of water (one 1/2 cup).
- Read the exercise instructions and tell students to "first look at the picture, then complete the answer for each problem."

Student Book page 157

- Read the image caption and the contents on the computer screen. Then discuss the following points:
 - The yuan is the currency in China.
- Read the exercise instructions and tell students to "first look at the picture, then complete the answer for each problem."

Student Book page 158

- The Challenge Practice is optional. Provide additional examples, if appropriate.



Glossary

Vocabulary Word	Illustration	Definition	Page
Absolute value	$ 7 = 7$ $ -7 = 7$	The distance a number is from zero on a number line	56
Addend	$3 + 7 = 10$	Any number being added	14
Addition	$3 + 6 = 9$	Combine numbers together to make a bigger number	3
a.m.		The 12 hours from midnight to noon	152
Analog clock		Displays the time by the positions of moving hands on a round clock	118
Area	$A = l \times w$	Measurement of the space inside a shape	170
Balance	$x + 5 - 3 = 10 - 5$	Doing the same thing to both sides of an equation to keep them equal	82
Celsius	$^{\circ}C$	A scale to measure temperature	102

How to Use

How to Use

Look at Math makes math concepts more explicit by representing them with number pieces on a number line.

To get started, review the lesson before introducing it to the students. Have students turn to the appropriate pages in the **Student Book**. If you do not have enough **Student Books**, project or copy as many as you need from the PDF files on the flash drive. Start with reading the lesson title. Then, after reading the instructions, decide whether you'd like to set up the materials as described in the lesson (with the Hands-On Math 2 Kit or the electronic resources provided on the flash drive). The **Look at Math** lessons can be presented for small group or one-on-one instruction. You can teach multiple trials of a lesson by quickly adjusting the materials presented or changing the values in the problems.

- ▶ For concrete learners, the teacher sets up the hands-on materials following the hands-on set up referenced in the lesson. The teacher or the student can place the pieces, but the student derives the answer from reading the number line, not from doing the underlying math. If a student is unable to read the answer from the number line, the teacher reads and/or points to the answer as an additional prompt.
- ▶ Representational learners use the picture-based approach where illustrations show each math problem. The student derives the answer by interpreting the picture.
- ▶ Abstract learners solve the problem independently and use the number lines or illustrations to verify their work.

The Concrete, Representational, and Abstract options provide a high-to-low sequence of instructional support. Your goal is for all students to become abstract learners, although this may be unattainable for some students with certain lessons. Use a whiteboard to make additional examples of the math problems and to enhance overall student engagement.

Topic 4 Add and Subtract Fractions with Unlike Denominators

Fun fact: One way to write the sum in the box.

1. $\frac{1}{8} + \frac{1}{4}$

3. $\frac{1}{12} + \frac{3}{4}$

220 FRACTIONS

Beat the Dealer!

Add the dice to see if you beat the dealer.

Roll two dice 3 times. If your sum is greater than the dealer's sum twice, YOU WIN!

Dealer's Roll:

$\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$

$\frac{1}{4} + \frac{5}{8} = \frac{3}{4}$

$\frac{1}{2} + \frac{1}{16} = \frac{9}{16}$

$\frac{1}{16} + \frac{3}{8} = \frac{7}{16}$

5. $\frac{3}{4} + \frac{5}{8} = \frac{\quad}{\quad}$

6. $\frac{7}{10} + \frac{1}{2} = \frac{\quad}{\quad}$

7. $\frac{5}{6} - \frac{1}{3} = \frac{\quad}{\quad}$

9. $\frac{3}{4} - \frac{3}{8} = \frac{\quad}{\quad}$

221 FRACTIONS

LOOK AT MATH CHAPTER 10 • ADD AND SUBTRACT FRACTIONS

221

Concrete learners derive the answers from reading number lines, not from doing the math.

Distance, Speed, and Time

Quiz

Look at the picture and answer the questions.

1. How long did it take the ant to travel 50 meters? _____ minutes	2. How far did the ant travel in 15 minutes? _____ meters
3. How far did the ant travel in 45 minutes? _____ meters	4. How long did it take the ant to get to the anthill? _____ hour
5. How far was the ant when it was halfway to the anthill? _____ meters	6. How far away was the anthill from where the ant started? _____ meters

LOOK AT MATH CHAPTER 5 • STANDARD AND METRIC MEASURES **111**

Abstract learners solve the problems independently.

Topic 4 Distance, Speed, and Time

Quiz

Complete the table by filling in the distance the snail traveled in inches.

Time in minutes	0	15	30	45	60
Distance in inches	0	3			

Answer the questions.

How far does the snail travel in 20 minutes?
_____ inches

How many minutes does it take for the snail to travel 10 inches?
_____ minutes

LOOK AT MATH CHAPTER 10 • MEASUREMENTS **108**

Representational learners interpret the illustrations to derive the answers.

**LOOK AT MATH
INSTRUCTOR'S GUIDE**

UNIT ONE • NUMBERS

CHAPTER 1 • ADD AND SUBTRACT 13
CHAPTER 2 • MULTIPLY AND DIVIDE 27
CHAPTER 3 • POSITIVE AND NEGATIVE NUMBERS 41
CHAPTER 4 • ALGEBRA 55

CHAPTER 1

Add and Subtract

This chapter presents a significant difficulty progression. It begins with add and subtract within 10 and progresses to within 100 requiring regrouping.

Hands-on lessons: Demonstrating subtraction on a number line is less straightforward than addition. When adding, simply place the number pieces representing the addends on the number line and read the sum. In subtraction, the first and larger number (minuend) is represented with a peg. The subtrahend number piece is placed to the left of the peg and then the students read the difference.

NCTM Content Standards in this chapter include:

Understand numbers, ways of representing numbers, relationships among numbers, and number systems

Grades 3–5 Expectations: In grades 3–5 each and every student should—

- understand the place-value structure of the base-ten number system and be able to represent and compare whole numbers and decimals;
- recognize equivalent representations for the same number and generate them by decomposing and composing numbers.

Understand meanings of operations and how they relate to one another

Pre-K–2 Expectations: In pre-K through grade 2 each and every student should—

- understand various meanings of addition and subtraction of whole numbers and the relationship between the two operations;
- understand the effects of adding and subtracting whole numbers.

Compute fluently and make reasonable estimates

Pre-K–2 Expectations: In pre-K through grade 2 each and every student should—

- develop and use strategies for whole-number computations, with a focus on addition and subtraction;
- develop fluency with basic number combinations for addition and subtraction;
- use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators.

Represent and analyze mathematical situations and structures using algebraic symbols

Pre-K–2 Expectations: In pre-K through grade 2 each and every student should—

- illustrate general principles and properties of operations, such as commutativity, using specific numbers;
- use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations.

Grades 3–5 Expectations: In grades 3–5 each and every student should—

- identify such properties as commutativity, associativity, and distributivity and use them to compute with whole numbers;
- represent the idea of a variable as an unknown quantity using a letter or a symbol.

Use mathematical models to represent and understand quantitative relationships

Pre-K–2 Expectations: In pre-K through grade 2 each and every student should—

- model situations that involve the addition and subtraction of whole numbers, using objects, pictures, and symbols.

Grades 3–5 Expectations: In grades 3–5 each and every student should—

- model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.

Chapter 1

Connections

Lesson	Objectives
1	Identify 3 Big Ideas in Addition and Subtraction <p>Students will learn about two fundamental mathematical properties for addition and subtraction in this section. The Identity Property of Addition and Subtraction in general terms states: $a + 0 = a$; $b - 0 = b$. In other words, zero has no quantity. Adding or subtracting zero will return the original value of the number.</p> <p>The Commutative Property of Addition stated in general terms: $a + b = b + a$. Addends may be switched in order with the same result occurring. Multiplication also follows the commutative rule. Subtraction and division do not follow this property.</p> <p>The organization of addition and subtraction problems as horizontal or vertical allows students to visualize problems differently. A horizontal problem aligns with the number line set up. A column aids students in grouping or regrouping strategies.</p>
2	Review Key Addition and Subtraction Vocabulary <p>Students will learn terms that apply to the operations of addition and subtraction.</p>
3	Add and Subtract within 10 <p>Students will be able to perform math facts practice in this lesson. One method to try has students check solutions by using the opposite operation. Alternatively, you may have students write fact family sentences ($2 + 3 = 5$, $3 + 2 = 5$; $5 - 3 = 2$, $5 - 2 = 3$) for additional practice.</p>
4	Select Plus or Minus Sign <p>Students will determine if the math problems presented are addition or subtraction. Students will also learn that addition problems are represented with a plus sign while subtraction problems are shown with a minus sign.</p>
5	Add and Subtract Within 20 <p>See notes in Lesson 3.</p>
6	Check Subtraction with Addition <p>Students will learn that you can check your answer to a subtraction problem by using addition. Simply take the number you subtracted and add it to the difference to get the number with which you started.</p>

Lesson	Objectives
7	<p>Add and Subtract with Three Terms</p> <p>When students work with more than two terms in a computation, the order of operations is a mathematical strategy to organize the problem. Students will learn to consider which arithmetic operation should be taken care of first when evaluating a math expression. The order of operations when several computational signs are included is sometimes written as the acronym PEMDAS for parentheses, exponents, multiplication, division, addition, and subtraction. Multiplication and division are of equal weight and if they occur in the same expression are performed left to right. The same equivalence holds for addition and subtraction. If those operations are all that remain, again the addition and subtraction are performed left to right. Parentheses can be added to the problems in Lesson 8 to emphasize that the first two numbers are to be added first and the last number is then subtracted. This use of parentheses would reinforce the order of operation strategies that students develop throughout the lessons.</p> <p>Students will learn the Associative Property of Addition. Addends may be grouped using parentheses in order to make addition easier. In general terms:</p> <p>$(A + B) + C = A + (B + C)$, (i.e., $4 + (6 + 7) = (4 + 6) + 7$). The second equation is “easier” because the group inside the parentheses makes a group of 10. Subtraction does not follow the associative property rules. Using the concept of order of operations, students could be introduced to the idea that subtraction should happen after the addition to ensure that a positive integer solution is found; later lessons will allow for negative values on the number line to be found.</p>
8	<p>Subtract the Last Term</p> <p>See notes in Lesson 7.</p>
9	<p>Add and Subtract Within 100</p> <p>See notes in Lesson 3.</p>
10	<p>Determine Place Values for Ones and Tens</p> <p>Students will learn that place value is the amount a digit is worth because of its position. Numbers can have digits greater than 1 (tens, hundreds, and thousands) or value between 0 and 1 (tenths, hundredths, etc.) This concept applies to the numbers that students are now solving with their addition and subtraction problems.</p>
11	<p>Challenge: Regroup in Addition and Subtraction</p> <p>Students will learn regrouping for addition takes place whenever a value for the addends is greater than 10. A new group should be made by reforming the group of 10 ones as 1 group of ten in the tens column with any remaining written in the ones place. Regrouping for subtraction takes place when the lower (bottom) number is greater than the top number. Regrouping means that you will borrow a group from the tens column to write it as additional ones to be placed in the ones column. This regrouping will allow the subtraction to take place. Regrouping practices come up in the simplification of multiplication and division problems.</p>

Lesson 1 Identify 3 Big Ideas in Addition and Subtraction

Student Book page 3

- ▶ Read the text and examples for the first *Big Idea*. Discuss the following point:
 - Zero has no quantity, so you add or subtract nothing from the number.
- ▶ Read the text and examples for the second *Big Idea*. Discuss the following points:
 - When you change the order of the numbers in subtraction, you will get a completely different answer.
 - **Note:** Commutative property is not a vocabulary term in **Look at Math**. If you choose to teach the term, refer to the *Big Ideas* in Chapter 2, *Multiply and Divide* for additional examples.
- ▶ Read the text and examples for the third *Big Idea*. Discuss the following point:
 - The up and down method can work better for bigger numbers (see pages 22–23 of the Student Book).

Note: **Look at Math** illustrates problems using the across method because it helps visualize math on a number line.

CHAPTER 1

Add and Subtract

Big Ideas

Zero (0) added to or subtracted from any number is still that number.

$8 + 0 = 8$ $8 - 0 = 8$

The order of the numbers doesn't matter in **addition**, but it does matter in **subtraction**.

$7 + 2 = 9$

$6 - 4 = 2$

$2 + 7 = 9$

$4 - 6 = 2$

Problems can be written

← across

$7 - 2 = 5$

or

up and down.

6
↑
 $+ 4$
↓
 10

LOOK AT MATH
CHAPTER 1 • ADD AND SUBTRACT
3

Lesson 2 Review Key Addition and Subtraction Vocabulary

Student Book pages 4-5

- ▶ Read each vocabulary word and its definition.
 - Review the use of **Addition** and **Subtraction** in the second *Big Idea*.
- ▶ Write the two *Find the Words* on a whiteboard, and read them aloud.
- ▶ Ask the students to either:
 - (1) copy them in the Student Book, on the whiteboard, or on a separate piece of paper; or
 - (2) point to the word you've written when it's spoken.
- ▶ Tell the students that "each new vocabulary word will be reviewed again after it's read in a lesson."

Vocabulary

Addition	$3 + 6 = 9$	Combine numbers together to make a bigger number
Subtraction	$7 - 2 = 5$	Take away from a number to make it smaller
Sum	$3 + 7 = 10$	The total when you add numbers
Difference	$7 - 3 = 4$	The total when you subtract numbers

Find the Word
The total when you subtract numbers

d i f f e r e n c e

4 NUMBERS
LOOK AT MATH

Vocabulary

Plus sign	$+$	Used when you add numbers
Minus sign	$-$	Used when you subtract numbers
Addend	$3 + 7 = 10$	Any number being added
Place value	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 5px;">tens</div> <div style="text-align: center; margin-right: 5px;">5</div> <div style="text-align: center; margin-right: 5px;">ones</div> <div style="text-align: center;">1</div> </div> <p style="font-size: 2em; margin: 0;">51</p>	The value of a digit based upon its position in a number

Find the Word
A sign used when you add numbers

p l u s s i g n

LOOK AT MATH
CHAPTER 1 • ADD AND SUBTRACT
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Student Book page 6

- ▶ Read the page title and image caption. Then discuss the following points:
 - Two birds are joining the flock.
 - **Joining** is an addition word.
- ▶ Read the exercise instructions and review the new vocabulary word: **sum**. Tell students to “first look at the picture, and then complete the answer box for each problem.”

Student Book page 7

- ▶ Read the image caption. Then discuss the following point:
 - **Leaving** is a subtraction word.
- ▶ Read the exercise instructions and review the new vocabulary word: **difference**. Tell students to “first look at the picture, then complete the answer box for each problem.”

Topic 1 Add and Subtract Within 10

Look at the picture and complete the math problem.

$2 + 5 = 7$

Addition—Write the **sum** in the box.

$7 + 2 = \boxed{9}$	$6 + 4 = \boxed{10}$
$1 + 5 = 6$	$5 + 3 = \boxed{8}$

6 NUMBERS LOOK AT MATH

Subtraction—Write the **difference** in the box. Blue pegs mark the first number in the problem. Number pieces show how many to take away.

$10 - 5 = \boxed{5}$	$6 - 3 = \boxed{3}$
$8 - 2 = \boxed{6}$	$7 - 4 = \boxed{3}$

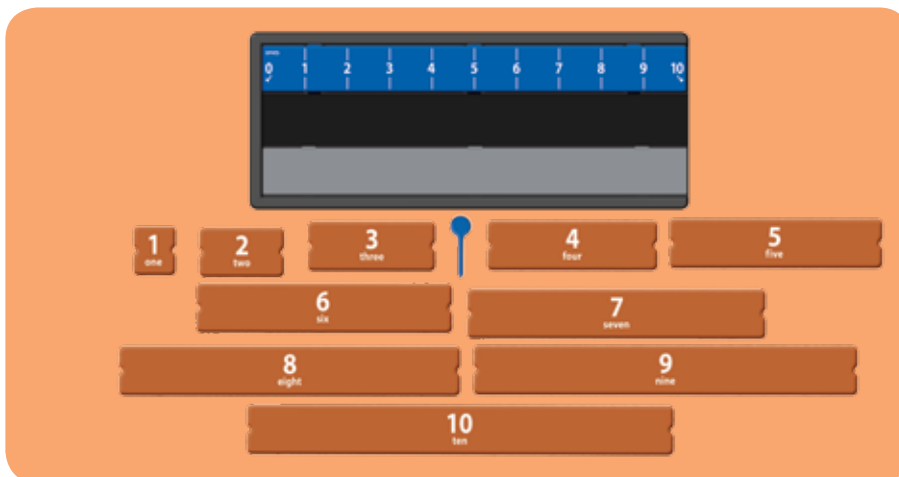
How many birds are leaving the flock?

$7 - 3 = 4$

LOOK AT MATH CHAPTER 1 • ADD AND SUBTRACT 7

HANDS-ON SET UP

- ▶ Place the 1 to 10 and an unmarked (optional) number line in the base as shown. Place a group of tan number pieces in front of the number line. For subtraction, put a blue peg in the number line base at the location of the first term. Present extra problems on a whiteboard or paper as needed.



Student Procedure

- ▶ **Option 1:** Solve the problem and write or say the answer. Place the number pieces in the number line to verify your work.
- ▶ **Option 2:** Look at the problem and place matching number pieces in the number line. Then write or say the answer.
- ▶ **Option 3:** Teacher reads the problem and places the matching number pieces in the number line. Students say or write the answer. As an additional prompt, the teacher can point to the answer on the number line.
- ▶ **Note:** All hands-on materials are found on the **Look at Math** flash drive. Print the number lines and number pieces to do the hands-on demonstrations.

Lesson 4 Select Plus or Minus Sign

Student Book page 8

- ▶ Read *In Focus*, the title of the page, and the passage below. Review the vocabulary words: **plus sign** and **minus sign**. Tell students to “first look at the picture, then circle (or point to) the correct sign for each problem.”
- ▶ Read the story problem and tell students to “write or say the answer.”
- ▶ Teacher options: Use a number line and pieces to demonstrate the story problem. Change the values in the story and demonstrate those problems.

Student Book page 9

- ▶ Three options to administer the quiz are given below. Students can work together in small groups or “take” the quiz individually. Options 2 and 3 use the hands-on materials as described in the previous lesson.

Read the title of the topic quiz:

- ▶ Option 1: Students take the quiz independently without teacher support.
- ▶ Option 2: Teacher reads the word problems to the students and the students circle or point to the answer. The students look at the number problems and place matching number pieces in the number line to get or verify the answers.
- ▶ Option 3: Teacher reads each problem and then demonstrates it by placing matching number pieces in the number line. Students say or write the answer. As an additional prompt, the teacher can point to the answer on the number line.

Select Plus or Minus Sign

The **plus sign** is used in addition. The **minus sign** is used in subtraction. See if the problems below are addition or subtraction. Then circle the correct sign.

In Focus

$\begin{array}{r} 6 \\ + \\ 2 \\ \hline \end{array} = 8$	$\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$
$\begin{array}{r} 7 \\ + \\ 1 \\ \hline \end{array} = 6$	$\begin{array}{r} 4 \\ - 3 \\ \hline 7 \end{array}$
$\begin{array}{r} 8 \\ + \\ 2 \\ \hline \end{array} = 10$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$

Story On Saturday, Mila cleaned and swept her room. Under her bed she found 7 socks and 3 books. How many things altogether were under Mila's bed?

$$\boxed{7} + \boxed{3} = \boxed{10}$$

8 NUMBERS
LOOK AT MATH

Add and Subtract Within 10

Quiz

<p>1</p> $\begin{array}{r} 6 \\ + 1 \\ \hline 7 \end{array}$	<p>2</p> $1 + 6 = \boxed{7}$	<p>3</p> <p>True or False</p> $6 + 0 = 6$
<p>4</p> $\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$	<p>5</p> $2 + 7 = \boxed{9}$	<p>6</p> <p>Circle the sum.</p> $6 + 2 = \boxed{8}$
<p>7</p> $\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array}$	<p>8</p> $10 - 8 = \boxed{2}$	<p>9</p> <p>Circle the difference.</p> $7 - 2 = \boxed{5}$
<p>10</p> $\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$	<p>11</p> $3 - 2 = \boxed{1}$	<p>12</p> <p>Write the signs in the boxes.</p> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="text-align: center;"> $\boxed{+}$ <p style="font-size: x-small;">plus</p> </div> <div style="text-align: center;"> $\boxed{-}$ <p style="font-size: x-small;">minus</p> </div> </div>

As Gerald was walking his dog, he saw 9 geese standing by a pond. His dog barked and 6 flew away. How many geese were left?

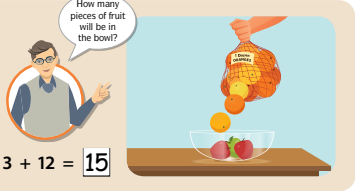
$$\boxed{9} - \boxed{6} = \boxed{3}$$

LOOK AT MATH
CHAPTER 1 • ADD AND SUBTRACT
9

Student Book page 10

- ▶ Read the page title, image caption, and *Fun fact*. Then discuss the following points:
 - We are mixing apples and oranges to calculate how many pieces of fruit are in the bowl.
 - Other items packaged by dozens include donuts and roses.
- ▶ Read the exercise instructions and emphasize that these four problems are addition. Tell students to “first look at the picture, and then complete the answer box for each problem.”

Topic 2 Add and Subtract Within 20



How many pieces of fruit will be in the bowl?

$3 + 12 = 15$

Fun fact: A dozen equals 12.

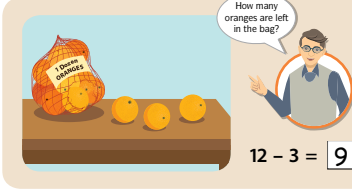
Addition—Write the sum in the box.

$5 + 8 = 13$	$\begin{array}{r} 9 \\ + 6 \\ \hline 15 \end{array}$
$10 + 7 = 17$	$\begin{array}{r} 10 \\ + 3 \\ \hline 13 \end{array}$

10 NUMBERS LOOK AT MATH

Subtraction—Write the difference in the box.

$13 - 9 = 4$	$\begin{array}{r} 18 \\ - 8 \\ \hline 10 \end{array}$
$16 - 10 = 6$	$\begin{array}{r} 14 \\ - 6 \\ \hline 8 \end{array}$



How many oranges are left in the bag?

$12 - 3 = 9$

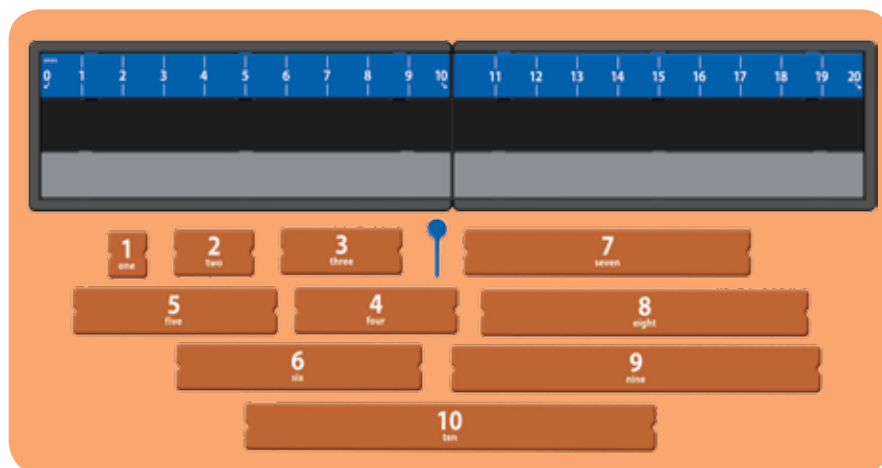
LOOK AT MATH CHAPTER 1 • ADD AND SUBTRACT 11

Student Book page 11

- ▶ Read the exercise instructions and emphasize that these four problems are subtraction. Tell students to “first look at the picture, and then complete the answer box for each problem.”
- ▶ Read the image caption. Then discuss the following points:
 - Reinforce that a dozen equals 12.
 - Another way to state the problem is “how many oranges remain in the bag?”

HANDS-ON SET UP

- ▶ Place the 1 to 10 and an unmarked (optional) number line in one base; and the 11 to 20 and an unmarked (optional) number line in a second base. Align the bases as shown. Place a group of tan number pieces in front of the number line. For subtraction, put a blue peg in the number line base at the location of the first term. Present extra problems on a whiteboard or paper as needed.



Student Procedure

- ▶ **Option 1:** Solve the problem and write or say the answer. Place the number pieces in the number line to verify your work.
- ▶ **Option 2:** Look at the problem and place matching number pieces in the number line. Then write or say the answer.
- ▶ **Option 3:** Teacher reads the problem and places the matching number pieces in the number line. Students say or write the answer. As an additional prompt, the teacher can point to the answer on the number line.
- ▶ **Note:** All hands-on materials are found on the **Look at Math** flash drive. Print the number lines and number pieces to do the hands-on demonstrations.

Lesson 6 Check Subtraction with Addition

Student Book page 12

- ▶ Read *In Focus*, the title of the page, and the passage below. Explain to students that the blue peg shows the first number in the subtraction problem.

Note: Use number lines and pieces to demonstrate the relationship between addition and subtraction. Follow the *Hands-On Set Up* for Lesson 5.

- ▶ Read the story problem and tell students to “write or say the answer.”
- ▶ Teacher options: Use a number line and pieces to demonstrate the story problem. Change the values in the story and demonstrate those problems.

Student Book page 13

- ▶ Three options to administer the quiz are given below. Students can work together in small groups or “take” the quiz individually. Options 2 and 3 use the hands-on materials as described in the previous lesson.

Read the title of the topic quiz:

- ▶ Option 1: Students take the quiz independently without teacher support.
- ▶ Option 2: Teacher reads the word problems to the students and they circle or point to their answers. Students look at the number problems and place matching number pieces in the number line to get or verify their answers.
- ▶ Option 3: Teacher reads each problem and then demonstrates it by placing matching number pieces in the number line. Students say or write the answer. As an additional prompt, the teacher can point to the answer on the number line.

Check Subtraction with Addition

You can use addition to check the answer to a subtraction problem. Take the number you subtracted, add it to the difference, and you should get the number you started with.

In Focus

$16 - 9 = 7$
 $9 + 7 = 16$

Change these subtraction problems into addition problems.

$16 - 5 = 11$	$11 - 7 = 4$	$10 - 1 = 9$
$5 + 11 = 16$	$7 + 4 = 11$	$1 + 9 = 10$
$12 - 0 = 12$	$15 - 10 = 5$	$20 - 10 = 10$
$0 + 12 = 12$	$10 + 5 = 15$	$10 + 10 = 20$

Story Carsten likes music CDs. He has 14 in his collection. For his birthday, his friends gave him 3 more. How many CDs does Carsten have now?

$14 + 3 = 17$

12 NUMBERS
LOOK AT MATH

Add and Subtract Within 20

Quiz

<p>1</p> $\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$	<p>2</p> $5 + 7 = 12$	<p>3</p> <p>Plus or minus?</p> $12 \square 3 = 9$
<p>4</p> $\begin{array}{r} 15 \\ - 6 \\ \hline 9 \end{array}$	<p>5</p> $9 + 4 = 13$	<p>6</p> <p>Solve the problem.</p> $9 + 4 = 13$
<p>7</p> $\begin{array}{r} 20 \\ - 4 \\ \hline 16 \end{array}$	<p>8</p> $16 - 8 = 8$	<p>9</p> <p>Circle the difference.</p> $20 - 5 = 15$
<p>10</p> $\begin{array}{r} 8 \\ + 8 \\ \hline 16 \end{array}$	<p>11</p> $14 - 5 = 9$	<p>12</p> <p>Circle the sum.</p> $9 + 9 = 18$

Amy bought a bag of 12 oranges to make a fruit salad, but her brother and his friends ate 7 oranges. How many oranges were left in the bag?

$12 - 7 = 5$

LOOK AT MATH
CHAPTER 1 • ADD AND SUBTRACT
13

Add and Subtract with Three Terms Lesson 7

- ▶ **Note:** Subtraction is covered in the following lesson.

Student Book page 14

- ▶ Read the page title, image caption, and *Fun fact*. Then discuss the following points:
 - Count the number of people standing in each line.
 - The order of the terms doesn't matter in an addition problem.
- ▶ Read the exercise instructions and review the new vocabulary word: **addend**. Tell students to "first look at the picture, and then complete the answer box for each problem."

Topic 3 Add and Subtract with Three Terms

$6 + 7 + 5 = 18$

Fun fact: We use the word "term" to refer to any number in a math problem other than the answer.

Write the missing **addends** in the box.

$5 + 1 + \boxed{4} = 10$	$6 + 2 + \boxed{1} = 9$
$\boxed{5} + 4 + 7 = 16$	$9 + \boxed{3} + 8 = 20$

14 NUMBERS LOOK AT MATH

Write the sum in the box.

$6 + 4 + 9 = \boxed{19}$	$4 + 8 + 3 = \boxed{15}$
$10 + 3 + 5 = \boxed{18}$	$7 + 6 + 1 = \boxed{14}$

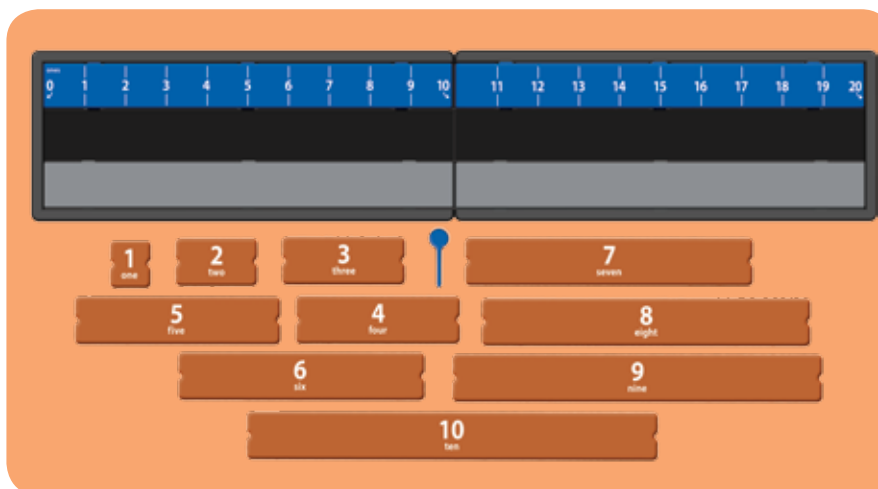
$3 + 4 + 4 = \boxed{11}$

LOOK AT MATH CHAPTER 1 • ADD AND SUBTRACT 15

Student Book page 15

- ▶ Read the exercise instructions and emphasize that these four problems are addition with three addends. Tell students to "first look at the picture, and then complete the answer box for each problem."
- ▶ Read the image caption. Then discuss the following points:
 - You can determine the sum by counting all the people standing in line.
 - It doesn't matter where you start counting as long as you count everyone—just once.

- ▶ Place the 1 to 10 and an unmarked (optional) number line in one base; and the 11 to 20 and an unmarked (optional) number line in a second base. Align the bases as shown. Place a group of tan number pieces in front of the number line. Present extra problems on a whiteboard or paper as needed. The blue peg can be used for subtraction problems in the next lesson.



HANDS-ON SET UP

Student Procedure

- ▶ **Option 1:** Solve the problem and write or say the answer. Place the number pieces in the number line to verify your work.
- ▶ **Option 2:** Look at the problem and place matching number pieces in the number line. Then write or say the answer.
- ▶ **Option 3:** Teacher reads the problem and places the matching number pieces in the number line. Students say or write the answer. As an additional prompt, the teacher can point to the answer on the number line.
- ▶ **Note:** All hands-on materials are found on the **Look at Math** flash drive. Print the number lines and number pieces to do the hands-on demonstrations.

Lesson 8 Subtract the Last Term

- ▶ **Note:** We use “term” to refer to the subtrahend and minuend. They were not selected as vocabulary words because they’re difficult to pronounce and differentiate.

Student Book page 16

- ▶ Read *In Focus*, the title of the page, and the passage below. Explain to the students that the problems below are actually two problems in one. First, find the sum of the addends. Second, subtract the last term from the sum. The blue peg reflects the sum.
- ▶ You can use number lines and pieces to demonstrate. Follow the *Hands-On Set Up* for Lesson 7.
- ▶ Read the story problem and tell students to “write or say the answer.”
- ▶ Teacher options: Use a number line and pieces to demonstrate the story problem. Change the values in the story and demonstrate those problems.

Student Book page 17

- ▶ Three options to administer the quiz are given below. Students can work together in small groups or “take” the quiz individually. Options 2 and 3 use the hands-on materials as described in the previous lesson.

Read the title of the topic quiz:

- ▶ Option 1: Students take the quiz independently without teacher support.
- ▶ Option 2: Teacher reads the word problems to the students and they circle or point to their answers. Students look at the number problems and place matching number pieces in the number line to get or verify their answers.
- ▶ Option 3: Teacher reads each problem and then demonstrates it by placing matching number pieces in the number line. Students say or write the answer. As an additional prompt, the teacher can point to the answer on the number line.

Subtract the Last Term

You can add and subtract within the same problem. In the problem below, start with 7, add 3, and subtract 6 to get the total.

$$7 + 3 - 6 = 4$$

Write the answer in the box.

$4 + 5 - 2 = \boxed{7}$	$6 + 3 - 4 = \boxed{5}$	$5 + 5 - 1 = \boxed{9}$
$3 + 7 - 8 = \boxed{2}$	$2 + 8 - 9 = \boxed{1}$	$7 + 2 - 5 = \boxed{4}$

Story Mikah was playing Pokémon. He started with 9 Pokéballs and earned 8 more. Then he used 6 to catch a Pokémon. How many Pokéballs did he have left?

$$9 + 8 - 6 = \boxed{11}$$

16 NUMBERS
LOOK AT MATH

Add and Subtract with Three Terms

Quiz

1 $10 + 2 + 7 = \boxed{19}$	2 $4 + \boxed{10} + 6 = 20$	3 True or False $8 + 3 + 3 = 14$
4 $7 + 3 - 5 = \boxed{5}$	5 $\boxed{3} + 5 + 6 = 14$	6 Circle the addends. $\boxed{3} + \boxed{2} + \boxed{5} = 10$
7 $\boxed{4} + 2 + 7 = 13$	8 $3 + 4 - 2 = \boxed{5}$	9 Write the plus or minus sign in the box. $2 + 3 \boxed{+} 3 = 8$
10 $4 + 5 - 3 = \boxed{6}$	11 $\boxed{4} + 5 + 3 = 12$	12 Write the plus or minus sign in the box. $2 + 8 \boxed{-} 4 = 6$

FRANKS HOT DOGS SANDWICH SNAKES Joe was selling hot dogs at the game. During halftime one family bought 7 hot dogs. Another family bought 6 and his teacher, Mr. Roth, bought 3. How many hot dogs did Joe sell?

$$\boxed{7} + \boxed{6} + \boxed{3} = \boxed{16}$$

LOOK AT MATH
CHAPTER 1 • ADD AND SUBTRACT
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Student Book page 18

- ▶ Read the page title and image caption. Then discuss the following points:
 - The fans in green are seated in rows of ten so they are easy to count.
 - All the fans are happy before the game starts.
- ▶ Read the exercise instructions and review the meaning of **addend**. Tell students to “first look at the picture, and then complete the answer box for each problem.”
- ▶ **Note:** This lesson introduces the use of two number lines, 10 to 100 and 1 to 10, to represent a two-digit number. For example, 41 is shown with a four piece in the 10 to 100 number line, and a one piece in the 1 to 10 number line.

Topic 4 Add and Subtract Within 100

How many fans are walking into the stands?
 $40 + 8 = 48$

Write the sum in the box.

$22 + 15 = 37$	$41 + 24 = 65$
$26 + 60 = 86$	$34 + 25 = 59$

18 NUMBERS LOOK AT MATH

Write the difference in the box.

$48 - 26 = 22$	$67 - 52 = 15$
$38 - 17 = 21$	$58 - 31 = 27$

Why do you think they are leaving?
 $48 - 8 = 40$

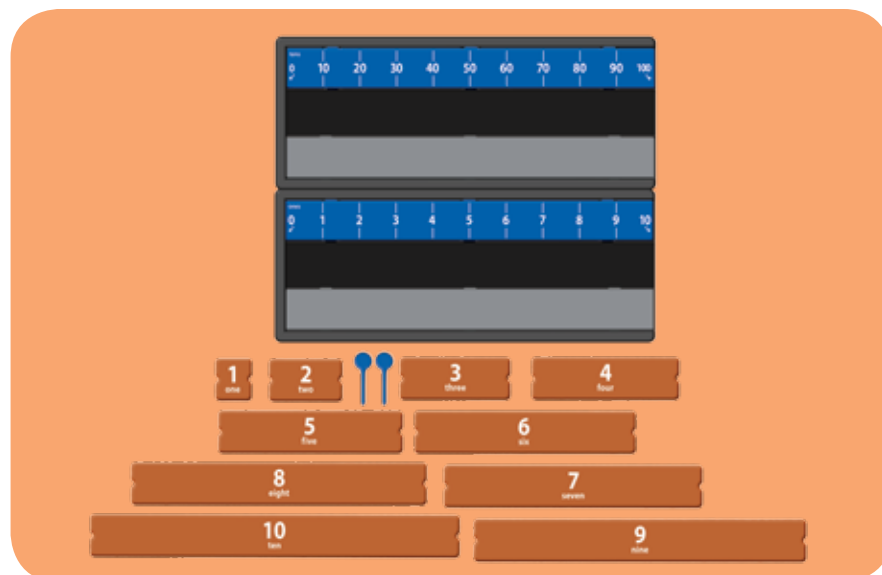
LOOK AT MATH CHAPTER 1 • ADD AND SUBTRACT 19

Student Book page 19

- ▶ Read the exercise instructions and emphasize that these four problems are subtraction. Tell students to “first look at the picture, and then complete the answer box for each problem.”
- ▶ Read the image caption. Then discuss the following points:
 - The image and problem reinforce *Lesson 6, Check Subtraction with Addition*.
 - Ask the students why they think the fans who are leaving look unhappy.

HANDS-ON SET UP

- ▶ Place the 1 to 10 and an unmarked (optional) number line in one base; and the 10 to 100 and an unmarked (optional) number line in a second base. Align the bases as shown. Place a group of tan number pieces in front of the number line. For subtraction problems, put blue pegs in the number line bases at the locations of the first term (at the 60 and 7 locations for 67). Present problems on a whiteboard or paper as needed.



Student Procedure

- ▶ **Option 1:** Solve the problem and write or say the answer. Place the number pieces in the number line to verify your work.
- ▶ **Option 2:** Look at the problem and place matching number pieces in the number line. Then write or say the answer.
- ▶ **Option 3:** Teacher reads the problem and places the matching number pieces in the number line. Students say or write the answer. As an additional prompt, the teacher can point to the answer on the number line.
- ▶ **Note:** All hands-on materials are found on the **Look at Math** flash drive. Print the number lines and number pieces to do the hands-on demonstrations.

Lesson 10 Determine Place Values for Ones and Tens

Student Book page 20

- ▶ Read *In Focus*, the title of the page, and the passage below. Review the vocabulary word: **place value**. Tell students to “first look at the picture, then write the tens and ones places for each number.”
 - You can use number lines and pieces to demonstrate. Follow the *Hands-on Set Up* for Lesson 9.
- ▶ Read the instructions for the problem on the bottom of the page. Two ways are shown to demonstrate an addition problem with 20. The first uses two number lines to form a continuous 1–20 line, as shown in Lessons 5–7. The second approach uses separate number lines to represent the tens and ones place.

Student Book page 21

- ▶ Three options to administer the quiz are given below. Students can work together in small groups or “take” the quiz individually. Options 2 and 3 use the hands-on materials as described in the previous lesson.

Read the title of the topic quiz:

- ▶ Option 1: Students take the quiz independently without teacher support.
- ▶ Option 2: Teacher reads the word problems to the students and they circle or point to their answers. Students look at the number problems and place matching number pieces in the number line to get or verify their answers.
- ▶ Option 3: Teacher reads each problem and then demonstrates it by placing matching number pieces in the number line. Students say or write the answer. As an additional prompt, the teacher can point to the answer on the number line.

Place Values

In Focus

The position of the numbers is important. In the number 23, 2 is in the tens place and 3 is in the ones place.

$20 + 3 = 23$ The sum is also written as:

tens	ones
2	3

Write the **place values** for these numbers. Put the number of tens in the tens box and the number of ones in the ones box

tens	ones
6	3

tens	ones
7	1

tens	ones
8	3

Here are two ways to look at $10 + 2 = 12$. Fill in and compare the place values.

tens	ones
1	2

tens	ones
1	2

20 NUMBERS
LOOK AT MATH

Add and Subtract Within 100

Quiz

1

$$\begin{array}{r} 55 \\ - 33 \\ \hline \end{array}$$

2

$$\begin{array}{r} 27 \\ + 52 \\ \hline \end{array}$$

3

$$\begin{array}{r} 28 \\ + 41 \\ \hline \end{array}$$

4

$$\begin{array}{r} 65 \\ + 21 \\ \hline \end{array}$$

5

$$\begin{array}{r} 68 \\ - 33 \\ \hline \end{array}$$

6

$$\begin{array}{r} 36 \\ - 11 \\ \hline \end{array}$$

7

$$\begin{array}{r} 34 \\ + 30 \\ \hline \end{array}$$

8

$$\begin{array}{r} 47 \\ + 52 \\ \hline \end{array}$$

9

Write the place values in the boxes.

58	tens	ones
	5	8

10

Write the place values in the boxes.

49	tens	ones
	4	9

11

Write the place values in the boxes.

30	tens	ones
	3	0

12

Write the place values in the boxes.

18	tens	ones
	1	8

Here is the final score of the game. By how many points did the Packers defeat the Vikings?

37	-	13	=	24
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LOOK AT MATH
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