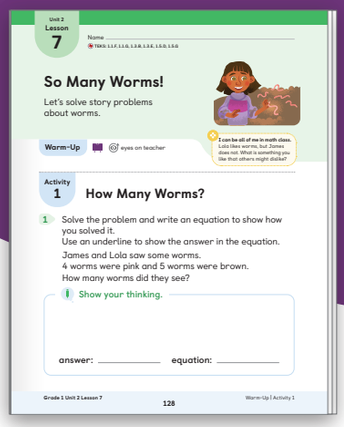
Unit 2
Lesson
7

Student Edition pages and Presentation Screens support learning in this lesson.



So Many Worms!

Representing and Solving *Put Together/Take Apart, Total Unknown* Story Problems

Let's solve story problems about worms.

Key Concepts

Today's Goals

1. **Goal:** Represent and solve *Put Together/Take Apart, Total Unknown* story problems.
2. **Language Goal:** Justify why addends can be represented and added in any order. **(Listening and Speaking)** ELPS 1.E, 2.E, 2.F

Connections and Coherence

Students represent and solve a *Put Together/Take Apart, Total Unknown* story problem —a familiar problem type from Kindergarten — and attend to where the 2 parts and the total are located in their representations. Then they determine whether one or both of 2 given equations represent a *Put Together/Take Apart, Total Unknown* story problem to explore and make a conjecture about the Commutative Property of Addition. Students are shown a segmented tape diagram, which serves as a visual representation of the relationship between the parts of a total. They recognize that both equations represent the story problem because the numbers represent 2 parts of a total and can be added in any order. **(TEKS 1.1.F, 1.1.G)**

Note: Students are not expected to make segmented tape diagrams, although they may choose to do so with continued exposure to this math tool.

Prior Learning

In Kindergarten, students represented and solved *Put Together/Take Apart, Total Unknown* story problems. In Sub-Unit 1, students represented and solved *Add To, Result Unknown* and *Change Unknown* story problems.

Future Learning

In Lesson 8, students will compare, represent, and solve *Put Together/Take Apart, Total Unknown* and *One Addend Unknown* story problems. In Grade 2, students will be formally introduced to tape diagrams and use them to represent relationships between quantities.

Integrating Rigor in Student Thinking

- Students build their **conceptual understanding** of the structure of *Put Together/Take Apart, Total Unknown* story problems.
- Students develop **fluency** with addition and subtraction within 10.
- Students **apply** their understanding of addition to solve problems with real-world contexts.

Vocabulary

Review Vocabulary

addend

equation

TEKS

Addressing

1.5.D

Represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and **number sentences**

Also Addressing: **1.2.A, 1.3.B, 1.3.E, 1.5.G**

Math Process Standards: 1.1.C, 1.1.D, 1.1.F, 1.1.G

ELPS: 1.E, 1.F, 2.C, 2.D, 2.E, 2.F, 3.A, 3.D, 3.F, 3.G, 3.H

Building Toward

K.2.C

K.3.A

K.3.C

Building Math Identity

I can be all of me in math class.
Lola likes worms, but James does not. What is something you like that others might dislike?

Invite students to reflect on this question as they complete this lesson.

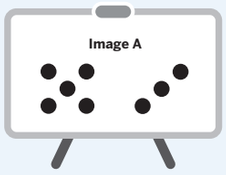
Lesson at a Glance 60 min

TEKS: 1.1.C, 1.1.D, 1.1.F, 1.1.G, 1.2.A, 1.3.B, 1.3.E, 1.5.D, 1.5.G

Warm-Up Fluency

Whole Class | 10 min

Students use the **How Many Do You See?** routine, in which they develop fluency by looking at and describing the ways they see different arrangements of dots. **(TEKS 1.1.D)**

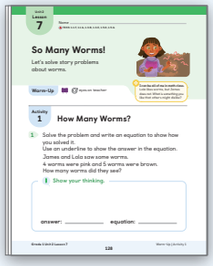


Activity 1

Independent | 15 min

Students represent and solve a *Put Together/Take Apart, Total Unknown* story problem. They share and compare representations, attending to where the 2 parts and the total are shown in different types of representations.

Manipulative Kit: connecting cubes (optional), two-color counters (optional)
Classroom Materials: classroom objects (optional)



Activity 2

Pairs | 15 min

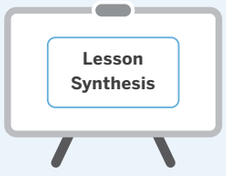
Students analyze 2 addition equations with the addends in a different order and justify whether the equations represent a *Put Together/Take Apart, Total Unknown* story problem. They recognize that 2 groups of objects, or 2 parts, have the same total regardless of the order in which they are added.

Manipulative Kit: connecting cubes (optional), two-color counters (optional)

Synthesis

Whole Class | 5 min

Students review and reflect on why mathematicians might choose to record the addends in an addition equation in an order that differs from how the addends appear in a *Put Together/Take Apart, Total Unknown* story problem.



Show What You Know (optional)

Independent | 5 min

Students demonstrate their understanding by solving a *Put Together/Take Apart, Total Unknown* problem.

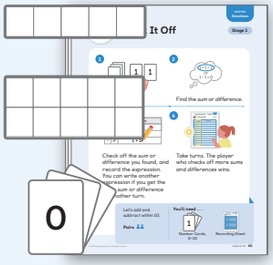
Manipulative Kit: connecting cubes, two-color counters (optional)
Materials: *Show What You Know* PDF

Center Choice Time

Small Groups | 15 min

Students have an opportunity to revisit these Centers to build fluency with addition and subtraction within 10 and to practice sorting and solving story problems.

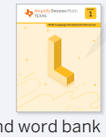
- Check It Off
- Counting Collections
- Math Stories



Math Language Development

Emergent Bilinguals

Consider using the *Math Language Development Resources* with the **Activity 2, Monitor** to support math language acquisition.



✓ Cognates
✓ Visuals
✓ Sentence frames and word bank

ELPS 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

Pre-Production	Beginning	Intermediate	High Intermediate	Advanced
Students **listen** to spoken English and **respond** using their primary languages and gestures.	Students **listen** to spoken English and **speak** using their primary languages, gestures, and single words or short phrases.	Students **listen** to spoken English and **speak** using short phrases or simple sentences.	Students **listen** to spoken English and **speak** using a variety of sentence types.	Students **listen** to spoken English and **speak** using longer sentences. Exemplar responses are provided.

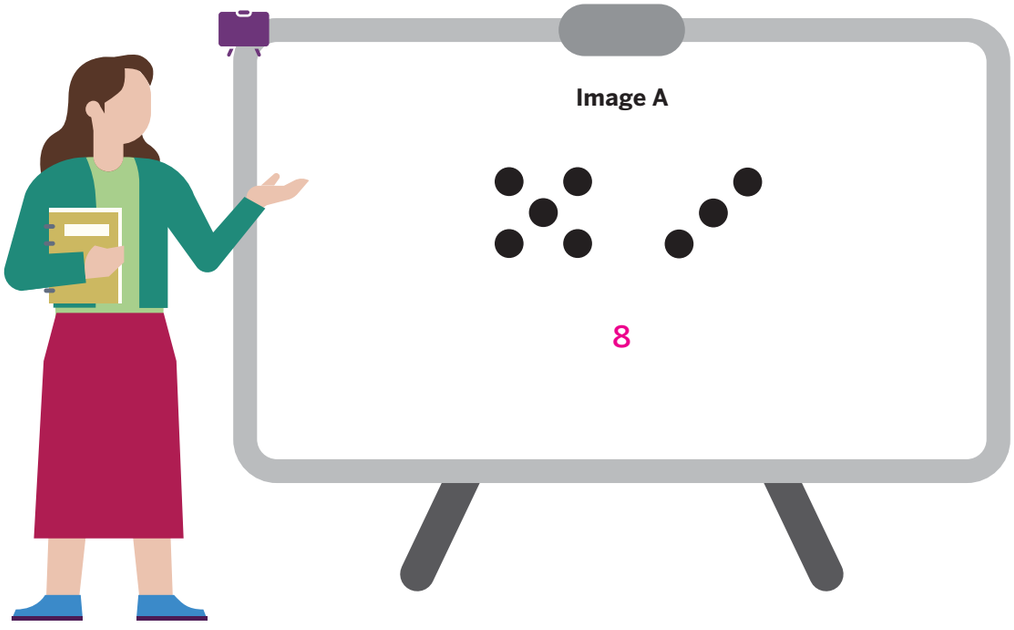
Whole Class | 10 min

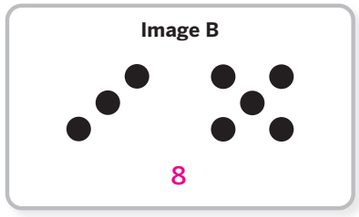
Presentation Screen

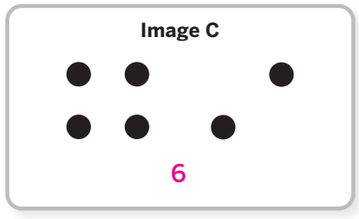
Warm-Up How Many Do You See?

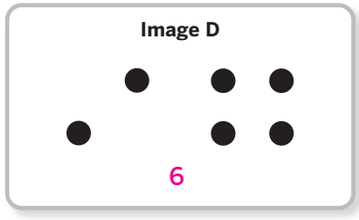
Fluency

Purpose: Students determine the number of dots to develop an understanding of the commutative property as a strategy for adding within 10.









Why these problems? These images lend themselves to using the commutative property.

1 Launch

Use the How Many Do You See? routine.

Flash the first image for 2–5 seconds, and ask, "How many do you see?"

Say, "Give me a signal when you have an answer."

Display the image again, leaving it displayed to discuss.

2 Connect

Record 2 or 3 students' responses, and ask, "How did you see them?"

Repeat for each image, spending the most time discussing Images C and D.

Ask, "How did the number of dots in Image C help you find the number of dots in Image D?"

Students might say . . . ELPS 2.C, 2.D

A: *I saw 5 and counted 3 more to get 8.*

B: *I saw 3 and counted 5 more to get 8.*

C: *I saw 4 and counted on 2 more to get 6.*

D: *I saw 2 and 4, which is the same as 4 and 2, so it's 6.*

Independent | 15 min

Activity 1 How Many Worms?

Purpose: Students represent and solve a *Put Together/Take Apart, Total Unknown* story problem to attend to where the parts and total are located in their representations.

Presentation Screens

Materials

Manipulative Kit:

- Provide students with access to connecting cubes or classroom objects and two-color counters. (optional)

Short on time? Consider solving the problem as a whole class.

1 Launch

Say, "Kainoa looked around the classroom garden. He noticed Lola studying the pink and brown worms up close as they wriggled around the garden. James stood a few steps behind Lola, peeking at the worms through his fingers."

Display the problem.

MLR **MLR6: Three Reads** ELPS 1.E, 2.F, 3.A, 3.F, 3.G, 3.H

Use this support to help build reading comprehension and fluency. Read aloud the story problem 3 times.

- **Read 1:** Ask, "What is the story about?"
- **Read 2:** Ask, "What are the known amounts?"
- **Read 3:** Ask, "What is the unknown amount?"

Say, "The line where you write the answer is a single line now. You will write the full answer — the number and label — on the line."

Provide access to connecting cubes, two-color counters, or classroom objects.

2 Monitor

While students complete the activity, refer to the D Differentiation | Teacher Moves table on the following page.

If students need help getting started . . .

- Ask, "What are you trying to find?"
- Ask, "How could you use objects or drawings to represent the known amounts?"

3 Connect

Invite students to share their equations and drawings and explain where the 2 parts and total are represented. Select and sequence their responses in the order shown in the *Differentiation* table. Keep all 3 representations displayed.

EB **Emergent Bilinguals:** Annotate the problem as students share how they represented the 2 groups. For example, if a student says, "I know there are 2 pink worms," highlight the phrase "2 worms were pink" in the story. Repeat the annotation for the brown worms. While highlighting, repeat the phrase students use to support comprehension. ELPS 3.D, 3.F, 3.G

Use the Think-Pair-Share routine. Ask, "How are these representations alike?" Invite students to share their responses with a partner before sharing with the class. Monitor students' responses for increasing specificity, such as including how each representation shows the number of each type of worm. ELPS 2.E

Key Takeaway: Say, "There are many ways to represent story problems that describe 2 groups, or 2 parts, that make a total amount."

Student Edition

Unit 2
Lesson 7

Name

TEKS: 1.1.F, 1.1.G, 1.3.B, 1.3.E, 1.5.D, 1.5.G

So Many Worms!

Let's solve story problems about worms.

I can be all of me in math class. Lola likes worms, but James does not. What is something you like that others might dislike?

Warm-Up eyes on teacher

Activity 1

How Many Worms?

1 Solve the problem and write an equation to show how you solved it.
Use an underline to show the answer in the equation.

James and Lola saw some worms.
4 worms were pink and 5 worms were brown.
How many worms did they see?

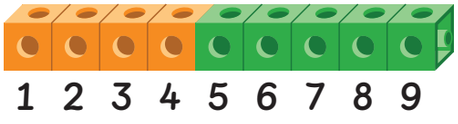
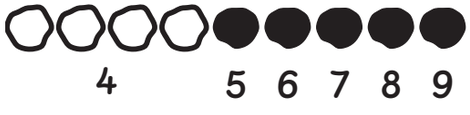
Show your thinking. Sample work and equation shown.

answer: 9 worms equation: 4 + 5 = 9

Grade 1 Unit 2 Lesson 7 128 Warm-Up | Activity 1

Presentation Screens

D Differentiation | Teacher Moves

Look for students who . . .	For example . . .	Provide support . . .
Represent the story problem with objects.		**S Strengthen** Say, "Explain how your representation matches the story problem."
Represent the story problem with a drawing.		
Represent the story problem with an equation.	4 + 5 = _ 5 ... 6, 7, 8, 9	

Pairs | 15 min

Activity 2 Two Different Equations

Purpose: Students analyze 2 addition equations to explore the commutative property and justify why more than 1 equation can represent a *Put Together/ Take Apart, Total Unknown* story problem.

Presentation Screens

Materials

Manipulative Kit:

- Provide students with access to connecting cubes and two-color counters. (optional)

1 Launch

Say, "You wrote equations to represent a story problem that describes parts that make a total. James and Lola wrote equations to represent a new story problem."

Read aloud the problem.

A **Accessibility: Conceptual processing** Guide processing by reading aloud the directions more than once. Check for understanding by inviting students to restate the directions in their own words. **ELPS 1.E, 2.C, 2.D, 2.F**

Provide access to connecting cubes and two-color counters.

2 Monitor

While students complete the activity, refer to the D **Differentiation | Teacher Moves** table on the following page.

If students need help getting started . . .

- Ask, "In your own words, what do you need to figure out?"
- Ask, "What is alike and different about the 2 equations?"

3 Connect

Invite students to share whether they agree with James or Lola and why.

Display the 2 representations.

Say, "James and Lola each drew a representation along with their equations."

Use the Think-Pair-Share routine. Ask:

- "Which representation do you think James drew and which do you think Lola drew? Why?"
- "Why can both James' and Lola's equations and drawings be used to represent the story problem?"
- "Is it always true that both equations could be used to represent story problems like this?"

Say, "Both James' and Lola's equations can be used to represent this story because changing the order of the 2 parts does not change the total amount."

Key Takeaway: Say, "You can represent the parts in any order because you can add in any order to find the total."

Student Edition

Activity 2

Name _____

Two Different Equations

Hands-On

2 James and Lola wanted to find the total number of worms in a different garden bed.

There were 3 pink worms and 4 brown worms.

James wrote 4 + 3 = 7.
Lola wrote 3 + 4 = 7.

Who do you agree with? Sample response shown.

answer: James and Lola

Show your thinking.
Sample work shown.

4 + 3 = 7

3 + 4 = 7

You can add 2 groups in any order.

Grade 1 Unit 2 Lesson 7 129 Activity 2

Presentation Screens

D Differentiation | Teacher Moves

Look for students who . . .	For example . . .	Provide support . . .
Almost there Choose the equation that matches the order of the numbers in the problem.	*I agree with Lola because the story says 3 pink worms and then 4 brown worms. So, it's 3 + 4 = 7.*	**Support** Ask, "Why do you think James wrote 4 + 3 = 7?"
Choose both equations based on the total.	*I agree with both James and Lola because both equations show 7 total.*	**Strengthen** Ask, "How do each of the equations represent the story problem?"
Choose both equations based on an understanding of the commutative property.	*I agree with both James and Lola because you can add 2 amounts in either order and you get the same total.*	**Stretch** Ask, "What is another story problem that could be represented by one or both of these equations?"

Whole Class | 5 min

Presentation Screen

Synthesis

Lesson Takeaway: To find the unknown total in a *Put Together/Take Apart* story problem, the parts can be represented in any order because addends can be added in any order.

Display and read aloud the story problem. Play the animation.
ELPS 1.F

Use the Think-Pair-Share routine. Ask, "Why might you want to record addends in a different order than the order in which the amounts appear in the story problem?"

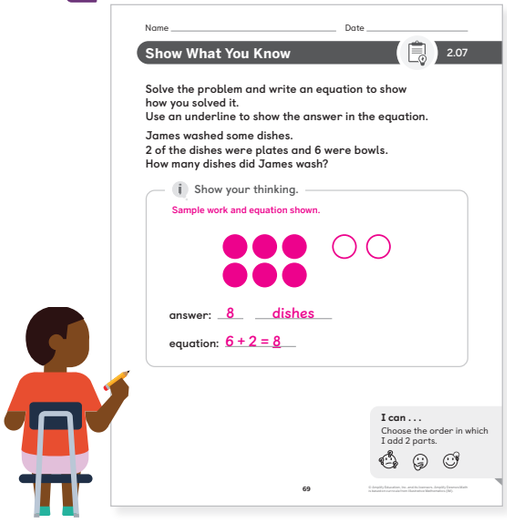
Say, "Because addends can be added in any order, you can choose the order to add that makes the most sense to you."

Invite students to refer to the **Summary** during Practice or anytime during the year.

Show What You Know (Optional)

Independent | 5 min

Show What You Know PDF


Name _____ Date _____

Show What You Know 2.07

Solve the problem and write an equation to show how you solved it.
Use an underline to show the answer in the equation.

James washed some dishes.
2 of the dishes were plates and 6 were bowls.
How many dishes did James wash?

Show your thinking.

Sample work and equation shown.

answer: 8 dishes

equation: 6 + 2 = 8

I can . . .
Choose the order in which I add 2 parts.

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Today's Goals

1. **Goal:** Represent and solve *Put Together/Take Apart, Total Unknown* story problems.
   - In the *Show What You Know,* students represented and solved *a Put Together/Take Apart, Total Unknown* story problem.
2. **Language Goal:** Justify why addends can be represented and added in any order. **(Listening and Speaking)**
   ELPS 1.E, 2.E, 2.F

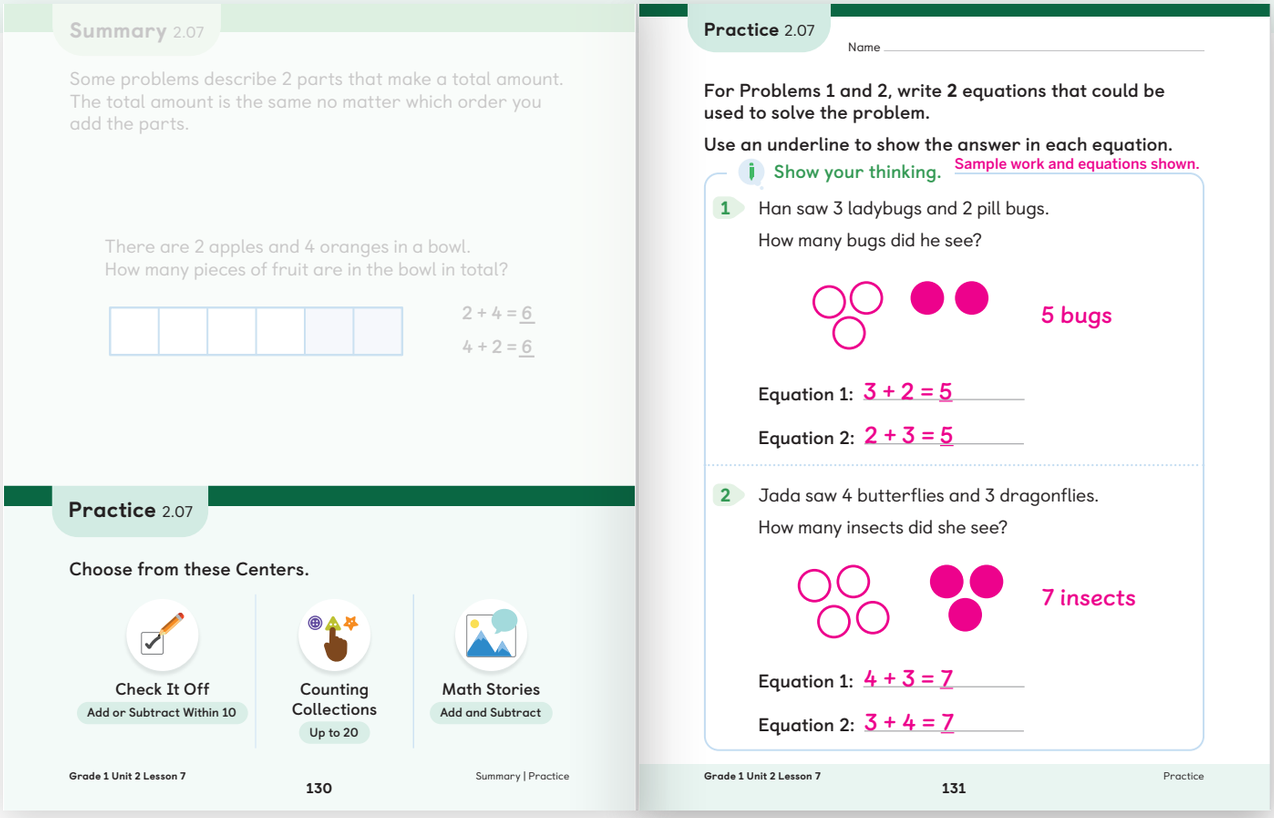
Differentiation See the last page of the lesson for differentiation and Math Language Development support.

Practice

Independent

Provide students with sufficient practice to build and reinforce their conceptual understanding, fluency, and application of mathematical topics, assessment practice, and ongoing spiral review.

Students using print



Summary 2.07

Some problems describe 2 parts that make a total amount. The total amount is the same no matter which order you add the parts.

There are 2 apples and 4 oranges in a bowl.
How many pieces of fruit are in the bowl in total?

2 + 4 = 6
4 + 2 = 6

Practice 2.07

Choose from these Centers.

Check It Off
Add or Subtract Within 10

Counting Collections
Up to 20

Math Stories
Add and Subtract

Grade 1 Unit 2 Lesson 7 130 Summary | Practice

Practice 2.07

Name

For Problems 1 and 2, write 2 equations that could be used to solve the problem.

Use an underline to show the answer in each equation.

Show your thinking. Sample work and equations shown.

1 Han saw 3 ladybugs and 2 pill bugs.
How many bugs did he see?

5 bugs

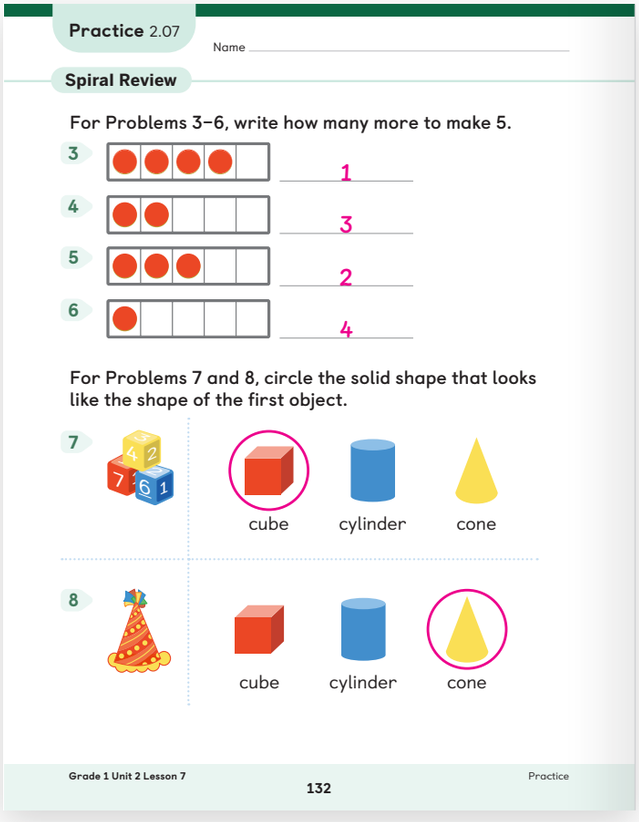
Equation 1: 3 + 2 = 5
Equation 2: 2 + 3 = 5

2 Jada saw 4 butterflies and 3 dragonflies.
How many insects did she see?

7 insects

Equation 1: 4 + 3 = 7
Equation 2: 3 + 4 = 7

Grade 1 Unit 2 Lesson 7 131 Practice



Practice 2.07

Name

Spiral Review

For Problems 3–6, write how many more to make 5.

3 1
4 3
5 2
6 4

For Problems 7 and 8, circle the solid shape that looks like the shape of the first object.

7 cube cylinder cone

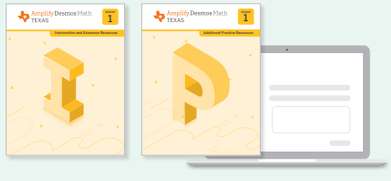
8 cube cylinder cone

Grade 1 Unit 2 Lesson 7 132 Practice

Practice Problem Item Analysis

	Problem(s)	DOK	TEKS
On-Lesson			
	1, 2	2	1.5.D
Spiral Review			
Fluency	3–6	1	K.2.I
	7, 8	1	K.6.B

Need more Practice?



Additional practice can be found in the **Practice Resources, Intervention and Extension Resources,** and online resources (item banks, Boost Personalized Learning, and Fluency Practice).

Center Choice Time

Presentation Screen

Purpose: Use this time to support students working in Centers, gather formative assessment data, or work with a small group of students on targeted skills.

Check It Off

Add or Subtract Within 10

Pairs | 15 min | 1.3.D

Students choose 2 number cards and add or subtract to make given numbers within 10.

Materials

- number cards (0–10) **(Manipulative Kit)**
- Directions, Recording Sheet **(Centers Resources)**

Corresponds with the checklist from Unit 2, Sub-Unit 1.

Counting Collections

Up to 20

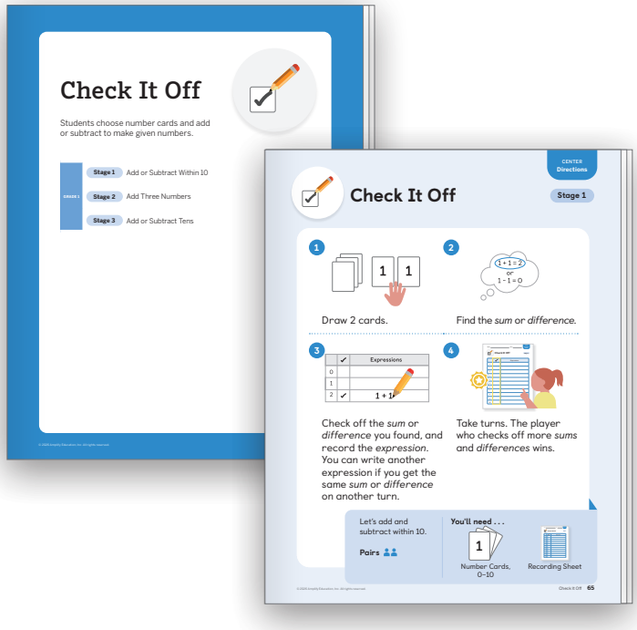
Pairs | 15 min | K.2.A, K.2.B, K.2.C

Students count a collection of up to 20 objects.

Materials

- 5-frames, 10-frames **(Manipulative Kit)**
- collections of objects (up to 20 per pair) **(Classroom materials)**
- Directions, Recording Sheet **(Centers Resources)**

Corresponds with the checklist from Unit 1, Sub-Unit 1.



Use Centers as games to offer fun and engaging ways for students to practice math skills.

GAMES

Math Stories

Add and Subtract

Pairs | 15 min | 1.3.B, 1.5.D

Students tell, represent, and solve addition and subtraction story problems about pictures.

Materials

- Directions, Recording Sheet, Math Stories Pictures (Stages 1 and 4) **(Centers Resources)**

Corresponds with the checklist from Unit 2, Sub-Unit 1.

D Differentiation | Teacher Moves

Work with students in their Centers by:

- Reinforcing Center routines and positive interactions.
- Asking probing questions to propel student thinking forward.
- Recording observations using the checklist provided.

Consider pulling a small group of students for:

- Reviewing the lesson's learning goal by using the *Mini-Lesson* or the supports provided in the lesson.
- Reviewing essential skills from prior lessons or units.

Differentiation Use after Lesson 7

Lesson Goal: Represent and solve *Put Together/Take Apart, Total Unknown* story problems.

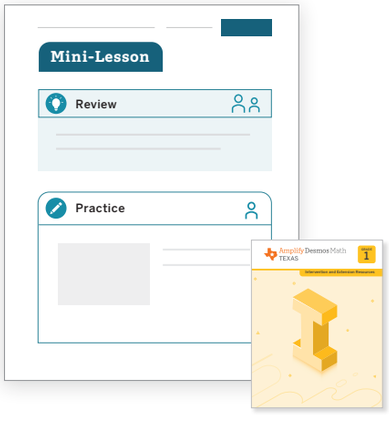
Support

Provide targeted intervention for students by using these resources.

If students: Find a total that differs from the actual total:

Respond:

- Assign the *Identifying Unknowns in Story Problems (Add To, Take From)* Mini-Lesson. | 15 min
- Invite students to discuss the problem in Activity 1 with a partner.



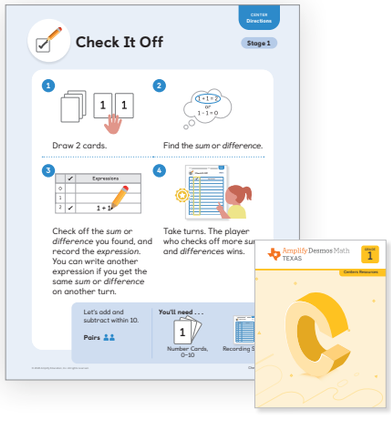
Strengthen

Reinforce students' understanding of the concepts assessed by using these resources.

If students: Solve by counting on from the smaller part:

Respond:

- Invite students to play these **Centers |** 15 min
  Check It Off: Add or Subtract Within 10
  Find the Pair: Make 10
  Math Stories: Add and Subtract
- Have students complete **Lesson 7 Practice |** 15 min
- **Item Bank**



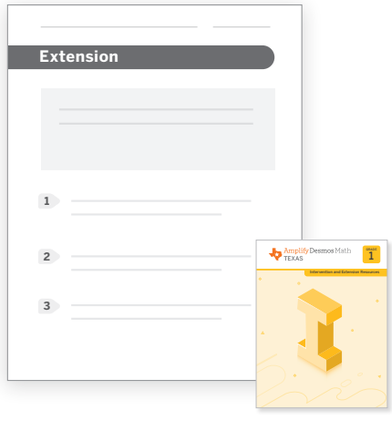
Stretch

Challenge students and extend their learning with these resources.

If students: Solve by counting on from the greater part:

Respond:

- Invite students to explore the **Sub-Unit 2 Extension Activities |** 15 min
- Revisit Activity 2 and invite students to respond to the **Stretch** question from the *Differentiation: Teacher Moves* table | 5 min



Support, *Strengthen*, and *Stretch* learning by assigning these digital resources that adjust to each student's current level of skill and understanding.
• **Boost Personalized Learning** • **Fluency Practice** • **Math Adventures**

Math Language Development

EB Use the **Math Language Development Resources** for further language support with all your students, including those building English proficiency.

- English/Spanish cognates e.g., equation/ecuacion
- Frayer Model templates
- Vocabulary routines

Professional Learning

What aspects of building a math community are going well? What aspects would you like to work on? What actions can you take to improve those areas?