

Addition and Subtraction Story Problems



Teacher Guide



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Teacher Guide

Core Knowledge Mathematics™

Unit 2: Addition and Subtraction Story Problems

At a Glance

Unit 2 is estimated to be completed in 23-24 days including 2 days for assessment.

This unit is divided into three sections including 21 lessons and 1 optional lesson.

- Section A—Add To and Take From Story Problems (Lessons 1-5)
- Section B—Put Together/Take Apart (Lessons 6-10)
- Section C—Compare Story Problems (Lessons 11-16)
- Section D—All Kinds of Story Problems (Lessons 17-22)

On pages 6-8 of this Teacher Guide is a chart that identifies the section each lesson belongs in and the materials needed for each lesson.

This unit uses eight student centers.

- Sort and Display
- Check It Off
- What's Behind My Back
- Math Stories
- Find the Pair
- Shake and Spill
- Capture Squares
- Number Puzzles: Addition and Subtraction

Unit 2: Addition and Subtraction Story Problems

Unit Learning Goals

- Students solve new types of story problems within 10 using the relationship between addition and subtraction. They develop an understanding of the meaning of the equal sign and connect story problems to equations.

In this unit, students learn to solve new types of addition and subtraction story problems and relate the quantities in the stories to equations.

In kindergarten, students solved a limited number of types of story problems within 10 (Add To/Take From, Result Unknown, and Put Together/Take Apart, Total Unknown, and Both Addends Unknown). They represented their thinking using objects, fingers, mental images, and drawings. Students saw equations and may have used them to represent their thinking, but were not required to do so.

Here, students encounter most of the problem types introduced in grade 1: Add to/Take From, Change Unknown, Put Together/Take Apart, Unknowns in All Positions, and Compare, Difference Unknown. The numbers are kept within 10 so students can focus on interpreting each problem and the relationship between counting and addition and subtraction. This also allows students to continue developing fluency with addition and subtraction within 10.

As they solve problems, students analyze and write equations and consider the meaning of the equal sign. They may initially see it as a prompt for the answer to a question, which makes it difficult to interpret equations such as $7 = 5 + 2$. Developing an understanding of the equal sign is particularly important in solving missing-addend problems. For example:

*There are 9 counters total.
How many counters are under the cup?*



Students may see a subtraction problem, represented by $9 - 4 = \boxed{5}$, or a missing-addend problem, represented by $4 + \boxed{5} = 9$. This work also highlights that multiple equations can often be written for each story problem.

It is more important for students to explain the relationship between the equation they wrote and the story, than for their equations to match the story or their solution method.

To help students think about the meaning of each number in an equation, a box is placed around the answer to the question in the problem. In the last section, students work with equations where an empty box represents the unknown.

In the next unit, students will solve addition and subtraction problems within 20 and work with equations with a symbol for the unknown in all positions, and further develop their fluency within 10.

Section A: Add To and Take From Story Problems

Standards Alignments

Addressing 1.MD.C.4, 1.OA.A.1, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7

Building Towards 1.OA.A.1, 1.OA.D.7, 1.OA.D.8

Section Learning Goals

- Solve Add To and Take From, Result Unknown and Add To, Change Unknown story problems.
- Understand the meaning of the equal sign.


In this section, students revisit familiar problem types (Add To and Take From) where they can physically act out the problems with objects or drawings. They work formally with equations for the first time, writing addition and subtraction equations that match story problems. They write equations such as $2 + 7 = \boxed{9}$ and learn the convention of drawing a box around the answer to the question in the story problem.

Students also work with Add To, Change Unknown problems for the first time. In writing equations to match these problems, students see that the answer to the question doesn't necessarily come after the equal sign. For example:

*Kiran has 6 books.
His friend gives him some more books.
Now, he has 8 books.*

How many books did Kiran's friend give him?

Students solve this problem by counting on from 6 to 8 and write the equation $6 + \boxed{2} = 8$ to represent the story. Students come to see counting on as a way to solve Add To, Change Unknown problems.

 PLC: Lesson 3, Activity 1, Kiran's Books

Section B: Put Together/Take Apart Story Problems

Standards Alignments

Addressing 1.NBT.A.1, 1.OA.A.1, 1.OA.B.3, 1.OA.B.4, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8

Building Towards 1.OA.B.3, 1.OA.D.7, 1.OA.D.8

Section Learning Goals

- Solve Put Together/Take Apart problems with the unknown in different positions.
- Write equations to represent problems.

In this section, students solve Put Together/Take Apart problems in which the total, one addend, or both addends are unknown. This builds on work from kindergarten when students composed numbers up to 10 in different ways.

Students consider problems in the context of Shake and Spill, a game that uses two-color counters. For example:

*Elena is playing Shake and Spill. She has 7 counters.
What are some ways to show some red and some yellow?*



This problem type enables students to see the same situation represented by different equations, such as those where the total is written before the equal sign ($7 = 4 + 3$) and those illustrating the commutative property ($4 + 3 = 7$ and $3 + 4 = 7$). When students analyze and connect quantities in story problems with the structure of equations, they are thinking quantitatively and abstractly (MP2).

Note that students do not need to use the terms “commutative property” or “associative property.” These are referred to as the “add in any order” property.

   PLC: Lesson 9, Activity 1, Solve and Represent Story Problems

Section C: Compare Story Problems

Standards Alignments

Building On	1.OA.A.1
Addressing	1.MD.C.4, 1.OA.A.1, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7
Building Towards	1.OA.A.1

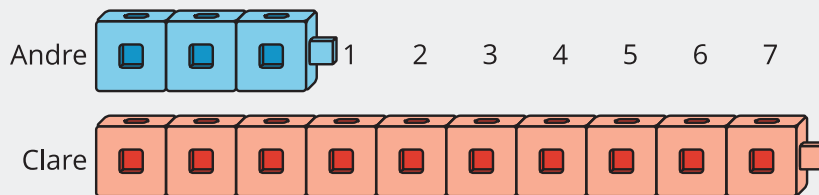
Section Learning Goals

- Relate addition and subtraction.
- Solve Compare, Difference Unknown problems.

In this section, students solve Compare, Difference Unknown problems, reinforcing their understanding of the relationship between addition and subtraction.

Students begin by considering how many to add to a quantity to make the two quantities equal, such as, "How many cubes do we need to add so that both towers have the same number of cubes?"

Once they are familiar with this language, students answer "how many more" and "how many fewer" questions. For example, "How many more cubes does Clare have than Andre?"



In this case, students may count the extra cubes in Clare's tower to find the answer. They may start at 3 and count up to 10 or start at 10 and count back to 3. Students analyze both addition ($3 + 7 = 10$) and subtraction ($10 - 3 = 7$) equations that can be used to represent the same problem.

When students reason about questions, quantities, and relationships in story problems and write equations to represent them, they make sense of problems to solve them (MP1) and reason quantitatively and abstractly (MP2).

 PLC: Lesson 14, Activity 1, Is It Addition or Subtraction?

Section D: All Kinds of Story Problems



Standards Alignments

Addressing 1.NBT.A.1, 1.OA.A, 1.OA.A.1, 1.OA.A.2, 1.OA.B.4, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8
Building Towards 1.OA.D.8

Section Learning Goals

- Apply understanding of the meaning of the equal sign to make sense of equations with a symbol for the unknown.
- Solve different types of story problems, limited to those learned in this unit.

In this section, students bring together the work of the unit to solve and compare a variety of problem types, write equations to represent problems, and make sense of equations with a symbol for the unknown. (They are not required to use symbols in the equations they write.) Students also reason in the other direction: writing stories and questions that correspond to given equations, and using drawings, numbers, and words to find the answers.

 ↔  PLC: Lesson 19, Activity 1, Lotería

Throughout the Unit

Number Talks are used to encourage students to develop counting on and counting back methods as they continue to develop fluency with addition and subtraction within 10. Students are introduced to new centers that support the work of this unit. Centers to revisit from previous units are also suggested in each section. Feel free to incorporate other centers that have been previously introduced based on student need and interest.

Materials Needed

LESSON	GATHER	COPY
A.1	<ul style="list-style-type: none"> • 10-frames • Connecting cubes or two-color counters 	<ul style="list-style-type: none"> • none
A.2	<ul style="list-style-type: none"> • 10-frames • Connecting cubes or two-color counters 	<ul style="list-style-type: none"> • none
A.3	<ul style="list-style-type: none"> • 10-frames • Connecting cubes or two-color counters • Materials from previous centers 	<ul style="list-style-type: none"> • none
A.4	<ul style="list-style-type: none"> • 10-frames • Connecting cubes or two-color counters • Tools for creating a visual display 	<ul style="list-style-type: none"> • none
A.5	<ul style="list-style-type: none"> • Materials from previous centers 	<ul style="list-style-type: none"> • Math Stories Stage 1 and 4 Pictures (groups of 8) • Math Stories Stage 4 Recording Sheet (groups of 2)
B.6	<ul style="list-style-type: none"> • 10-frames • Connecting cubes or two-color counters • Materials from previous centers 	<ul style="list-style-type: none"> • none
B.7	<ul style="list-style-type: none"> • 10-frames • Cups • Two-color counters 	<ul style="list-style-type: none"> • Shake and Spill Stage 3 Recording Sheet Grade 1 (groups of 1)

B.8	<ul style="list-style-type: none">● 10-frames● Cups● Two-color counters	<ul style="list-style-type: none">● Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2) (groups of 1)
B.9	<ul style="list-style-type: none">● 10-frames● Connecting cubes or two-color counters● Materials from a previous activity● Tools for creating a visual display	<ul style="list-style-type: none">● none
B.10	<ul style="list-style-type: none">● 10-frames● Colored pencils or crayons● Connecting cubes or two-color counters● Materials from previous centers● Number cubes	<ul style="list-style-type: none">● Capture Squares Stage 1 Gameboard (groups of 2)
C.11	<ul style="list-style-type: none">● Connecting cubes in towers of 10 and singles	<ul style="list-style-type: none">● none
C.12	<ul style="list-style-type: none">● Connecting cubes or two-color counters	<ul style="list-style-type: none">● none
C.13	<ul style="list-style-type: none">● Connecting cubes or two-color counters	<ul style="list-style-type: none">● none
C.14	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Materials from previous centers	<ul style="list-style-type: none">● none
C.15	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Materials from previous centers	<ul style="list-style-type: none">● none

C.16	<ul style="list-style-type: none">● Colored pencils or crayons● Connecting cubes or two-color counters● Materials from previous centers● Number cards 0–10	<ul style="list-style-type: none">● Capture Squares Stage 2 Gameboard (groups of 2)
D.17	<ul style="list-style-type: none">● Tools for creating a visual display	<ul style="list-style-type: none">● Story Problem Cards Grade 1 (groups of 2)
D.18	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Materials from a previous lesson	<ul style="list-style-type: none">● Equation Cards Grade 1 (groups of 2)● Story Problem Cards Grade 1 (groups of 2)
D.19	<ul style="list-style-type: none">● Connecting cubes or two-color counters	<ul style="list-style-type: none">● none
D.20	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Materials from previous centers	<ul style="list-style-type: none">● none
D.21	<ul style="list-style-type: none">● Materials from previous centers	<ul style="list-style-type: none">● Number Puzzles Addition and Subtraction Stage 1 Gameboard (groups of 2)● Number Puzzles Digit Cards (groups of 2)
D.22	<ul style="list-style-type: none">● Materials from a previous activity● Materials from a previous lesson	<ul style="list-style-type: none">● Revisit Data (groups of 1)

Center: Sort and Display (1–3)

Stage 1: Any Way

Activities

- Grade1.2.A3.3 (supporting)
- Grade1.2.A5.2 (supporting)

Stage Narrative

Students sort 10–20 objects into two or three categories and then show how they sorted. Provide students with a group of items that will be interesting for them to work with such as:

- pattern blocks
- connecting cubes
- counters
- combination of the blocks, cubes, and counters
- sets of books

Students then show their representation to a partner and ask questions that can be answered about their collection of objects.

Standards Alignments

Addressing 1.MD.C.4

Materials to Gather

Collections of objects

Materials to Copy

Sort and Display Stage 1 Recording Sheet (groups of 1)

Additional Information

Create collections of 10–20 objects with up to three attributes by which to sort.

Center: Check It Off (K–1)

Stage 1: Add within 10

Activities

- Grade1.2.A3.3 (supporting)

Stage Narrative

Students take turns picking two number cards (0–5) to make and find the value of an addition expression. Students check off the number that represents the value of the sum (0–10) and then write the addition expression on the recording sheet.

This stage has two different recording sheets, one for kindergarten and another for grade 1. On the kindergarten recording sheet, students fill in blanks to record the expression. On the grade 1 recording sheet, students write in the full expression. Be sure to use the appropriate recording sheet with students.

Variation:

Students can roll two cubes (and treat 6 as a wild card) to provide visual support for each quantity.

Standards Alignments

Addressing 1.OA.C.5, 1.OA.C.6, K.OA.A.2

Materials to Gather

Number cards 0–10

Materials to Copy

Check It Off Stage 1 Recording Sheet Grade 1 (groups of 1), Check It Off Stage 1 Recording Sheet Grade K (groups of 1)

Stage 2: Subtract within 10

Activities

- Grade1.2.A3.3 (supporting)

Stage Narrative

Students take turns picking two number cards (0–10) to make and find the value of a subtraction expression. Students check off the number that represents the value of the difference (0–10) and then write the subtraction expression on the recording sheet.

Variation:

Students can choose whether to add or subtract after picking two number cards.

Standards Alignments

Addressing 1.OA.C.5, 1.OA.C.6, K.OA.A.2

Materials to Gather

Number cards 0–10

Materials to Copy

Check It Off Stage 2 Recording Sheet (groups of 1)

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.5.A

Center: What's Behind My Back (K-2)

Stage 2: 10 cubes

Activities

- Grade1.2.A3.3 (supporting)
- Grade1.2.B6.3 (supporting)
- Grade1.2.C15.3 (supporting)
- Grade1.2.C16.2 (supporting)
- Grade1.2.D20.3 (supporting)
- Grade1.2.D21.2 (supporting)

Stage Narrative

Students work with 10 cubes. One partner snaps the tower and puts one part behind their back and shows the other part to their partner. Their partner figures out how many cubes are behind their back.

This stage has two different recording sheets, one for kindergarten and another for grade 1. Be sure to use the appropriate recording sheet with students.

On the kindergarten recording sheet, students draw or color the connecting cube tower to show the two parts that the tower broke into and fill in an equation to show the total number of connecting cubes in the tower and the two parts that the tower was broken into.

On the grade 1 recording sheet, students record an addition equation with a blank to represent the missing cubes.

Standards Alignments

Addressing 1.OA.B.4, 1.OA.C.6, K.OA.A.4

Materials to Gather

10-frames, Connecting cubes

Materials to Copy

What's Behind My Back Stage 2 Recording Sheet
Grade 1 (groups of 1), What's Behind My Back
Stage 2 Recording Sheet Kindergarten (groups of 1)

Additional Information

Each group of 2 needs 10 connecting cubes.

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.5.A
- Kindergarten.5.B
- Kindergarten.5.C

Stage 2

Addressing

- Kindergarten.5.C

Center: Math Stories (K–2)

Stage 4: Add and Subtract

Activities

- Grade1.2.A5.1 (addressing)
- Grade1.2.A5.2 (addressing)
- Grade1.2.B6.3 (addressing)
- Grade1.2.B10.2 (addressing)
- Grade1.2.C14.3 (addressing)
- Grade1.2.C16.2 (addressing)
- Grade1.2.D21.2 (addressing)

Stage Narrative

Students pose and solve addition and subtraction story problems about pictures. Students write an equation to represent their story problem.

Variation:

Pages of picture books can also be offered to help students generate stories.

Standards Alignments

Addressing 1.OA.A.1, 1.OA.A.2

Materials to Copy

Math Stories Stage 1 and 4 Pictures (groups of 8),
Math Stories Stage 4 Recording Sheet (groups of 2)

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.2.B
- Kindergarten.2.C
- Kindergarten.2.D

Supporting

- Kindergarten.4.B
- Kindergarten.4.C
- Kindergarten.5.B

Stage 2

Addressing

- Kindergarten.4.B
- Kindergarten.4.C

Supporting

- Kindergarten.5.B

Stage 3

Addressing

- Kindergarten.5.B

Center: Find the Pair (K–1)

Stage 2: Make 10

Activities

- Grade1.2.A5.2 (supporting)
- Grade1.2.B6.3 (supporting)

Stage Narrative

Partner A asks their partner for a number that would make 10 when added to the number on one of their cards. If Partner B has the card, they give it to Partner A. If not, Partner A chooses a new card. When students make the target number 10, they put down those two cards and write an equation to represent the combination. Students continue playing until one player runs out of cards. The player with the most pairs wins.

Standards Alignments

Addressing 1.OA.C.6, K.OA.A.4

Materials to Gather

10-frames, Connecting cubes or counters, Number cards 0–10

Materials to Copy

Find the Pair Stage 2 Recording Sheet (groups of 1)

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.6.A
- Kindergarten.6.B

Supporting

- Kindergarten.7.A

Stage 2

Addressing

- Kindergarten.6.C

Supporting

- Kindergarten.7.A

Center: Shake and Spill (K–2)

Stage 3: Represent

Activities

- Grade1.2.B7.1 (supporting)
- Grade1.2.B10.2 (supporting)
- Grade1.2.C14.3 (supporting)
- Grade1.2.C15.3 (supporting)
- Grade1.2.C16.2 (supporting)
- Grade1.2.D20.3 (supporting)

Stage Narrative

Students decide together how many counters to use (up to 10). One partner spills the counters. Both partners represent the red and yellow counters on the recording sheet.

This stage has two different recording sheets, one for kindergarten and another for grade 1. Be sure to use the appropriate recording sheet with students.

Standards Alignments

Addressing 1.OA.C.6, K.CC.A.3, K.OA.A.1, K.OA.A.2

Materials to Gather

Crayons, Cups, Two-color counters

Materials to Copy

Shake and Spill Stage 3 Recording Sheet Grade 1 (groups of 1), Shake and Spill Stage 3 Recording Sheet Kindergarten (groups of 1)

Additional Information

Each group of 2 needs a cup and 10 two-color counters.

Stage 4: Cover (up to 10)

Activities

- Grade1.2.B8.1 (addressing)
- Grade1.2.B10.2 (addressing)
- Grade1.2.C14.3 (addressing)
- Grade1.2.C15.3 (addressing)
- Grade1.2.C16.2 (addressing)
- Grade1.2.D20.3 (addressing)

Stage Narrative

Students decide together how many counters to use (up to 10). Partner A closes their eyes while Partner B shakes, spills, and covers up the yellow counters with a cup. Partner A determines how many counters are under the cup and explains how they know. Both partners record the round. Switch roles and repeat.

This stage has two different recording sheets, one for kindergarten and another for grade 1. Be sure to use the appropriate recording sheet with students.

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6, K.OA.A.5

Materials to Gather

Cups, Two-color counters

Materials to Copy

Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2) (groups of 1), Shake and Spill Stage 4 Recording Sheet Kindergarten (groups of 1)

Additional Information

Each group of 2 needs a cup and 10 two-color counters.

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.2.A

Supporting

- Kindergarten.3.A
- Kindergarten.4.C
- Kindergarten.5.A
- Kindergarten.5.C
- Kindergarten.7.B

Stage 2

Addressing

- Kindergarten.2.A

Supporting

- Kindergarten.3.A
- Kindergarten.4.C
- Kindergarten.5.A
- Kindergarten.5.C
- Kindergarten.7.B

Stage 3

Addressing

- Kindergarten.4.C
- Kindergarten.7.B

Supporting

- Kindergarten.5.A
- Kindergarten.5.C

Stage 4

Addressing

- Kindergarten.7.A
- Kindergarten.7.B

Center: Capture Squares (1–3)

Stage 1: Add within 10

Activities

- Grade1.2.B10.1 (addressing)
- Grade1.2.B10.2 (addressing)
- Grade1.2.C14.3 (addressing)
- Grade1.2.C15.3 (addressing)
- Grade1.2.D20.3 (addressing)
- Grade1.2.D21.2 (addressing)

Stage Narrative

Students roll two number cubes and find the sum.

Standards Alignments

Addressing 1.OA.C.6

Materials to Gather

Colored pencils or crayons, Number cubes

Materials to Copy

Capture Squares Stage 1 Gameboard (groups of 2)

Additional Information

Each group of 2 needs two number cubes.

Stage 2: Subtract within 10

Activities

- Grade1.2.C16.1 (addressing)
- Grade1.2.D20.3 (addressing)
- Grade1.2.D21.2 (addressing)

Stage Narrative

Students choose two cards and find the difference.

Standards Alignments

Addressing 1.OA.C.6

Materials to Gather

Colored pencils or crayons, Number cards 0–10

Materials to Copy

Capture Squares Stage 2 Gameboard (groups of 2)

Center: Number Puzzles: Addition and Subtraction (1–4)

Stage 1: Within 10

Activities

- Grade1.2.D21.1 (addressing)

Stage Narrative

Students work together to use digit cards to make addition and subtraction equations within 10 true. Each digit card may only be used one time on a page.

Standards Alignments

Addressing 1.OA.D.8

Materials to Copy

Number Puzzles Addition and Subtraction Stage 1
Gameboard (groups of 2), Number Puzzles Digit
Cards (groups of 2)

Section A: Add To and Take From Story Problems

Lesson 1: Story Problems and Expressions

Standards Alignments

Addressing 1.OA.A.1

Building Towards 1.OA.A.1

Teacher-facing Learning Goals

- Represent and solve Add To and Take From, Result Unknown problems in a way that makes sense to them.
- Write an expression to represent the action in a story problem.

Student-facing Learning Goals

- Let's make sense of and solve story problems.

Lesson Purpose

The purpose of this lesson is for students to represent and solve Add To and Take From, Result Unknown story problems in a way that makes sense to them. They also write an expression to represent the action in a story problem.

Students solved these problem types and wrote matching expressions in kindergarten. In these problem types, the quantities can physically be joined or separated. This action leads to the resulting quantity. In this lesson students revisit these familiar problem types, and connect them to addition and subtraction expressions. When students connect expressions back to the story problem and explain the connection, they model with mathematics (MP4).

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- 10-frames: Activity 1, Activity 2
- Connecting cubes or two-color counters: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

Reflect on the Advancing Student Thinking questions offered today. How did they support students in making sense of and solving story problems in a way that the students will be able to generalize?

Cool-down (to be completed at the end of the lesson)

 0 min

Unit 2, Section A Checkpoint

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent a story problem with objects or drawings.
- Explain how a representation matches the story.

----- Begin Lesson -----

Warm-up

🕒 10 min

Notice and Wonder: A Library

Standards Alignments

Building Towards 1.OA.A.1

The purpose of this warm-up is to elicit the idea that math is found everywhere in our world. Students look for mathematical situations in a picture of a library, which will be helpful when students solve story problems about the library in later activities. While students may notice and wonder many things about this image, noticing numbers or quantities in the image are the important discussion points.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?



Student Responses

Students may notice:

- It is a library.
- There are no people in the library.
- There are a lot of books on the shelf.

Students may wonder:

- Why aren't there any people?

Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- "Tell a math story based on the picture."
(There were two books on the shelf. Then the librarian put two more books on the shelf. How many books are on the shelf now? There are six pictures hanging from the ceiling. Three pictures fall down. How many pictures are still hanging from the ceiling?)

- How many books are there?
- Where is this library?

Activity 1

🕒 20 min

The Library

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to make sense of the structure of a Take From, Result Unknown story problem. Students have access to connecting cubes or two-color counters and 10-frames, which they may choose to use strategically to represent and solve the problem (MP5). Some students may apply the ideas from the previous unit where they related subtraction to counting back. As students share their methods, the teacher records their thinking. It is important for the teacher to focus attention on the expression during the activity synthesis. Although some students may attempt to write equations and do so accurately, this representation will be the focus in a later lesson.

Students keep their books closed for the launch of the activity, as the teacher displays and reads the problem.

Access for English Learners

MLR8 Discussion Supports. Synthesis: Display sentence frames to support whole-class discussion: “___ and ___ are the same/alike because . . .” and “___ and ___ are different because . . .”

Encourage students to use these sentence frames to compare and contrast representations.

Advances: Speaking, Conversing

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

1. Some kids were at the library.
Then some of the kids went home.

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.

What do you notice?
What do you wonder?



2. There were 9 kids at the library.
Then 2 of the kids went home.
How many kids are at the library now?
Show your thinking using drawings,
numbers, or words.

Student Responses

1. Sample responses: There are some kids at the library. I wonder how many kids are there. I wonder how many kids go home.
2. 7. Sample responses:
 - Shows 9 connecting cubes, takes 2 away and counts what's left.



- Counts back. 8, 7
- $9 - 2$

- Display the image from the warm-up.
- "This is a picture of a library. Talk to your partner about what you know and what you wonder about libraries."
- 3 minutes: partner discussion
- Share and record what students know and wonder about libraries.
- "We are going to solve a lot of story problems about libraries."
- Display and read the numberless story.
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- If not already mentioned, ask, "Are there more or fewer kids at the library after some go home?"

Activity

- Ask students to open their books.
- Read the problem with numbers.
- 2 minutes: independent work time
- "Share your thinking with your partner."
- 2 minutes: partner discussion
- Monitor for students who solve or represent the problem in the following ways:
 - objects
 - drawings
 - count back
 - an expression ($9 - 2$)

Synthesis

- Invite previously identified students to share in the order listed above.
- "How are these representations the same? How are they different?"
- If needed, display $9 - 2$.

- “How does this expression match the story problem?”

Advancing Student Thinking

If students use more or fewer than nine objects to represent the kids at the library, consider asking:

- “How did you choose how many connecting cubes to take out?”
- “There are nine kids at the library. Which connecting cubes show the nine kids? Which connecting cubes show the two kids that went home?”

Activity 2

🕒 20 min

Story Problems about the Library

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to solve Add To and Take From, Result Unknown problems in a way that makes sense to them (MP1). The problems use the same numbers in order to encourage students to think about the action in the problem and how it relates to operations. Students may represent the problems with objects or drawings, and count all, count on, or count back to solve the problems. Students write expressions and some may attempt to write equations.

During the lesson synthesis, students are re-introduced to equations. They notice how the answer to the question is represented in the equation. The teacher draws a box around the answer to signify that this part of the equation is the answer to the question.

🕒 Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method, including the tools they will use, for solving the story problems. If time allows, invite students to share their plan with a partner before they begin.

Supports accessibility for: Conceptual Processing, Organization

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

- 5 books were on a shelf.
Clare put 2 more books on the shelf.
How many books are on the shelf now?
Show your thinking using drawings, numbers, or words.

Expression: _____

- 6 books were stacked up on the table.
4 of the books fell on the floor.
How many books are still on the table?
Show your thinking using drawings, numbers, or words.

Expression: _____



- 6 kids were listening to a story.
4 more kids joined the group.
How many kids are listening to the story now?
Show your thinking using drawings, numbers, or words.

Expression: _____

- There were 5 computers turned on. The librarian turned 2 of the computers off.
How many computers are still on?
Show your thinking using drawings, numbers, or words.

Expression: _____

Student Responses

- $5 + 2$, 7. Sample response: 5, 6, 7

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or counters.

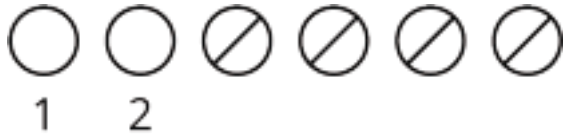
Activity

- Read the story problems.
- 6 minutes: independent work time
- "Share your thinking with your partner. Be sure that you both agree on the answer."
- 4 minutes: partner discussion

Synthesis

- Review solutions and expressions for both story problems with the numbers 5 and 2.
- "How does the expression match the story?"
- If needed ask, "What does the 5 represent? What does the 2 represent?"
- "How are these problems the same? How are they different?" (They have the same numbers, but different answers. Problem 1 is addition, problem 4 is subtraction.)

2. $6 - 4$, 2. Sample response:



3. $6 + 4$, 10. Sample response: I know $4 + 6$ is 10.
4. $5 - 2$, 3. Sample response: shows 5 fingers, closes 2 fingers and has 3 left.

Lesson Synthesis

🕒 10 min

Display the problem about books on a shelf.

“Today we wrote expressions to represent story problems. For this problem we wrote the expression $5 + 2$. Then we solved the problem. We can write an equation that shows the answer. The equation “ $5 + 2 = 7$ ” tells us that 5 plus 2 is the same amount as 7.”

“What does the 7 represent?” (the total number of books on the shelf, 5 books + 2 books)

“When we write an equation, we can draw a box around the number that shows the answer to the question. That means the equation would be written as $5 + 2 = \boxed{7}$.”

Lesson 2: Story Problems and Equations

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Building Towards 1.OA.D.7, 1.OA.D.8

Teacher-facing Learning Goals

- Solve Add To and Take From, Result Unknown problems.
- Write addition or subtraction equations to represent a story problem and orally explain why it matches.

Student-facing Learning Goals

- Let's solve story problems and write equations.

Lesson Purpose

The purpose of this lesson is to solve Add To and Take From, Result Unknown story problems, write an addition or subtraction equation to represent each story problem, and orally explain how the equation represents the story problem.

The work of this lesson connects to the previous lesson in which students represented and solved Add To and Take From, Result Unknown problems in any way they chose and wrote expressions to represent the problems. In this lesson, students write equations to match story problems, drawing a box around the result. The first activity provides an opportunity for students to make sense of stories in which the addends and results are provided, and write an equation to match. Students consider how the actions in the story problem relate to the equations they wrote. In the second activity, students represent and solve story problems, writing equations to match. In the lesson synthesis, students are asked to relate an equation with an unknown to a story problem.

The problems in this lesson continue with the library context used in the previous lesson. Consider taking photographs of the school library or a library in your community to share with students.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR6 (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- 10-frames: Activity 1, Activity 2
- Connecting cubes or two-color counters: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

As students worked in their partnerships and small groups today, whose ideas were heard, valued, and accepted? Is there a norm that could be added to encourage students to include all group members in discussions?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Books on the Shelf

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Mai put 5 books on the shelf.
Then Noah put 4 books on the shelf.
How many books are on the shelf now?
Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

9. Sample response: 5, 6, 7, 8, 9
 $5 + 4 = \boxed{9}$

----- Begin Lesson -----

Warm-up

🕒 10 min

Number Talk: Adding 1 More

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for related expressions where an addend is 1 more than in the previous expression. These understandings help students develop fluency and will be helpful later in this lesson when students add within 10. When students notice how adding 1 to an addend increases the sum by 1 they are noticing a pattern and making use of structure (MP7).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $5 + 1$
- $5 + 2$
- $6 + 2$
- $7 + 3$

Student Responses

- 6: I counted 5, 6.
- 7: It is 1 more than the first expression.
- 8: If $5 + 2$ is 7 then $6 + 2$ is 8. I added 1 to an addend, so I add 1 to the sum.
- 10: Each number is one more than the expression above, so I added 2 more to 8.

Launch

- Display one expression.
- “Give me a signal when you have an answer and can explain how you got it.”
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- “How is the second expression the same as the first expression? How is it different?” (The first addend is 5, but the second addend adds 1.)
- “How is the sum of the second expression different?” (The sum is 1 more than the first.)

Activity 1

🕒 15 min

Write Equations

Standards Alignments

Addressing	1.OA.A.1
Building Towards	1.OA.D.7, 1.OA.D.8

The purpose of this activity is for students to write equations that match the story problems. The story problems are written with all three quantities revealed so students can focus on making sense of the problem, determine the operation, and write a matching equation. When students connect the quantities in a story problem to an equation, they reason abstractly and quantitatively (MP2).

🕒 Access for Students with Disabilities

Representation: Internalize Comprehension. Synthesis: Invite students to identify which details were the most important to solve the problems. Display the sentence frame, “The next time I solve a story problem, I will pay attention to . . .”

Supports accessibility for: Attention, Conceptual Processing

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

- 7 people were working on the computers.
3 more people came to the computers.
Now 10 people are working on the computers.



Equation:

- A group of kids was using 10 puppets to act

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.
- Display images of libraries, including any taken of your school or community library.
- “What are some things you can do in a library?”
- 30 seconds: quiet think time
- 1 minutes: partner discussion
- Share and record responses.

out a story.
They put 5 of the puppets away.
Now they have 5 puppets left.

Equation: _____

3. 5 people came to story time.
Then 4 more people joined.
Now there are 9 people at story time.



Equation:

4. 8 students were doing homework at a table.
3 of the students finished their homework
and left the table.
Now there are 5 students at the table.

Equation: _____

Student Responses

1. $7 + 3 = 10$
2. $10 - 5 = 5$
3. $5 + 4 = 9$
4. $8 - 3 = 5$

- "We are going to work with more stories about the library today."

Activity

- "Listen to each story and write an equation to match."
- Read each problem aloud.
- 3 minutes: independent work time
- "Share your equations with your partner. Be sure to discuss how each equation matches the story."
- 3 minutes: partner discussion

Synthesis

- Display the equation that matches the first story problem.
- "How does this equation match the story?"
- Repeat for each problem as time allows.
- Explain that none of the numbers in these equations have a box around them because there was no question to answer in these stories.

Advancing Student Thinking

If students write an equation with an operation that does not match the story, consider asking:

- "How did you decide whether to write an addition or subtraction equation?"
- "How can you act out this story with connecting cubes? What equation matches what you did with the cubes?"

Activity 2

🕒 20 min

Solve and Write Equations

Standards Alignments

Addressing	1.OA.A.1
Building Towards	1.OA.D.7, 1.OA.D.8

The purpose of this activity is for students to solve and write equations to match Add To and Take From, Result Unknown story problems. Students make sense of and represent each story problem in a way that makes sense to them (MP1). Students should have access to connecting cubes or two-color counters. They may use objects or drawings to represent and solve the problems. They may use known addition or subtraction facts to solve the problems. Students write an addition or subtraction equation to match each story problem and explain how it matches. Each equation should include a box around the answer to the problem. The most important thing is for students to be able to relate the numbers in the equation to the different parts of the story (MP2).

Access for English Learners

MLR6 Three Reads. Keep books or devices closed. To launch this activity, display only the first problem stem, without revealing the question. “We are going to read this story problem three times.” After the 1st Read: “Tell your partner what happened in the story.” After the 2nd Read: “What are all the things we can count in this story?” Reveal the question. After the 3rd Read: “What are different ways we can solve this problem?” Repeat with the other three problems.
Advances: Reading, Representing

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

1. There was a stack of 6 books on the table. Someone put 4 more books in the stack. How many books are in the stack now? Show your thinking using drawings, numbers, or words.

Equation: _____
2. 9 books were on a cart. The librarian took 2 of the books and put them on the shelf. How many books are still on the cart?

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.

Activity

- "Now you will solve the problems and write equations to match. You can solve the problems in any way that makes sense to you."
- Read problems aloud.

Show your thinking using drawings, numbers, or words.

Equation: _____

3. 2 kids were working on an art project.
7 kids join them.
How many kids are working on the art project now?
Show your thinking using drawings, numbers, or words.

Equation: _____

4. The librarian had 8 bookmarks.
He gave 5 bookmarks to kids at the library.
How many bookmarks does he have now?
Show your thinking using drawings, numbers, or words.

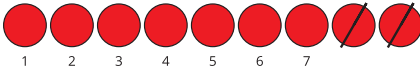
Equation: _____

- 5 minutes: partner work time
- "Find another group and discuss each problem. Share the equation you wrote and how it matches the story."
- 5 minutes: small-group discussion
- Monitor for students who wrote equations that match the stories and can explain how they match.

Synthesis

- Invite previously identified students to share the equation for each story problem.

Student Responses

1. $6 + 4 = \boxed{10}$. Sample response: I held up six fingers and then counted four more.
2. $9 - 2 = \boxed{7}$. Sample response:
- 
3. $2 + 7 = \boxed{9}$. I counted 8, 9
4. $8 - 5 = \boxed{3}$. I put up eight fingers and took five away.

Lesson Synthesis

🕒 10 min

Display the problem about bookmarks and $8 - 5 = \square$.

"Today we solved story problems and wrote equations to match the problems. We put a box around the answer to the problem in our equation. Look at this problem and this equation. What do you notice? What do you wonder?" (I notice the expression $8 - 5$ which is 3. I notice the expression matches the story problem. I see a blank box. I wonder if 3 goes in the blank box.)

If needed, ask “How does this story problem connect to the equation $8 - 5 = \square$?” ($8 - 5$ represents the 8 bookmarks the librarian had and the 5 he gives to the kids. The blank box is where the 3 goes since that is the answer to the question.)

----- **Complete Cool-Down** -----

Response to Student Thinking

The work in this lesson builds from the understanding of story problem representations developed in a prior unit.

Prior Unit Support

Grade K, Unit 4, Section B: Represent and Solve Story Problems

Lesson 3: A Change is Coming

Standards Alignments

Addressing 1.MD.C.4, 1.OA.A.1, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6

Building Towards 1.OA.D.7, 1.OA.D.8

Teacher-facing Learning Goals

- Identify the answer to a story problem in an equation.
- Solve Add To, Change Unknown story problems in a way that makes sense to them.

Student-facing Learning Goals

- Let's solve story problems and find the answer in equations.

Lesson Purpose

The purpose of this lesson is for students to solve a new type of problem, Add To, Change Unknown. They solve the problems in a way that makes sense to them and identify the answer to a story problem in an equation.

In the previous lessons students wrote equations and connected them to Add To and Take From, Result Unknown story problems. Students related the numbers in the equation to the quantities in the story. They learned to draw a box around the part of the equation that answers the question in the story problem. In this lesson students are introduced to a new type of story problem where the change is unknown. Students solve in a way that makes sense to them and identify the number that represents the answer in an equation. They notice that the answer to the problem is not always the number after the equal sign.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR7 (Activity 1)

Instructional Routines

5 Practices (Activity 1), Notice and Wonder (Warm-up)

Materials to Gather

- 10-frames: Activity 1, Activity 2

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Materials from previous centers: Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

What connections did students see between different methods? What questions did you ask to help make the connections more visible?

Cool-down (to be completed at the end of the lesson)

 0 min

Unit 2, Section A Checkpoint

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent the story with objects or drawings.
- Represent the story with equations.
- Explain how their representation matches the story.
- Answer the question correctly.

----- Begin Lesson -----

Warm-up

🕒 10 min

Notice and Wonder: Kiran's Books

Standards Alignments

Addressing 1.OA.A.1

The purpose of this warm-up is for students to make sense of the structure of a story problem, which will be useful when students solve story problems and write equations in a later activity. The problem does not have numbers, so that students can focus on the action of the problem.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

Kiran has some books.
His friend gives him some more books.



Student Responses

Students may notice:

- Kiran has some books.
- He gets some books from his friend.
- There are no numbers.
- There is no question.

Students may wonder:

- How many books does Kiran start with?
- How many books does his friend give him?
- How many books does Kiran have altogether?

Launch

- Groups of 2
- Display story problem.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- “Where might numbers fit into this story problem?” (To tell the number of books Kiran has and the number of books he gets from his friend. To tell how many books Kiran has in all.)

Activity 1

🕒 15 min

Kiran's Books

👤 ↔ 👤 PLC Activity

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to solve a new type of story problem, Add To, Change Unknown. Students may solve in any way that makes sense to them. Monitor for students who show six connecting cubes or two-color counters and add two more to make eight. Students may also draw pictures, and use words or numbers, including mental math and expressions, to represent the problem. Some students may show eight, then remove the six. This is an appropriate method for solving, but the emphasis for this lesson is on addition. Students may write an equation that matches the story problem but not be able to determine which number in the equation tells the answer. Students will practice completing equations in the next activity.

The teacher selects and sequences student work as suggested in the activity. In the activity synthesis, this work is displayed and students look at how the answer to the question is shown in different representations, including the equation. When students connect different representations and explain the connections, they model with mathematics (MP4).

🌐 Access for English Learners

MLR7 Compare and Connect. Synthesis: After all methods have been presented, lead a discussion comparing, contrasting, and connecting the different approaches. Ask, "How were the different methods the same?" and "How were they different?"

Advances: Representing, Conversing

Instructional Routines

5 Practices

Materials to Gather

10-frames, Connecting cubes or two-color counters

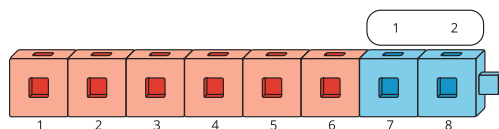
Student-facing Task Statement

Kiran has 6 books.
His friend gives him some more books.
Now he has 8 books.
How many books did Kiran get from his friend?
Show your thinking using drawings, numbers, or words.

Student Responses

8. Sample responses:

-



- 6...7, 8
- $6 + 2$

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.
- Display and read the problem.
- "This is the problem from our warm-up. What new information did you learn? What do you still wonder?" (I learned how many books Kiran had in the beginning and how many he has at the end. I still wonder how many his friend gave him.)
- 1 minute: quiet think time
- Share and record answers.

Activity

- "Now solve the problem in a way that makes sense to you."
- 2 minutes: independent work time
- "Share your thinking with your partner."
- 2 minutes: partner discussion
- Monitor and select students with the following methods to share in the synthesis:
 - show six objects, add two more, counting up to 8
 - draw six marks, draw two more, counting up to 8
 - start at 6 and count up mentally
 - write an addition expression

Synthesis

- Invite previously identified students to share in the given order.
- "Where do you see the answer to the question in each method?"
- If needed, display $6 + 2 = 8$.
- "How does this equation match this method?" ($6 + 2$ shows the number of

books Kiran has plus the number he gets from his friend. 8 is the total number of books he has.)

- "Where should we put the box in this equation? Why should we put it there?" (Put a box around the 2 because it is the answer to the problem.)

Advancing Student Thinking

If students add the six and eight instead of finding the difference, consider asking:

- "Can you explain how you solved the problem?"
- "How could you use connecting cubes to show that Kiran started with six books and ended up with eight books?"

Activity 2

🕒 10 min

Lin Represents a Story Problem

Standards Alignments

Addressing 1.OA.A.1
Building Towards 1.OA.D.7, 1.OA.D.8

The purpose of this activity is for students to make sense of an Add To, Change Unknown story problem and identify the answer within an equation. Students are presented with a drawn representation and an equation to interpret. Students consider what each number in the equation means in relation to the story problem and drawn representation (MP2). They determine that the written equation is incorrect, and explain why using their own thinking. When students practice explaining their thinking, they begin to develop and refine their mathematical communication skills, and attend to precision (MP6). Students identify that even though Mai's equation has the correct numbers she identified the wrong number as the solution to the problem (MP3).

Students keep their books closed for the launch of the activity, as the teacher displays and reads the problem.

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method, including the tools they will use, for solving the rest of the story problems. If time allows, invite students to share their plan with a partner before they begin.

Supports accessibility for: Attention, Organization

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

- Andre checked out some books from the library.
Mai gives him more books.
Now he has 9 books.

What do you notice?
What do you wonder?
- Andre checked out 3 books from the library.
Mai gives him some more books.
Now he has 9 books.
How many books did Mai give him?

Lin made this drawing.



She wrote the equation

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

Is her equation correct?
Show your thinking using drawings, number, or words.

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.
- "I am going to read another story problem. Think about what you notice and wonder about the problem as I read aloud."
- Display and read the problem with missing information.
- 30 seconds: quiet think time
- Share and record answers.

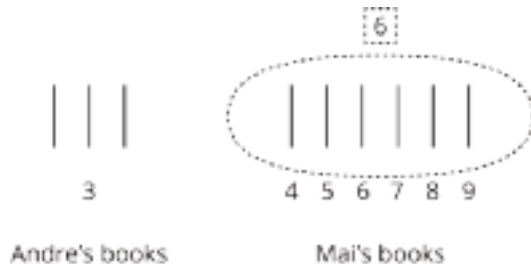
Activity

- "Now we will get more information and see how Lin solved the problem."
- Read the problem aloud.
- "Look at Lin's drawing and her equation. Think about how she solved the problem."
- 1 minute: quiet think time
- "Share your thinking with your partner. Then show whether or not you think Lin's equation is correct."
- 4 minutes: partner work time

Student Responses

No. Sample responses:

-



The answer is 6. We have to figure out how many books Mai gives Andre.

- Andre has three books to start with and ends up with nine. That means I have to add some number of books to the three he already has. 4, 5, 6, 7, 8, 9. That's six more books to give him nine books. Six is the answer.

Synthesis

- "How does Lin's drawing show the story problem?" (She shows the three books Andre starts with, and the six books she needs to get to nine.)
- "Does Lin's equation match the story? Why or why not?" (No. The answer to the problem is how many books Mai gives Andre. That answer is 6, so the equation should be $3 + \boxed{6} = 9$.)
- If needed ask, "How does this equation match the story problem?" (Andre has three books. Mai gives him six, which is the answer, so that he has nine total.)

Activity 3

🕒 15 min

Centers: Choice Time

Standards Alignments

Addressing 1.MD.C.4, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting within 10 or organizing and representing data. Students choose from any stage of previously introduced centers.

- Sort and Display
- Check it Off
- What's Behind My Back

Students will choose from these centers throughout the section. Keep materials from these centers organized to use each day.

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Sort and Display, Stage 1
 - Check it Off, Stages 1 and 2
 - What's Behind My Back, Stage 2

Student-facing Task Statement

Choose a center.

Sort and Display



Check it Off



What's Behind My Back



Launch

- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- “Jada likes to play What’s Behind My Back. She uses her fingers to figure out how many cubes are behind her partner’s back. How do you think she uses her fingers?” (She can count the cubes that her partner shows her and hold up that many fingers. Then she can see how many fingers are down and that is how many are behind her partner’s back.)
- “Why do you think Jada likes to use her fingers instead of cubes?” (With cubes you have to count out 10 first. We already know we have 10 fingers.)

Lesson Synthesis

🕒 10 min

Display $3 + 6 = \boxed{9}$ and $3 + \boxed{6} = 9$.

“Today we discussed how equations with the same numbers can mean different things. How are these equations the same? How are they different?” (Both equations show $3 + 6$ is the same amount as 9. They represent different story problems. The answer is different in each equation. How I solve each equation is different.)

Lesson 4: Result or Change Unknown

Standards Alignments

Addressing 1.OA.A.1, 1.OA.D.7

Building Towards 1.OA.D.7, 1.OA.D.8

Teacher-facing Learning Goals

- Solve Add To, Result or Change Unknown, and Take From, Result Unknown story problems.
- Write an equation and explain why it matches a story problem.

Student-facing Learning Goals

- Let's solve story problems and write equations to match.

Lesson Purpose

The purpose of this lesson is for students to solve Add To, Result or Change Unknown, and Take From, Result Unknown story problems and write equations to match each problem.

Since this lesson includes all three of the problem types introduced to the students at this point, students need to pay close attention to each problem to determine the action in the story and the question that is being asked. This lesson provides an opportunity to assess student progress on making sense of different types of story problems, the methods they use to solve, and the equations they write to match the problems.

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

True or False (Warm-up)

Materials to Gather

- 10-frames: Activity 1, Activity 2
- Connecting cubes or two-color counters:

Activity 1, Activity 2

- Tools for creating a visual display: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Reflect on points during the lesson when you learned the most about your students' thinking. What structures made those points most valuable in learning about your students? How will you use what you learned in an upcoming lesson?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Mai's Books

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Mai has 3 books.
She gets some more books from the library.
Now she has 7.
How many more books did she get?
Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

$3 + \boxed{4} = 7$. Sample response: 3 books. 4, 5, 6, 7 from the library.

----- **Begin Lesson** -----

Warm-up

 10 min

True or False: Equations with 10

Standards Alignments

Addressing 1.OA.D.7

The purpose of this True or False is to give students an opportunity to deepen their understanding of the equal sign. This is the first time that students will do this instructional routine. Because equations are new to students, the teacher should read aloud each equation. When students are more familiar with equations, they will read the equations themselves when they do this routine. In the activity synthesis, students are asked to reword another student's thinking and justify the answer in a different way (MP3).

Instructional Routines

True or False

Student-facing Task Statement

Is each statement true or false?
Be prepared to explain your reasoning.

- $10 = 10$
- $4 + 6 = 10$
- $2 + 7 = 10$

Student Responses

- True: A number equals a number. The equal sign means "the same as."
- True: $4 + 6$ is the same amount as 10.
- False: 9 is the same amount as $2 + 7$.

Launch

- Display one statement.
- "Give me a signal when you know whether the statement is true and can explain how you know."
- 1 minute: quiet think time

Activity

- Share and record answers and strategy.
- Repeat with each equation.

Synthesis

- "Who can restate ____'s reasoning in a different way?"
- "Does anyone want to add on to ____'s reasoning?"

Activity 1

🕒 15 min

Compare the Problems

Standards Alignments

Addressing 1.OA.A.1
Building Towards 1.OA.D.7, 1.OA.D.8


The purpose of this activity is for students to represent and solve an Add To, Result Unknown or Change Unknown story problem. Students then compare each problem, including how the problem is written and how the problem is solved. Each group creates a representation and writes an equation to match one of the problems. Groups then pair up to share their work. Students attend to precision and use clear and precise language to explain how they solved and represented the problem (MP6). The activity synthesis draws out differences in the story problems as well as differences in how they are solved.

Materials to Gather

10-frames, Connecting cubes or two-color counters, Tools for creating a visual display

Student-facing Task Statement

- Mai has 5 graphic novels.
She checks out 4 more.
How many graphic novels does she have?
Show your thinking using drawings, numbers, or words.

Equation: _____
- 
- Mai has 5 graphic novels.
She checks out some more.
Now she has 9 graphic novels.
How many graphic novels did she check out?

Launch

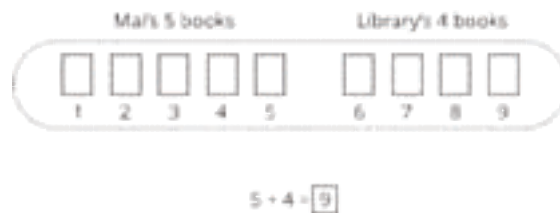
- Groups of 2
- Give students tools for creating a visual display and access to 10-frames and connecting cubes or two-color counters.
- "Today we are going to solve more story problems. The problems today are about different kinds of books. What kinds of books do you like to read?"
- 30 seconds: quiet think time
- 2 minutes: partner discussion
- Share responses.
- "Let's see what kinds of books the people in our stories like to read."

Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

1. Sample response:



2. Sample response:



Activity

- Assign each group one of the problems.
- Read the problems.
- "Make a poster that shows your answer to the problem. It must have a drawing and an equation. Be ready to explain how you solved it and how you knew what equation to write."
- 5 minutes: partner work time
- "Now find another group to work with that solved the other problem. Each group of 2 shares their poster, including how they solved the problem and how they know the equation they wrote matches the story problem."
- 4 minute: small group discussion

Synthesis

- Display both problems and student posters of how each problem was solved.
- "What differences do you see between the two story problems?" (In problem 1, we know how many books Mai checked out, but in problem 2 we don't. In problem 1 we don't know how many books she has total, but in problem 2 we do.)
- "How do these differences affect how you solve the problem?" (In problem 1, we just drew 5 books and 4 more books. Then we had to count how many there were altogether. In problem 2, we had to start with 5 books, and draw more until we had 9. Then count how many more we drew.)

Activity 2

🕒 20 min

Story Problems about Books

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to solve a variety of Add to and Take from Result or Change Unknown story problems. Students solve the story problems any way they choose and write an equation that matches the story and has a box around the answer to the question. During the activity synthesis, students consider the different ways to write equations for a story problem.

Access for English Learners

MLR8 Discussion Supports. Synthesis: For each method that is shared, invite students to turn to a partner and restate what they heard using precise mathematical language.

Advances: Listening, Speaking

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Chunk this task into more manageable parts. Check in with students to provide feedback and encouragement after each chunk.

Supports accessibility for: Social-Emotional Functioning, Attention

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

- Mai has read 3 books about dogs.
Diego gives her 4 more books to read.
How many books about dogs will Mai read all together?
Show your thinking using drawings, numbers, or words.

Equation: _____

- Noah has 4 books of poetry.
His sister gives him some more books.
Now he has 10 books of poetry.
How many books did his sister give him?
Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.
- "We are going to solve some more story problems about books other kids like to read."

Activity

- Read the problems.
- 5 minutes: independent work time
- 5 minutes: partner discussion

Equation: _____

3. Tyler has 7 books about spiders.
He gives 3 of his books to Kiran.
How many books does Tyler have left?
Show your thinking using drawings,
numbers, or words.

Equation: _____

4. Lin has 5 books about outer space.
Her teacher gives her some more books.
Now she has 10 books about outer space.
How many books did Lin's teacher give her?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Student Responses

- $3 + 4 = \boxed{7}$. Sample response. Draws 3 squares and 4 squares. Counts all.
- $4 + \boxed{6} = 10$. Sample response: Draws 4 marks. Draws 1 mark at a time, counting up to 10. Counts new marks drawn.
- $7 - 3 = \boxed{4}$. Sample response. Draws 7 circles, crosses off 3, counts remaining 4.
- $5 + \boxed{5} = 10$. Sample response: Knows that 5 and 5 makes 10.

Synthesis

- Invite students to share the equation for each problem.
- "Why is the answer in different places in our equations?" (Because in some stories we know the two numbers to add together and then the answer is the total. In other problems we know the starting number and the total and the answer is the other number we added.)

Lesson Synthesis

🕒 10 min

Display the problem about Lin's books and $5 + \square = 10$.

"Today we wrote equations to match story problems and discussed differences in the equations. Look at the problem and the equation. What do you notice? What do you wonder?" (I see a blank box. I notice the equation matches the story problem. It starts with 5, then some more are added, and that is the same amount as 10. I wonder if 5 goes in the blank box.)

If needed, ask "How does this story problem connect to the equation $5 + \square = 10$?" ($5 + \square$ represents Lin's 5 books and the number of books her teacher gives her. The 10 represents how many

books she has about outer space now. The blank box is where the 5 goes since that is the answer to the question.)

Student Section Summary

We solved story problems and represented them with objects, drawings, words, and equations.

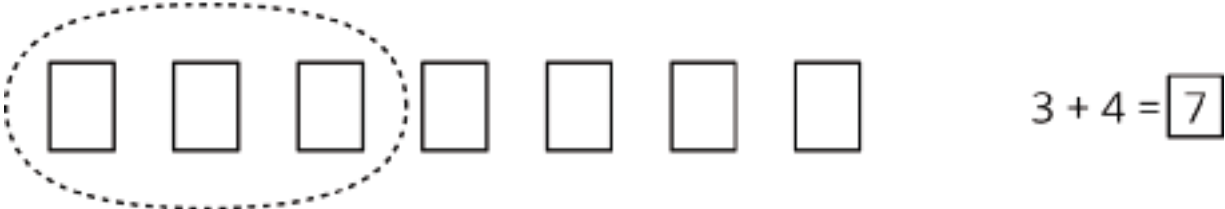
- We solved story problems with addition.

Mai has read 3 books about dogs.

Diego gives her 4 more books to read.

How many books about dogs will Mai read all together?

3 books Mai read 4 more books



$3 + 4 = \boxed{7}$

- We solved story problems with subtraction.

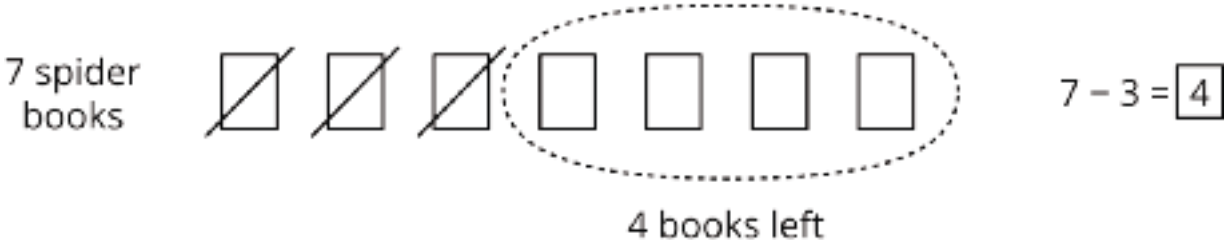
Tyler has 7 books about spiders.

He gives 3 to Kiran to read.

How many books does Tyler have left?

3 books to Kiran

7 spider books



$7 - 3 = \boxed{4}$

4 books left

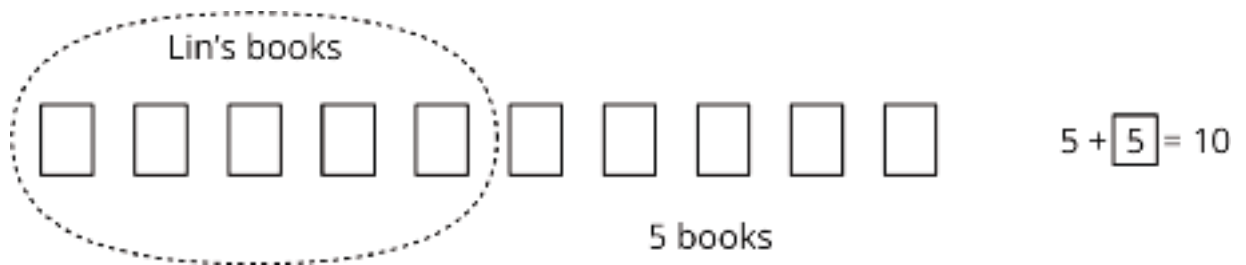
- We solved story problems where the change was unknown.

Lin has 5 books.

Her teacher gives her some more books.

Now she has 10 books to read.

How many books did her teacher give her?



- We learned that the equal sign means “the same amount as” and “equals.”

Lesson 5: Center Day 1

Standards Alignments

Addressing 1.MD.C.4, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6

Teacher-facing Learning Goals

- Add and subtract within 10.
- Tell and solve math stories based on a representation.

Student-facing Learning Goals

- Let's play games to practice adding and subtracting.

Lesson Purpose

The purpose of this lesson is for students to tell and solve story problems, and add and subtract within 10.

In Activity 1, students pose and solve addition and subtraction story problems based on pictures. Students have repeated practice telling story problems as well as writing equations to represent the problems. During Center Choice Time, students choose an activity to work on that focuses on addition and subtraction within 10.

Access for:

Students with Disabilities

- Engagement (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Materials from previous centers: Activity 2

Materials to Copy

- Math Stories Stage 1 and 4 Pictures (groups of 8): Activity 1
- Math Stories Stage 4 Recording Sheet (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	25 min
Lesson Synthesis	10 min

Teacher Reflection Question

What do you love most about math? How are you sharing that joy with your students and encouraging them to think about what they love about math?

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

Notice and Wonder: Math Picture

Standards Alignments

Addressing 1.OA.A.1

The purpose of this warm-up is to elicit the idea that students can create stories from a picture, which will be useful when students tell their own story problems in a later activity.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

Launch

- Groups of 2
- Display the image.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion



Student Responses

Students may notice:

- There are 5 books on the table.
- The child is carrying 4 books.
- There are 9 books altogether.

Students may wonder:

- Is the child adding the books to the pile or taking them away?
- How many books are there?
- What are the books about?

- Share and record responses.

Synthesis

- “What story could we tell about this picture?”
(There were 9 books on the table. Then a girl took away 4. How many books are left on the table?)

Activity 1

🕒 15 min

Introduce Math Stories, Add and Subtract

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to learn stage 4 of the center, Math Stories. Students pose and solve addition and subtraction story problems about pictures. Pages of picture books can also be used to help students generate stories. Students write an equation to represent their story problem.

Materials to Copy

Math Stories Stage 1 and 4 Pictures (groups of 8), Math Stories Stage 4 Recording Sheet (groups of 2)

Launch

- Groups of 2
- Give each group a set of pictures and recording sheets.
- "We are going to learn a new way to do the Math Stories center. You are going to look at pictures and tell addition or subtraction math stories about them, just like we did in the warm-up. After you tell the story and your partner answers the question, write an equation to match the story."

Activity

- 7 minutes: partner work time
- Monitor for a group who represented their problem with an addition equation and one who represented their problem with a subtraction equation.

Synthesis

- Invite previously identified students to share.
- "How does their equation match their story?"

Activity 2

🕒 25 min

Centers: Choice Time

Standards Alignments

Addressing 1.MD.C.4, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice organizing and representing data, telling and solving story problems, and adding and subtracting within 10.

- Sort and Display
- Math Stories
- Find the Pair

Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Use visible timers or audible alerts to help learners anticipate and prepare to transition between activities.

Supports accessibility for: Attention, Organization

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Sort and Display, Stage 1
 - Math Stories, Stage 4
 - Find the Pair, Stage 2

Student-facing Task Statement

Choose a center.

Sort and Display



Math Stories



Find the Pair

Launch

- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do first.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time
- “Choose what you would like to do next.”



- 10 minutes: center work time

Synthesis

- “What is one thing you learned or got better at by working on the center you chose?”

Lesson Synthesis

🕒 10 min

“Today we chose activities to work on and worked with a partner during center time.”

“How did you and your partner work together during centers? What went well? What can we continue to work on?”

Section B: Put Together/Take Apart Story Problems

Lesson 6: Problems about Pets

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6
Building Towards 1.OA.B.3, 1.OA.D.7

Teacher-facing Learning Goals

- Solve Put Together, Total Unknown story problems in a way that makes sense to them.
- Write an equation and explain why it matches a story problem.

Student-facing Learning Goals

- Let's solve problems and write equations.

Lesson Purpose

The purpose of this lesson is for students to solve Put Together, Total Unknown problems and write equations to match.

Put Together, Total Unknown problems have no action, and students must determine that the two addends must be joined to make the total. Students have solved Put Together, Total Unknown story problems in kindergarten as well as through data contexts in the last unit. The first activity uses the Three Reads routine to help students better understand the story problem and how the quantities are related. The second activity introduces the idea that the two addends can be written in either order and that they each represent a specific part of the story.

Access for:

Students with Disabilities

- Representation (Activity 2)

Instructional Routines

MLR6 Three Reads (Activity 1), Notice and Wonder (Warm-up)

Materials to Gather

- 10-frames: Activity 1, Activity 2
- Connecting cubes or two-color counters: Activity 1, Activity 2
- Materials from previous centers: Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Identify ways the math community you are working to foster is going well. What aspects would you like to work on? What actions can you take to improve those areas?

Cool-down (to be completed at the end of the lesson)

 0 min

Unit 2, Section B Checkpoint

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent the story with objects or drawings.
- Explain how their representation matches the story.
- Answer the question correctly.
- Represent the story with equations.

----- **Begin Lesson** -----

Warm-up

🕒 10 min

Notice and Wonder: The Fish Tank

Standards Alignments

Addressing 1.OA.A.1

The purpose of this warm-up is for students to make sense of the structure of a story problem, which will be useful when students solve story problems and write equations in a later activity. The problem does not have numbers, so the focus can remain on making sense of the problem, rather than computing.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

There are some fish in the tank.
Some of the fish are red and some are blue.

Student Responses

Students may notice:

- There are fish in the tank.
- Some of the fish are red and some are blue.
- There are no numbers.
- There is no question.

Students may wonder:

- How many fish are there?
- How many fish are red and how many are blue?
- Are there more red fish or blue fish?

Launch

- Groups of 2
- Display the statements.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- “Where might numbers fit into this story problem?” (To tell the number of red fish and the number of blue fish. To tell how many fish there are in all.)

Activity 1

🕒 15 min

Three Reads: Kiran's Fish

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is to reintroduce students to Put Together, Total Unknown story problems. In this type of problem, there is no action, so students must recognize the addends must be joined to make up the total. Students were introduced to this type of story problem in kindergarten and solved within 10 using objects or drawings. Students also solved Put Together, Total Unknown problems in Unit 1 in the context of data.

Students begin the activity by looking at the problem displayed, rather than in their books. The three reads routine gives students an opportunity to make sense of the problem before looking for a solution. Because there is no action in a put together problem, students identify the important quantities and think about how they might represent them before they solve the problem (MP1). At the end of the launch, students open their books and work on the problem. Students solve in any way they choose including using objects, drawings, words, or numbers, and write an equation to match the story problem.

This activity uses *MLR6 Three Reads*. Advances: reading, listening, representing.

Instructional Routines

MLR6 Three Reads

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

Kiran has some fish in his fish tank.
He has 4 red fish and 5 blue fish.
How many fish does he have in all?
Show your thinking using drawings, numbers, or words.

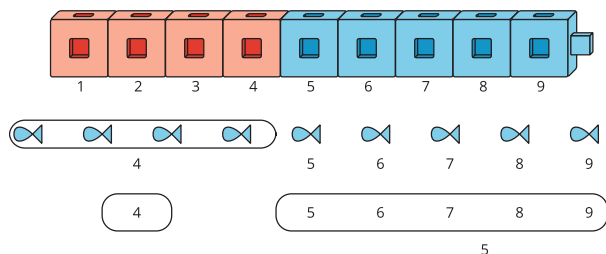
Equation: _____

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.

Student Responses

9 fish. $4 + 5 = \boxed{9}$. Sample responses:



Activity

MLR6 Three Reads

- Display only the problem stem, without revealing the question(s).
- "We are going to read this problem 3 times."
- 1st Read: "Kiran has some fish in his fish tank. He has 4 red fish and 5 blue fish."
- "What is this story about?"
- 1 minute: partner discussion
- Listen for and clarify any questions about the context.
- 2nd Read: "Kiran has some fish in his fish tank. He has 4 red fish and 5 blue fish."
- "What are all the things we can count in this story?" (the number of red fish, the number of blue fish, the total number of fish)
- 30 seconds: quiet think time
- 2 minutes: partner discussion
- Share and record all quantities.
- Reveal the question(s).
- 3rd Read: Read the entire problem, including question(s) aloud.
- "What are different ways we can solve this problem?" (I can use red and blue connecting cubes. I can draw the fish and count them.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- "Solve the problem."
- 3 minutes: independent work time
- "Share your thinking with your partner."
- 2 minutes: partner discussion
- Monitor for students who solve in the following ways and can explain their thinking clearly:

- objects or drawings and count all
- objects or drawings and count on
- numbers and count on

Synthesis

- Invite previously identified students to share in sequence above.
- After each student shares, “How does this representation match the story problem?”
- Display $4 + 5 = \boxed{9}$.
- “Where do you see the parts of this equation in this representation? The story problem?” (4 means the 4 red fish, 5 is the blue fish, 9 is how many he has altogether.)

Activity 2

🕒 10 min

Tyler's and Clare's Pets

Standards Alignments

Addressing 1.OA.A.1
Building Towards 1.OA.B.3, 1.OA.D.7

The purpose of this activity is for students to consider two different equations that represent the same story problem. Put Together, Result Unknown problems help students make sense of the commutative property because the two parts can be combined in different orders. This property, as well as the associative property, is referred to as “add in any order” to students. Students contextualize the problem and see that each number represents a specific object’s quantity, no matter which order it is presented, and connect these quantities to written symbols (MP2). Students will work more with the “add in any order” property in future lessons.

🕒 Access for Students with Disabilities

Representation: Access for Perception. Students may benefit from hearing the instructions read aloud more than once.

Supports accessibility for: Language, Attention

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

Tyler and Clare want to know how many pets they have together.

Tyler has 2 turtles.

Clare has 4 dogs.

Tyler wrote the equation $4 + 2 = \boxed{6}$.

Clare wrote the equation $2 + 4 = \boxed{6}$.

Do both equations match the story?

Why or why not?

Show your thinking using drawings, numbers, or words.

Student Responses

Yes. Sample response:

T	T	D	D	D	D
2	3	4	5	6	

$$2+4=\boxed{6}$$

D	D	D	D	T	T
	4			5	6

$$4+2=\boxed{6}$$

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.
- “We just solved a problem about pet fish. What else do you know about pets?”
- 30 seconds: quiet think time
- 1 minute: partner discussion
- If needed ask, “What kinds of pets are there?”

Activity

- Read the task statement.
- 3 minutes: independent work time
- 2 minutes: partner discussion
- Monitor for a student who uses objects or drawings to show that each equation matches the story.

Synthesis

- Invite previously identified students to share.
- “How does their work show us that Tyler’s equation matches the story?”
- “How does their work show us that Clare’s equation matches the story?”

Advancing Student Thinking

If students explain that both equations match the story using only numbers, consider asking:

- “How do you know that both equations match the story?”

- "How could you use connecting cubes to show that they both match?"

Activity 3

🕒 15 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice telling and solving story problems and adding and subtracting within 10.

- Math Stories
- Find the Pair
- What's Behind My Back

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Math Stories, Stage 4
 - Find the Pair, Stage 2
 - What's Behind My Back, Stage 2

Student-facing Task Statement

Choose a center.

Math Stories

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.



Find the Pair



What's Behind My Back



- "Think about what you would like to do."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- Display a picture from the Math Stories center or from a picture book.
- "What stories can we tell about this picture?"
- If needed, share a Put Together story with the class.

Lesson Synthesis

🕒 10 min

Display the story about fish in the tank.

"Today we saw two different equations that matched the same story. What are two equations that match this story?" ($4 + 5 = 9$ and $5 + 4 = 9$)

Use 4 red cubes and 5 blue cubes to show beginning with either one, and adding the other, leads to the same total.

Lesson 7: Shake and Spill

Standards Alignments

Addressing	1.OA.A.1, 1.OA.C.6
Building Towards	1.OA.B.3

Teacher-facing Learning Goals

- Solve Put Together/Take Apart, Both Addends Unknown story problems in a way that makes sense to them.
- Write an equation and explain why it matches a story problem.

Student-facing Learning Goals

- Let's think about breaking numbers apart and putting them back together.

Lesson Purpose

The purpose of this lesson is for students to make sense of, represent, and solve Put Together/Take Apart, Both Addends Unknown story problems. Students write equations and explain how they relate to the story problems.

This work builds on work from kindergarten when students composed and decomposed numbers in more than one way and represented these decompositions with their fingers, connecting cubes, two-color counters, drawings, and expressions. Students revisit Put Together/Take Apart, Both Addends Unknown problems through a game in which they decompose a total into two addends. Students record the decomposition with an equation. In Activity 2, students solve and represent story problems based on the context of the game, and explore the different places the total can be represented in an equation, which deepens understanding of the meaning of the equal sign.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

How Many Do You See? (Warm-up), MLR2 Collect and Display (Activity 1)

Materials to Gather

- 10-frames: Activity 2

Materials to Copy

- Shake and Spill Stage 3 Recording Sheet

- Cups: Activity 1
- Two-color counters: Activity 1, Activity 2

Grade 1 (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

What evidence have students given that they understand the meaning of the equal sign? Why is it important for students to understand the meaning of the equal sign before solving Addend Unknown problems in the upcoming lessons?

Cool-down (to be completed at the end of the lesson)

⌚ 5 min

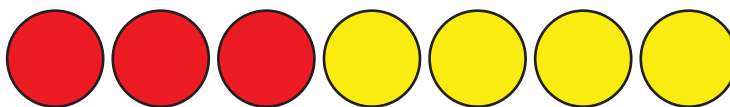
Priya Plays Shake and Spill

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Priya played Shake and Spill using 7 two-color counters. This is how her counters look.



Write an equation to match the counters.

Equation: _____

Explain how your equation matches Priya's counters.

Student Responses

$\boxed{3} + \boxed{4} = 7$, $\boxed{4} + \boxed{3} = 7$, $7 = \boxed{3} + \boxed{4}$, or $7 = \boxed{4} + \boxed{3}$. Sample response: There are 3 red and 4 yellow. Altogether that is 7 counters.

 ----- Begin Lesson -----

Warm-up

⌚ 10 min

How Many Do You See: Two-color Counters

Standards Alignments

Addressing	1.OA.C.6
Building Towards	1.OA.B.3

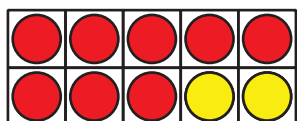
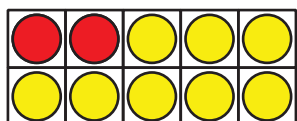
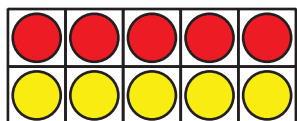
The purpose of this How Many Do You See is for students to subitize or use grouping strategies to describe the images they see. The images in the warm up are built for students to further explore the commutative property, to which they were introduced in a prior lesson. When students see that addends can be added in any order, they discern number patterns or structure (MP7).

Instructional Routines

How Many Do You See?

Student-facing Task Statement

How many do you see?
How do you see them?



Student Responses

- 10: 5 red and 5 yellow. $5 + 5 = 10$
- 10: The whole 10-frame is filled, but there are 2 red and 8 yellow.

Launch

- Groups of 2
- "How many do you see? How do you see them?"
- Flash the image.
- 30 seconds: quiet think time

Activity

- Display the image.
- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.
- If needed, "What equation represents this image?"
- Repeat for each image.

Synthesis

- "How are the last two images the same? How

- 10: It's just like the image above, but the colors are switched. It's $8 + 2 = 10$.

are they different?" (Both images could be represented with $8 + 2 = 10$ and $2 + 8 = 10$. They both show 8 and 2. One has 8 yellow and 2 red and one has 8 red and 2 yellow.)

Consider asking:

- "Who can restate the way ____ saw the dots in different words?"
- "Did anyone see the dots the same way but would explain it differently?"

Activity 1

🕒 20 min

Revisit Shake and Spill, Represent

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to revisit stage 3 of the Shake and Spill center, introduced in kindergarten. In this stage, students see a quantity broken into two parts in different ways. Student write equations to represent each decomposition. Students may write an equation in any way they choose, but the number of counters is presented first to encourage students to write the total before the equal sign. This activity builds toward a future lesson in which students solve Put Together/Take Apart, Addend Unknown story problems and write equations to match them.

During this activity, the teacher collects and displays different equations that students write for the first round. This includes equations where the total is before the equal sign, such as $9 = 7 + 2$. During the synthesis, students are encouraged to think about how an equation with the total before the equal sign relates back to the context of playing the game (MP2).

Instructional Routines

MLR2 Collect and Display

Materials to Gather

Cups, Two-color counters

Materials to Copy

Shake and Spill Stage 3 Recording Sheet
Grade 1 (groups of 1)

Required Preparation

- Each group of 2 needs 10 two-color counters and a cup (at least 8 oz).

Student-facing Task Statement

total number of counters	red counters	yellow counters	equations



Round 1:

total number of counters	red counters	yellow counters	equations
9			
9			
9			
9			
9			
9			

Student Responses

Sample response:

total number of counters	red counters	yellow counters	equations
9	2	7	$9 = 2 + 7$
9	6	3	$9 = 6 + 3$
9	1	8	$1 + 8 = 9$
9	8	1	$9 = 1 + 8$
9	7	2	$7 + 2 = 9$
9	9	0	$9 + 0 = 9$

Launch

- Groups of 2
- Give each group a cup, 10 two-color counters, and recording sheets.
- "Today we will revisit a game you played in kindergarten called Shake and Spill. Let's play one round together to make sure everyone remembers how to play."
- Display two-color counters and the cup.
- "I have some two-color counters. Let's count them together."
- Place counters in the cup as you count aloud.
- "I'm going to write 6 under Total Number of Counters."
- Demonstrate shaking and spilling the counters.
- "How many red counters are there? How many yellow counters are there?"
- 30 seconds: quiet think time
- Record responses in the table.
- "What equation can we write to match the counters?" ($4 + 2 = 6$, $6 = 4 + 2$, $2 + 4 = 6$, $6 = 2 + 4$)
- 30 seconds: quiet think time
- 30 seconds: partner discussion
- Share and record responses.
- If needed, play another round.

Activity

- "Play the game with your partner. For the first game, you will use 9 counters and record in your book. After the first game, you may choose the number of counters that you want to use, and record on the

separate recording sheet.”

- 10 minutes: partner work time
- If needed, ask “Is there another equation you can write to show this round?”
- Monitor for and collect 5–6 combinations and equations from round 1.

Synthesis

- Display collected combinations and equations.
- “What do you notice about the equations I collected during the first round?” (There are different numbers in the equations. They all equal nine. Sometimes the total is before the equation and sometimes it is after.)
- “What does the equation $9 = 7 + 2$ mean?” (The nine counter total is the same amount as seven red counters and two yellow counters or seven yellow and two red.)

Activity 2

🕒 15 min

Shake and Spill Story Problems

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to solve Put Together/Take Apart, Both Addends Unknown story problems in the context of the game they played in the previous activity. Students find different ways the red and yellow counters could look, and write equations to match each way.

During the activity synthesis, record equations in which the total is before the equal sign as well as after.

Access for English Learners

MLR8 Discussion Supports. Display sentence frames to support partner discussion: “I wrote the equation ____ because . . .” and “My picture shows . . .”

Advances: Speaking, Conversing

Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Provide choice and autonomy. In addition to two-color counters and connecting cubes, provide access to 10 frames, and red and yellow crayons or colored pencils they can use to represent and solve the story problems.

Supports accessibility for: Conceptual Processing, Organization

Materials to Gather

10-frames, Two-color counters

Student-facing Task Statement

- Elena is playing Shake and Spill.
She has 7 counters.



What are some ways to show some red and some yellow?

Show your thinking using drawings, numbers, or words.

Write an equation to show each combination.

- Tyler is playing Shake and Spill.
During his first round he spilled these counters:



Write 2 equations to show his counters.

Show other combinations of red and yellow counters that Tyler could spill.

Show your thinking using drawings, numbers, or words.

Write an equation to show each combination.

Launch

- Groups of 2
- Give students access to 10-frames and two-color counters.

Activity

- “Let’s solve some story problems about the game we just played.”
- 6 minutes: independent work time
- “Share your equations with your partner. If your partner has equations you did not write, add them to your list.”
- 4 minutes: partner discussion
- Monitor for students who showed different combinations for the problem with 10 counters.

Synthesis

- Display 4–5 equations.
- “How does each equation match the problem?”

If you have time, solve the following problems.

1. What are all the combinations Elena could have?

How do you know?

2. What are all the combinations Tyler could have?

How do you know?

Student Responses

1. Sample responses: $7 = 3 + 4$, $2 + 5 = 7$
2. Sample responses: $10 = 4 + 6$, $6 + 4 = 10$,
 $10 = 5 + 5$, $10 = 9 + 1$

If you have time:

1. $1 + 6 = 7$, $6 + 1 = 7$, $2 + 5 = 7$, $5 + 2 = 7$,
 $3 + 4 = 7$, $4 + 3 = 7$, $0 + 7 = 7$, $7 + 0 = 7$
2. $10 = 6 + 4$, $10 = 4 + 6$, $10 = 5 + 5$,
 $10 = 3 + 7$, $10 = 7 + 3$, $10 = 2 + 8$,
 $10 = 8 + 2$, $10 = 9 + 1$, $10 = 1 + 9$,
 $10 = 10 + 0$, $10 = 0 + 10$

- “What numbers in the equation should have boxes around them? Why?” (The number of red counters and the number of yellow counters. We already know the total, and have to find the combinations.)
- “Work with your partner to put a box around the answers to the question for problem 1.”

Lesson Synthesis

🕒 10 min

Display $10 = \boxed{3} + \boxed{7}$ and $\boxed{3} + \boxed{7} = 10$.

“Today we wrote equations to match the red and yellow counters in the game Shake and Spill. For one round, a student wrote these equations. How could these equations represent the game? How are they the same? How are they different?” (They are the same because they both show that $3 + 7$ equals 10. They are different because the total is before the equal sign in one equation and after the equal sign in the other equation. It means the same thing. There are either 3 red and 7 yellow or 7 red and 3 yellow.)

----- Complete Cool-Down -----

Response to Student Thinking

Students write an expression with a total other than 7 and addends other than 3 and 4.

Next Day Support

- During the launch of the first activity in the next lesson, display the image from this cool-down and ask students to share an equation that matches the image and explain how they match.

Lesson 8: Shake, Spill, and Cover

Standards Alignments

Addressing 1.NBT.A.1, 1.OA.A.1, 1.OA.C.6, 1.OA.D.8
 Building Towards 1.OA.D.8

Teacher-facing Learning Goals

- Relate different equations to the same story problem.
- Solve Put Together/Take Apart, Addend Unknown story problems in a way that makes sense to them.

Student-facing Learning Goals

- Let's solve a new kind of story problem.

Lesson Purpose

The purpose of this lesson is for students to solve and represent Put Together/Take Apart, Addend Unknown story problems.

Students solve in any way that makes sense to them and write equations to match the problems. This work builds on the work students did with other types of Put Together/Take Apart problems in previous lessons. They extend the familiar game, Shake and Spill. As students play the game in this lesson, they know the total and the number of red counters and need to figure out the number of yellow counters. Students write equations to match the context and explain how the equation relates to the problem. The focus in this lesson is on missing addend addition equations, but students may solve or represent the problems using subtraction. Subtraction equations should be accepted and will be the focus of lessons in the next section. When students recognize that a number in an equation represents a specific quantity they reason abstractly and quantitatively (MP2).

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- 10-frames: Activity 1, Activity 2
- Cups: Activity 1
- Two-color counters: Activity 1, Activity 2

Materials to Copy

- Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2) (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Are students trying new methods when they hear others during the discussion? How can you encourage students to try new methods?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Clare Plays Shake and Spill, Cover

Standards Alignments

Addressing 1.OA.A.1, 1.OA.D.8

Student-facing Task Statement

Clare played a round of Shake and Spill, Cover using 9 counters. Her counters look like this.



How many counters are under the cup?

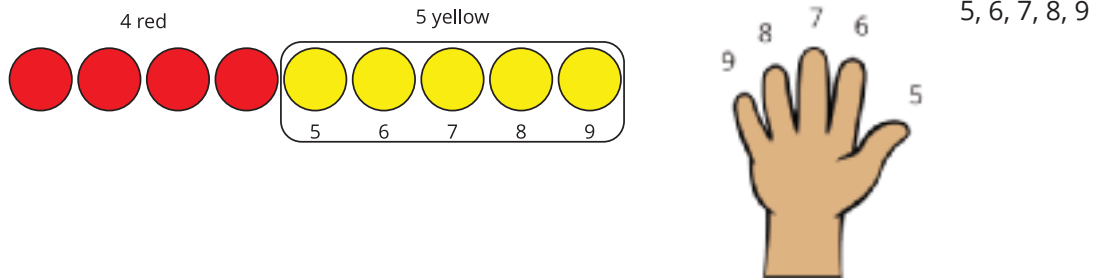
Show your thinking using drawings, numbers, or words.

Write an equation to match the counters.

Equation: _____

Student Responses

$4 + \boxed{5} = 9$. Sample responses:



Begin Lesson

Warm-up

🕒 10 min

Choral Count: Count On From 10

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this Choral Count is to invite students to count on from a number other than 1. This helps students develop fluency with the count sequence and will be helpful as students relate counting to addition and begin to make sense of the counting on method of adding.

Instructional Routines

Choral Count

Student Responses

Record the count in columns with 10, 20, 30, 40 at the top of each column.

Launch

- "Count by 1, starting at 10."

Sample response:

- When we get to a 9 then the first digit is going to change. After 19 the one becomes a 2 and the 9 goes back to 0.
- All of the numbers on the top have a zero.
- All the numbers in the second column are twenties.

- Record as students count.
- Stop counting and recording at 40.

Activity

- "What patterns do you see?"
- 1-2 minutes: quiet think time
- Record responses.

Synthesis

- "How did you know what number comes after 10? 19? 29?"

Activity 1

🕒 20 min

Introduce Shake and Spill, Cover

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to learn stage 4 of the Shake and Spill center. Students know the total number of counters and the number of red counters and have to determine the number of yellow counters. Students may use any method they choose. Students may count up from the red counters to the total using objects or drawings. Some students may subtract the number of red counters from the total. During the activity, the teacher collects and displays 4-5 student combinations of 10 from round 1 to display during the synthesis. It is important to display some equations with the total before the equal sign. In the synthesis, students relate the equations to the Shake and Spill game by circling the part of the equation that says how many yellow counters are under the cup (MP2).

🕒 Access for Students with Disabilities

Action and Expression: Develop Expression and Communication. Give students access to additional two-color counters to determine the number of yellow counters.

Supports accessibility for: Conceptual Processing, Visual-Spatial Processing

Materials to Gather

10-frames, Cups, Two-color counters

Materials to Copy

Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2) (groups of 1)

Required Preparation

- Each group of 2 needs 10 two-color counters and a cup (at least 8 oz).

Student-facing Task Statement

total number of counters	red counters	yellow counters	equations

Round 1:

total number of counters	red counters	yellow counters	equations
10			
10			
10			
10			
10			
10			

Student Responses

total number of counters	red counters	yellow counters	equation
10	6	4	$10 = 6 + 4$
10	3	7	$3 + 7 = 10$
10	5	5	$5 + 5 = 10$
10	1	9	$10 = 1 + 9$
10	8	2	$10 = 8 + 2$
10	2	8	$2 + 8 = 10$

Launch

- Groups of 2
- Give each group a cup, 10 two-color counters, recording sheets and access to 10-frames.
- Display the launch image.
- "We are going to learn a new way to play Shake and Spill. Let's play one round together. I need eight counters. Let's count together as I put the counters in the cup."
- Count out eight counters.
- "I'm going to shake and spill the counters. I am going to cover up the yellow counters with my cup before my partner sees them. Close your eyes. Keep them closed until I tell you."
- Shake the counters in the cup, spill the counters, and cover the yellow counters with your cup.
- "Open your eyes. How many yellow counters are under the cup? How do you know?"
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses and demonstrate recording the number of counters and the equation on the recording sheet.

Activity

- "For the first game you will use 10 counters and record in your book. After the first

game, you can choose how many counters you want to use, and record on the separate recording sheet."

- 10 minutes: partner work time
- As students play, collect 5–6 combinations and equations from round 1 and record them on a chart.

Synthesis

- Display 5–6 equations.
- "What does each part of the equation represent?"
- If needed, "Which part of the equation shows the answer to the question? How do you know?" (We had to find out how many yellow counters were under the cup, so the number that represents yellow.)
- "Work with your partner to draw a box around the answer in each equation."

Activity 2

🕒 15 min

Shake and Spill, Cover Problems

Standards Alignments

Addressing 1.OA.A.1
Building Towards 1.OA.D.8

The purpose of this activity is for students to represent and solve Put Together/Take Apart, Addend Unknown story problems based on the game they played in the previous activity. As students write their equations, they may write the total before the equal sign or after the equal sign. They may also use the "add in any order" property to write different equations. During the activity synthesis, students relate the equation back to the story problem, identify the missing addend, and put a box around it.

Students use two-color counters during lesson synthesis.

Access for English Learners

MLR8 Discussion Supports. Synthesis: For each equation and explanation that is shared, invite students to turn to a partner and restate what they heard using precise mathematical language.
Advances: Listening, Speaking

Materials to Gather

10-frames, Two-color counters

Student-facing Task Statement

1.



There are 9 counters total.
How many counters are under the cup?

Equation: _____

2.



There are 7 counters total.
How many counters are under the cup?

Equation: _____

3. There are 6 counters outside the cup.
Some of the counters are under the cup.
There are 10 counters total.
How many counters are under the cup?

Equation: _____

4. There are 3 counters outside the cup.
Some of the counters are under the cup.
There are 8 counters total.

Launch

- Groups of 2
- Give students access to 10-frames and two-color counters.

Activity

- “Solve these problems about some rounds of Shake and Spill, Cover. Write an equation that matches each problem. Be ready to explain your thinking in a way that others will understand.”
- 6 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for students who write these equations for problem 3:
 - $6 + 4 = 10$
 - $4 + 6 = 10$
 - $10 = 6 + 4$

Synthesis

- Invite previously identified students to share.
- “How does each number in the equation represent the story?” (10 total counters, 6 red counters, 4 yellow counters.)
- “Which part of the equation represents the answer to the question? How do you know?” (4. It’s the number of hidden

How many counters are under the cup?

Equation: _____

Student Responses

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

If a student can explain how their equation matches the story problem, it is correct regardless of what operation students use.

counters that we have to find.)

- Display $10 = 6 + \boxed{4}$.
- "Work with your partner to put a box around the part of each equation that represents the number of counters you found."

Advancing Student Thinking

If students count on beginning with the number of counters outside the cup and get an answer that is one more than the correct answer (or example, counting on from 7 to 10 with 7, 8, 9, 10 and getting an answer of 4, consider asking:

- "How did you find out how many are under the cup?"
- "How can you use two-color counters to check?"

Lesson Synthesis

🕒 10 min

Display $5 + \square = 8$

"Today we played a game where we had to find out how many counters were under our cup. We wrote equations to match the counters. How could this equation match the counters in a round of Shake and Spill, Cover?" (There are 5 red counters showing. Some yellow counters are under the cup. There are 8 total counters.)

"Find the number that makes the equation true. Show how you know." (3. I counted on from 5: 6, 7, 8. I put down 5 red counters, then added yellow counters until I got to 8. There are 3 yellow counters.)

"When we know one of the addends in an equation, we can find the other by thinking about how many more we need to get to the total."

----- **Complete Cool-Down** -----

Response to Student Thinking

Students write a number other than 5 for the number of yellow counters.

Next Day Support

- Before the launch of the next lesson, ask students to share different methods for finding the number of yellow counters under the cup.

Lesson 9: Compare Story Problems

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.3, 1.OA.D.7

Teacher-facing Learning Goals

- Solve Put Together/Take Apart problems with the result, one addend, or both addends unknown.
- Write an equation that matches the story problem, and put a box around the unknown number.

Student-facing Learning Goals

- Let's solve story problems and write equations.

Lesson Purpose

The purpose of this lesson is for students to solve the different Put Together/Take Apart story problems that have been introduced so far.

Students write equations that match the story problem, identifying where the answer to the question is in the equation. Students should have access to connecting cubes or two-color counters. In Activity 1, students work with partners to solve a story problem and write an equation. During Activity 2, students do a gallery walk within their group and compare story problems, methods for solving the problems, and equations that represent the problems.

Students do not need to master representing and solving these problem types until the end of grade 2, so the important part of this lesson is that students can make sense of the story problem and explain how their equation matches the problem.

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 1)

Instructional Routines

MLR2 Collect and Display (Activity 2), Number Talk (Warm-up)

Materials to Gather

- 10-frames: Activity 1
- Connecting cubes or two-color counters: Activity 1
- Materials from a previous activity: Activity 2
- Tools for creating a visual display: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

What opportunities are you giving students to reflect on their understanding of the mathematical content?

Cool-down (to be completed at the end of the lesson)

🕒 0 min

Unit 2, Section B Checkpoint

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent the story with objects or drawings.
- Explain how their representation matches the story.
- Answer the question correctly.
- Represent the story with equations.

----- Begin Lesson -----

Warm-up

🕒 10 min

Number Talk: Addition and Subtraction Expressions

Standards Alignments

Addressing 1.OA.B.3

The purpose of this Number Talk is to elicit strategies and understandings students have for addition and subtraction. These understandings help students develop fluency and will be helpful later in this lesson when students add and subtract to find unknowns in different positions.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $4 + 6$
- $6 + 4$
- $10 - 6$
- $10 - 4$

Student Responses

- 10: It's a ten fact.
- 10: It's the same equation as the first with the numbers reversed.
- 4: I counted back: 9, 8, 7, 6
- 6: If $10 - 6$ is 4, then $10 - 4$ is 6.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "Who can restate ____'s reasoning in a different way?"
- "Did anyone have the same strategy but would explain it differently?"
- "How are all the expressions related?"

Activity 1

🕒 20 min

Solve and Represent Story Problems

👤 ↔ 👤 PLC Activity

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to solve a variety of Put Together/Take Apart story problems with the unknown in different places. Two of the problems have the same addends and total, with the unknown in different places. The third problem has both addends unknown. Students who are assigned this problem should be encouraged to find multiple combinations for this context. Students may solve in any way that makes sense to them and write equations to match the problem. They write an equation and put a box around the number that represents the answer to the question. After drafting their answer in their books, groups create a poster that includes a labeled drawing and an equation for one of the problems.

Posters will be displayed for a gallery walk in the next activity.

🌐 Access for English Learners

MLR8 Discussion Supports. Some students may benefit from the opportunity to act out the scenario. Listen for and clarify any questions about the context of each problem.

Advances: Speaking, Representing

Materials to Gather

10-frames, Connecting cubes or two-color counters, Tools for creating a visual display

Student-facing Task Statement

- Han has 5 lizards.
He has 3 snakes.
How many pets does he have?



Show your thinking using drawings, numbers, or words.

Equation: _____

Launch

- Groups of 2
- Give each group tools for creating a visual display and access to 10-frames and connecting cubes or two-color counters.

Activity

- "You are going to solve different types of story problems that we have been working

2. Han has 8 pets.
5 of his pets are lizards.
The rest of his pets are snakes.
How many snakes does Han have?
Show your thinking using drawings,
numbers, or words.
- Equation: _____
3. Han has an aquarium that can hold 8 pets.
He has lizards and snakes.
Show different ways Han could fill his
aquarium.
Show your thinking using drawings,
numbers, or words.

Equation: _____

Student Responses

8. Sample response: 5 lizards, 6, 7, 8 (snakes). $5 + 3 = \boxed{8}$
3. Sample response: Draws 8 circles and labels 5 as lizards. Counts remaining 3 and labels as snakes. $8 = 5 + \boxed{3}$
- Sample response: 3 snakes, 5 lizards; 4 snakes, 4 lizards. Draws 8 circles and labels 3 as snakes and 5 as lizards. $\boxed{3} + \boxed{5} = 8$. Draws 8 more circles, labels 4 as snakes, 4 as lizards. $\boxed{4} + \boxed{4} = 8$

on. After you solve the problems, you will work with a partner to create a poster representing how you solved one of the problems."

- 6 minutes: independent work time
- Assign each group one of the problems to represent on their poster.
- "On your chart paper, include a labeled drawing that shows how you solved the problem. Also include an equation."
- 8 minutes: partner work time

Synthesis

- Check over your poster to make sure that you have included:
 - a labeled drawing
 - at least 1 equation

Activity 2

🕒 20 min

Gallery Walk: Compare the Story Problems

Standards Alignments

Addressing 1.OA.A.1, 1.OA.D.7

The purpose of this activity is for students to interpret representations of Put Together/Take Apart problems with unknowns in different positions. Students explain how each equation matches the story problem it represents (MP2). Students consider an equation that can match two different story problems, but the answer to the question is in a different place.

Students work in groups of 6 with pairs who worked on different problems.

This activity uses *MLR2 Collect and Display*. Advances: conversing, reading, writing.

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Check for understanding by inviting students to rephrase directions in their own words. Keep a display of directions visible throughout the activity.

Supports accessibility for: Memory, Organization

Instructional Routines

MLR2 Collect and Display

Materials to Gather

Materials from a previous activity

Required Preparation

- Each group will need the visual displays they created in the previous activity.

Student-facing Task Statement

As you look at your classmates' work, think about the questions and be prepared to share your answers.

1. What is the same about the story problems and representations?
2. What is different about the story problems and representations?
3. Explain how the equation matches the story problem.

Launch

- Groups of 6

Activity

- "You and your partner will work with two other groups to look at three different posters and talk about how the problems and representations are the same and how they are different. Discuss how each equation matches a story problem and where in the equation you see the answer to the question."
- 10 minutes: small group discussion

Student Responses

Sample responses:

1. The story problems all used a total of 8. Each story problem was solved the same way, and the equations are all addition.
2. Two of the story problems had 5 lizards and 3 snakes.
3. One story problem had different numbers of snakes and lots of lizards. We only knew the total. There are lots of different equations that can represent that problem.

MLR2 Collect and Display

- Circulate, listen for, and collect the language students use to explain how the story problems and equations are the same and different. Listen for: total, equation, not known.
- Record students' words and phrases on a visual display and update it throughout the lesson.

Synthesis

- "What did you notice about how the story problems and equations were the same and different?" (In this one, we had to find how many snakes Han had, but in this one we had to find how many pets he had. The first equation had the 3 in a box to show that he had 3, and in this one the answer was 8, so that is in a box.)
- "Are there any other words or phrases that are important to include on our display?"

Lesson Synthesis

🕒 10 min

Display the problem, 'Han has 8 pets. 5 of his pets are lizards. Some of his pets are snakes. How many snakes does Han have?'

"Today we solved story problems and wrote equations to match the stories. We said that the equation $5 + \boxed{3} = 8$ matches this problem."

Display $8 - 5 = \boxed{3}$.

"Could this equation represent the problem? Why or why not?" (Yes. If I think about 8 pets, I can subtract the number of lizards to tell me how many snakes I have.)

If needed, draw 8 circles and label the first 5 as lizards.

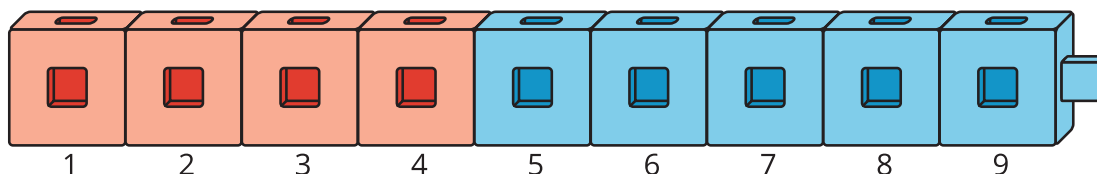
"We will discuss more about how we can represent some problems as addition or subtraction in the next part of our unit."

Student Section Summary

In this section, we solved story problems.

- We solved story problems where the total was unknown.

Kiran has some fish in his fish tank.
He has 4 red fish and 5 blue fish.
How many fish does he have in all?



$$4 + 5 = \boxed{9}$$

- We solved story problems where both parts were unknown.

Tyler is playing Shake and Spill.
He is playing with 10 counters.

Show different combinations of red and yellow
counters that Tyler could spill.

$$\boxed{4} + \boxed{6} = 10$$

$$\boxed{6} + \boxed{4} = 10$$

$$\boxed{5} + \boxed{5} = 10$$

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

- We solved problems where the second part was unknown.

6 counters are outside the cup.
Some of the counters are under the cup.
There are 10 counters total.
How many counters are under the cup?

I can count on from 6 to 10.



$$6 + \boxed{4} = 10$$

- We learned that the total can come before or after the equal sign.

$$10 = 4 + 6 \text{ is the same as } 4 + 6 = 10$$

- We learned that numbers can be added in any order.

$$4 + 6 = 10 \text{ is the same as } 6 + 4 = 10$$

Lesson 10: Center Day 2

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Teacher-facing Learning Goals

- Add and subtract within 10 in a way that makes sense to them.

Student-facing Learning Goals

- Let's play games to practice adding and subtracting.

Lesson Purpose

The purpose of this lesson is for students to practice adding and subtracting within 10.

In Activity 1, students learn a new center called Capture Squares. In this center, students roll two number cubes and find the sum. They draw lines on the game board around the sums and try to "capture the squares." In Activity 2, students choose a center to work on that focuses on addition and subtraction within 10.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- 10-frames: Activity 1
- Colored pencils or crayons: Activity 1
- Connecting cubes or two-color counters: Activity 1
- Materials from previous centers: Activity 2
- Number cubes: Activity 1

Materials to Copy

- Capture Squares Stage 1 Gameboard (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

When in today's lesson were students able to see themselves as productive mathematical reasoners?

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

Number Talk: Subtraction Methods

The purpose of this Number Talk is to elicit strategies and understandings students have for adding or subtracting 1 or 2 to a given number. Students may use what they know about the count sequence to find the answer (MP7).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $7 - 2$
- $8 - 2$
- $7 - 5$
- $8 - 6$

Student Responses

5: I know because I counted 6, 5 on my fingers.
 6: I know because I know that one less than 8 is 7, and then one more less is 6.
 2: I know because I put 5 on my fingers and

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep problems and work displayed.
- Repeat with each expression.

counted up 6, 7.
2: I know because I know $6 + 2$ is 8.

Synthesis

- “How are problems 2 and 4 the same? How are they different?” (They both start with 8. The missing number is in the same place. They subtract different numbers. They use the same 3 numbers.)

Activity 1

🕒 20 min

Introduce Capture Squares, Add Within 10

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to learn a new center called Capture Squares. Students roll two number cubes and find the sum using math tools or mental methods they have developed during the unit. They connect two dots that are adjacent to the number. If that line closes the square, they capture it and shade it in their color. The player to shade in three squares first is the winner.

♿ Access for Students with Disabilities

MLR8 Discussion Supports. Invite students to play the game and take turns asking the question, “What is the sum and how do you know?”. This gives both students an opportunity to produce language.

Advances: Conversing

🌐 Access for English Learners

Representation: Develop Language and Symbols. Synthesis: Invite students to explain their thinking orally, using connecting cubes, two-color counters, or using pictures.

Supports accessibility for: Conceptual Processing, Language, Visual Spatial Processing

Materials to Gather

10-frames, Colored pencils or crayons,
Connecting cubes or two-color counters,
Number cubes

Materials to Copy

Capture Squares Stage 1 Gameboard (groups of 2)

Launch

- Groups of 2
- Give each group two number cubes, two different colored crayons or colored pencils, a game board, and access to 10-frames and connecting cubes or two-color counters.
- "We are going to learn a new game called Capture Squares. Let's play a round together."
- Roll the number cubes.
- "What is the sum and how do you know?"
- 30 seconds: quiet think time
- 30 seconds: partner discussion
- Share responses.
- "Now I find the square that has the sum. I draw a line connecting two dots on that square."
- Repeat 1-2 more times, as needed.
- "If I draw the line that completes the square, I shade in that square my color. The first person to shade in three squares wins."

Activity

- 12 minutes: partner work time

Synthesis

- Display a game board with a couple of squares shaded. Draw three lines around the 8 so one more is needed to fill in the square.
- "What numbers could I roll on the number cubes that would allow me to capture the square with the 8? (2 and 6, 4 and 4, 3 and 5)"

Activity 2

Centers: Choice Time

🕒 20 min

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice telling and solving story problems and adding and subtracting within 10. Students choose from any stage of previously introduced centers.

- Math Stories
- Shake and Spill
- Capture Squares

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Math Stories, Stage 4
 - Shake and Spill, Stages 3 and 4
 - Capture Squares, Stage 1

Student-facing Task Statement

Choose a center.

Math Stories



Shake and Spill



Launch

- Groups of 2
- "Now you will choose from centers we have already learned. One of the choices is to continue playing Capture Squares."
- Display the center choices in the student book.
- "Think about what you would like to do first."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 8 minutes: center work time

Capture Squares



- "Choose what you would like to do next."
- 8 minutes: center work time

Synthesis

- "What is one thing you learned or got better at by working on the activity you chose?"

Lesson Synthesis

🕒 10 min

"Today we chose activities to work on and worked with a partner during center time."

"How did you and your partner work together during centers? What went well? What can we continue to work on?"

Section C: Compare Story Problems

Lesson 11: Make Them the Same

Standards Alignments

Addressing 1.OA.A.1

Building Towards 1.OA.A.1

Teacher-facing Learning Goals

- Solve Compare, Difference Unknown problems, in a way that makes sense to them.

Student-facing Learning Goals

- Let's make cube towers have the same number of cubes.

Lesson Purpose

The purpose of this lesson is for students to represent and solve Compare, Difference Unknown problems, in a way that makes sense to them.

In kindergarten, students compared quantities and answered “Are there enough?” questions. In this lesson, students interpret and solve Compare problems for the first time. Compare problems can be tricky for students because until now, they have only interpreted subtraction as taking apart or taking from. These problems require students to find the difference between quantities. In this lesson, students compare the number of connecting cubes in two towers so they can see the difference as they add or subtract cubes to make both towers have the same number of cubes.

As students explain their thinking, write equations to support connections between Compare problems and addition and subtraction. Building on the work of the previous section, include a box around the difference.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

If you were to teach this lesson over again, what activity would you redo? How would your proposed changes support student learning?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

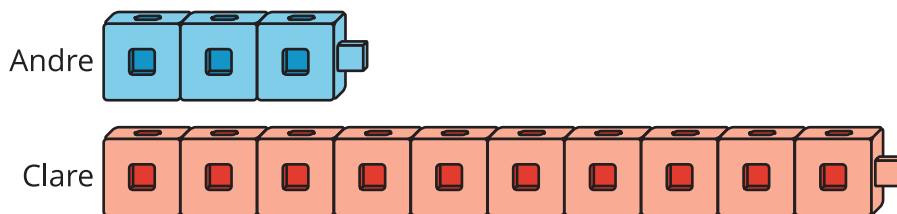
Make Them the Same

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Andre has 3 cubes.
Clare has 10 cubes.

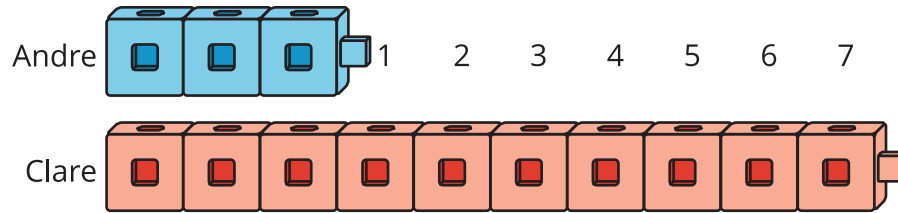


How can Andre and Clare make their towers have the same number of cubes?
Show your thinking using drawings, numbers, or words.

Student Responses

Sample response:

Andre can add 7 cubes.



Begin Lesson

Warm-up

🕒 10 min

Notice and Wonder: Cube Towers

Standards Alignments

Building Towards 1.OA.A.1

The purpose of this warm-up is to elicit the idea that quantities can be compared, which will be useful when students compare connecting cube towers in order to make them have the same number of cubes, in a later activity. While students may notice and wonder many things about this image, comparing the quantity of cubes in each tower is the important discussion point. When students use the language “Jada has less cubes than Diego”, the teacher should revoice using the grammatically correct language “fewer” to support students with developing precise language (MP6).

Instructional Routines

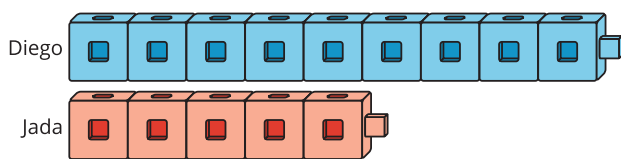
Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

Launch

- Groups of 2
- Display the image.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time



Student Responses

- Students may notice:
 - Diego's tower has 9 cubes.
 - Jada's tower has fewer cubes than Diego's.
 - There are 14 cubes altogether.
- Students may wonder:
 - Why don't they have the same amount?
 - What are we using these for?

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.
- Revoice and emphasize "more than" and "fewer than."

Synthesis

- "We will use connecting cube towers and think about how to make them have the same number of cubes."

Activity 1

🕒 15 min

Cube Towers

The purpose of this activity is for students to find ways to make two quantities the same. Students may use connecting cubes to represent and solve the problems, if they choose. Students are more likely to add cubes to make the towers have an equal number of cubes, but some students may take cubes away. Students record how they solved each problem in a way that makes sense to them. During the synthesis, the teacher records equations that match the way students solved the problem to build on work in previous sections.

Materials to Gather

Connecting cubes in towers of 10 and singles

Required Preparation

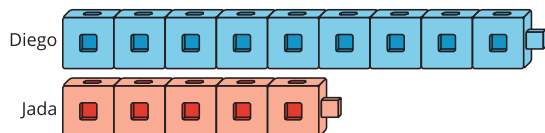
- Create a tower of 9 blue connecting cubes and a tower of 5 red connecting cubes.
- Each group of 2 needs 4 towers of 10 connecting cubes.

Student-facing Task Statement

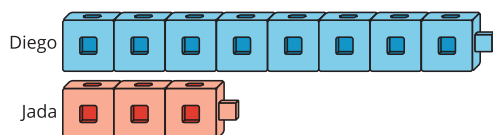
How can Diego and Jada make their towers have the same number of cubes?

Show your thinking using drawings, numbers, or words.

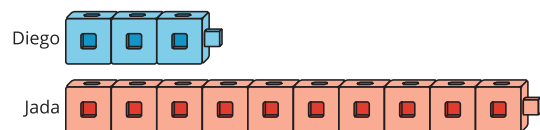
1.



2.



3.



Student Responses

1. Sample response: To make the towers the same, I lined them up and broke apart the blue tower into 5 and 4. The 4 tells me how many more I need to add to Jada's tower.
2. Sample response: Jada could add 5 cubes to her tower. I drew the towers and counted how many extra red cubes there were.
3. Sample response: I counted how many were in the blue tower (3) and how many are in the red tower (10). I counted on 4, 5, 6, 7, 8, 9, 10. Diego could add 7 blue cubes.

Launch

- Groups of 2
- Give each group four towers of ten connecting cubes.
- Display a tower of nine blue connecting cubes and a tower of five red connecting cubes, or the image in the student book.
- "Diego and Jada are building connecting cube towers. How can Diego and Jada make their towers have the same number of cubes? Remember, you are not sharing the answer with your partner; you are sharing your method for solving the problem." (They can add some cubes to the red tower or take some off the blue tower.)
- 1 minute: quiet think time
- 1 minute: partner discussion
- Share responses.

Activity

- "You are going to record your thinking for this problem and solve two more problems about making Diego and Jada's connecting cube towers have the same number of cubes. You may use the connecting cubes to help if you choose."
- 5 minutes: independent work time
- Monitor for students who have clear representations for problem 3 showing:
 - adding cubes to Diego's tower
 - counting up the difference between Diego's tower to Jada's tower
 - taking cubes from Jada's tower
 - counting back the difference between Jada's tower to Diego's tower

Synthesis

- Invite previously identified students to

share.

- “What do you notice about all these methods?” (They all got the same answer, even if they added cubes or took cubes off.)
- “What equation would you write to match the story problem? How does your equation show how you solved the story problem?” ($3 + 7 = 10$, because I added 7 cubes onto Diego’s tower to make them the same. $10 - 3 = 7$, because I broke off from Jada’s tower and counted what I broke off.)

Activity 2

🕒 20 min

Cube Tower Problems

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to solve Compare, Difference Unknown story problems in the context of connecting cube towers. Students solve comparison problems with given constraints that encourage students to add or break apart cubes to make towers with the same number of cubes. As students explain their thinking during the synthesis, record both addition and subtraction equations. When students answer the question, “How do you know?” they are beginning to explain their reasoning and construct viable arguments (MP3).

Access for English Learners

MLR8 Discussion Supports. Invite students to take turns sharing their responses. Ask students to restate what they heard using precise mathematical language and their own words. Display the sentence frame: “I heard you say . . .” Original speakers can agree or clarify for their partner.

Advances: Listening, Speaking

Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Provide choice and autonomy. In addition to connecting cubes, provide access to red, yellow, and blue crayons or colored pencils they can use to represent and solve the story problems.

Supports accessibility for: Visual-Spatial Processing, Conceptual Processing

Materials to Gather

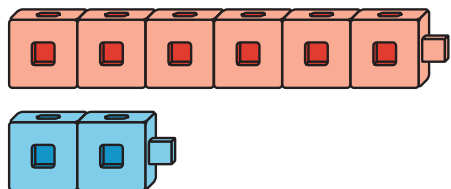
Connecting cubes in towers of 10 and singles

Required Preparation

- Gather 1 red tower of 8 connecting cubes, 1 yellow tower of 3 connecting cubes, and a handful of yellow cubes.
- Each group of 2 needs 4 towers of 10 connecting cubes.

Student-facing Task Statement

1.

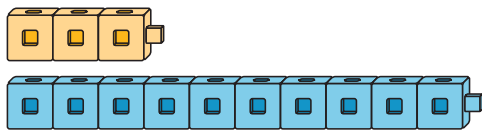


Lin has only blue cubes.
How can Lin make the towers have the same number of cubes?
Show your thinking using drawings, numbers, or words.

2.

Launch

- Groups of 2
- Give each group four towers of ten connecting cubes.
- Display one red tower of eight connecting cubes, one yellow tower of three connecting cubes, and the handful of yellow connecting cubes.
- “I have two towers and I need to make them the same number of cubes. But I only have these yellow cubes. How can I make them the same?”
- 1 minute: quiet think time
- 1 minute: partner discussion
- Share and record responses.



Lin has no more yellow cubes.
How can she make the towers have the same number of cubes?

Show your thinking using drawings, numbers, or words.

- Lin is making 2 cube towers.
The red tower has 6 cubes.
The blue tower has 9 cubes.
She has no more red cubes.
How can she make the towers have the same number of cubes?
Show your thinking using drawings, numbers, or words.

- Lin is making 2 cube towers.
The yellow tower has 7 cubes.
The red tower has 3 cubes.
She only has red cubes.
How can she make the towers have the same number of cubes?
Show your thinking using drawings, numbers, or words.

If you have time: Write your own problem about 2 cube towers.

Trade problems with a partner and solve.

Student Responses

- Lin can add 4 blue cubes to her blue tower.
- Lin can break off 7 blue cubes from her tower.
- Lin can break off 3 blue cubes from her tower.
- Lin can add 4 red cubes to her tower.

Activity

- “Lin is working to make the number of cubes in each of her towers the same. Each problem will tell you what cubes she has to work with. Record your thinking for each tower.”
- 8 minutes: independent work time
- “Share your thinking with your partner.”
- 4 minutes: partner discussion
- Monitor for a student who solved the problem with 7 yellow cubes and 3 red cubes by adding 4 red cubes or drawing 4 more red cubes.

Synthesis

- Display selected student work.
- “How did they solve the problem?” (She added 4 red cubes.)
- “What equation matches how they solved? How do you know?” ($3 + 4 = 7$ because Lin started with 3 red cubes and she added 4 cubes to make it the same.)
- “Which number in the equation represents the answer to the problem?” (4 because that is how many cubes Lin added.)
- Put a box around the 4.

Display one red tower of eight connecting cubes, one yellow tower of three connecting cubes, and a handful of yellow connecting cubes.

“Today we made towers have the same number of cubes by adding more cubes to the smaller tower or taking cubes from the larger tower. How does adding more cubes relate to addition?” (I can add cubes to the tower with fewer cubes to make them the same.)

Complete Cool-Down

Response to Student Thinking

Students make the towers the same by adding seven blue cubes, but write an equation that has parts other than 3 and 7.

Next Day Support

- Ask students to make the towers the same using cubes of a third color. Then use the tower with two colors to find the parts to use in the equation.

Lesson 12: School Supplies

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.5

Building Towards 1.OA.A.1

Teacher-facing Learning Goals

- Relate counting to addition and subtraction.
- Solve Compare, Difference Unknown story problems in a way that makes sense to them.

Student-facing Learning Goals

- Let's find the difference between quantities.

Lesson Purpose

The purpose of this lesson is for students to solve Compare, Difference Unknown story problems in a way that makes sense to them.

Students build on representations and methods they learned in the previous lesson, in which students compared different quantities of connecting cubes. In this lesson, students work with comparisons in story contexts. The first activity uses the Three Reads routine to help students better understand the story problem and how the quantities are related.

As students explain their thinking, write equations to support connections between comparing and addition and subtraction. Include a box around the difference in the equations.

Access for:

Students with Disabilities

- Representation (Activity 2)

English Learners

- MLR7 (Activity 1)

Instructional Routines

MLR6 Three Reads (Activity 1), Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters:
Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

How effective were your questions in supporting students' thinking today? What did students say or do that showed they were effective?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Homework Papers

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

There are 8 students at the table.

There are 6 homework papers.

How many more students are there than homework papers?

Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

2. Sample response: I can count on from 6 to 8. 7, 8.

$$6 + \boxed{2} = 8$$

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

Notice and Wonder: School Supplies

Standards Alignments

Building Towards 1.OA.A.1

The purpose of this warm-up is for students to think mathematically about a context they will be working with in the next activity. Students may generate a variety of mathematical questions related to the story problem types they solved in previous lessons. This warm-up prompts students to make sense of a problem before solving it by familiarizing themselves with a context and the mathematics that might be involved (MP1).

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?



Student Responses

Students may notice:

- These are things we use at school.
- I see paint.
- There are a lot of crayons.

Students may wonder:

- How many supplies are in the picture?
- Do we have all of those things in our classroom?
- What are the clear things next to the paint?

Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- "What math questions can you ask about this picture?"
- "We are going to work on lots of story problems about school supplies."

Activity 1

🕒 15 min

Not Enough Pencils

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.5

The purpose of this activity is for students to solve a Compare, Difference Unknown story problem using modified language. Students begin the activity by looking at the problem displayed, rather than in their books. They identify the important quantities before working on the problem, giving them an entry point for addressing the question, phrased negatively, of how many students will not have a pencil (MP1). When students open their books and work on the problem, they have access to connecting cubes or two-color counters. In the lesson synthesis, students connect equations to different ways of solving the problem.

This activity uses *MLR6 Three Reads*. Advances: reading, listening, representing.

Access for English Learners

MLR7 Compare and Connect. Synthesis: After all methods have been presented, lead a discussion comparing, contrasting, and connecting the different approaches. Ask, “How are the methods similar? How are they different?”

Advances: *Representing, Conversing*

Instructional Routines

MLR6 Three Reads

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

There are 10 students at the table.
There are 6 pencils.
How many students won't get a pencil?
Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.

Student Responses

4. Sample responses:

-

							1	2	3	4
S	S	S	S	S	S	S	S	S	S	S
P	P	P	P	P	P					

- I started with 10 yellow counters for the number of students. I flipped over 6 counters to show the number of pencils. There are 4 students without pencils.



Activity

MLR6 Three Reads

- Display only the problem stem, without revealing the question(s).
- “We are going to read this problem three times.”
- 1st Read: “There are 10 students at the table. There are 6 pencils.”
- “What is this story about?”
- 1 minute: partner discussion
- Listen for and clarify any questions about the context.
- 2nd Read: “There are 10 students at the table. There are 6 pencils.”
- “What are all the things we can count in this story?” (the number of students, the number of pencils)
- 30 seconds: quiet think time
- 1 minutes: partner discussion
- Share and record all quantities.
- Reveal the question(s).
- 3rd Read: Read the entire problem, including question(s) aloud.
- “What are different ways we can solve this problem?” (I can use red connecting cubes for the students and blue for the pencils. I can draw circles for the students and lines for the pencils.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- “Solve the problem.”
- 3 minutes: independent work time
- “Share your thinking with your partner.”
- 2 minutes: partner discussion
- Monitor for a student who represents counting up from 6 to 10 and one who represents subtracting 6 from 10.

Synthesis

- Display previously identified student work.
- “How did they solve the problem?”
- Write an equation to match each method of solving.

Activity 2

🕒 20 min

Compare Problems

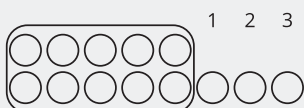
Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.5

The purpose of this activity is for students to represent and solve Compare, Difference Unknown story problems. Students may use one of the following methods to find the difference or may come up with their own method.



Add on to the smaller set to make them equivalent.
 $(5 + \boxed{3} = 8)$



Match the sets and then count how many don't have a partner.
 $(8 - 5 = \boxed{3})$



Show the total (8), color in the known amount (5), count the difference. $(8 = 5 + \boxed{3})$ or $8 - 5 = \boxed{3}$

In the activity synthesis, students consider methods related to counting up and counting back.

🕒 Access for Students with Disabilities

Representation: Access for Perception. Provide appropriate reading accommodations and supports to ensure student access to story problems.

Supports accessibility for: Language, Visual-Spatial Processing

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

- There are 9 markers in a bin.
There are 4 caps for the markers.
How many more caps are needed so that each marker has a cap?
Show your thinking using drawings, numbers, or words.



Equation: _____

- There are 2 folders on the teacher's desk.
There are 9 folders on the supply table.
How many fewer folders are there on the desk than the table?
Show your thinking using drawings, numbers, or words.
- Equation: _____
- There are 5 dry erase boards at each table.
There are 8 markers at each table.
How many more markers are there than dry erase boards at each table?
Show your thinking using drawings, numbers, or words.

Equation: _____



Student Responses

- 5 caps. $4 + \boxed{5} = 9$, $9 - 4 = \boxed{5}$. Sample response:

Launch

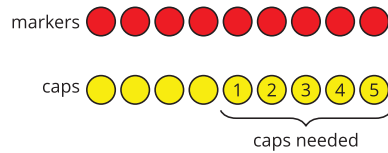
- Groups of 2
- Give students access to connecting cubes or two-color counters.

Activity

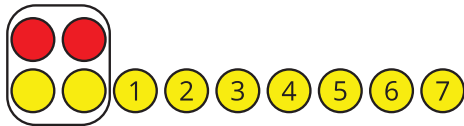
- “You will solve more story problems about school supplies. Show your thinking using drawings, numbers, or words. Write an equation for each story problem.”
- 6 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for a student who counted up and one who counted back for the problem about folders.

Synthesis

- Invite previously identified students to share.
- “How is their work the same? How is it different?” (They both use 2, 7 and 9. One uses addition and one uses subtraction. The answer is in a different place in each equation.)
- “Where is the answer to the question in each representation?” (When they added the answer was in the middle. When they subtracted it was at the end.)
- Add a box around the answer in each equation.



2. 7 folders. $9 - 2 = \boxed{7}$ Sample response:



3. 3 markers. $8 - 5 = \boxed{3}$, $8 = 5 + \boxed{3}$. Sample response: I drew 8 circles for markers. I colored 5 red to show how many dry erase boards there are. Then I counted the blank circles to find out how many more markers there are than boards.

Lesson Synthesis

🕒 10 min

“Today we solved a new kind of story problem. How were these problems the same as the problems you solved in the past? How are they different?”(They were the same because we could add or subtract to solve them. They were different because we were comparing quantities instead of putting them together or taking them apart.)

----- Complete Cool-Down -----

Response to Student Thinking

Students write an answer other than 2 for how many more students there are than homework papers.

Next Day Support

- During the warm-up, have students share methods for figuring out how many more there are in one category than another. Discuss how this relates to the problem in the cool-down.

Lesson 13: Compare Favorite Art Supply Data

Standards Alignments

Addressing 1.MD.C.4, 1.OA.A.1

Teacher-facing Learning Goals

- Solve Compare, Difference Unknown story problems through a data context.
- Write an equation to represent the story problem.

Student-facing Learning Goals

- Let's compare data.

Lesson Purpose

The purpose of this lesson is for students to solve Compare, Difference Unknown story problems in a data context.

The work of this lesson connects to previous lessons in which students solved Compare, Difference Unknown story problems in a way that makes sense to them. The context is data to revisit previous work in Grade 1 and encourage students to consider more abstract contexts. Students write an equation to match the problem and put a box around the answer to the question, building on their work in previous sections. Students consider addition and subtraction equations that relate to a given problem. When students connect the quantities in the story problem to an equation, they reason abstractly and quantitatively (MP2).

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters:
Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Which math ideas from today's lesson did students grapple with most? Did this surprise you or was this what you expected?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Clare's Desk

Standards Alignments

Addressing 1.MD.C.4, 1.OA.A.1

Student-facing Task Statement

pencils	erasers	crayons
9	4	7

How many fewer erasers than pencils are there?

Show your thinking using drawings, numbers, or words.

Student Responses

$$5. 4 + \boxed{5} = 9, 9 - 4 = \boxed{5}$$

Sample response:

E E E E 5
 P P P P P P P P P

----- **Begin Lesson** -----

Warm-up

🕒 10 min

Notice and Wonder: More and Fewer

Standards Alignments

Addressing 1.MD.C.4

This warm-up prompts students to consider data representations, which they worked with in a previous unit. When students articulate what they notice and wonder, they have an opportunity to attend to precision in the language they use to describe what they see (MP6). They might first use less formal or imprecise language, and then restate their observation with more precise language in order to communicate more clearly.

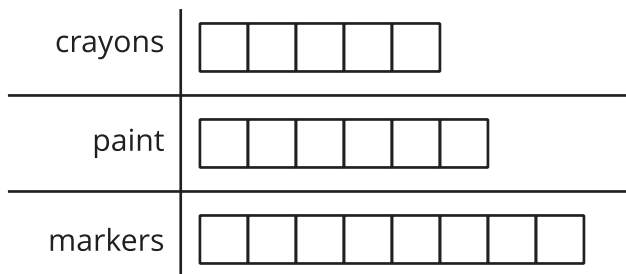
Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?

What do you wonder?



Student Responses

Students may notice:

- There are 8 votes for markers.
- Crayons had the fewest votes.
- There are more votes for paint than crayons.

Students may wonder:

- What is the title of the graph?
- How many more people voted for markers than crayons?
- How many students took the survey?

Launch

- Groups of 2
- Display the image.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- “What could the title of this diagram be?”

Activity 1

🕒 20 min

Compare Data (Part 1)

Standards Alignments

Addressing 1.MD.C.4, 1.OA.A.1

The purpose of this activity is for students to determine whether comparison statements about data are true or false and explain how they know. Students build on their work with asking and answering how many in all questions about data and their work with solving Compare story problems.

Students may use matching techniques to compare the physical data using objects and drawings. Students explain how they know whether the statements are true or false.

It is important to revoice student responses in which students use the word "less" instead of "fewer." For example, revoice "There are less students who chose crayons" as "There are fewer students who chose crayons."

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

A group of students was asked, "What is your favorite art supply?"

Their responses are shown in this chart.

Favorite Art Supply	
crayons	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
paint	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
markers	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

1. More students voted for crayons than markers.

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.

Activity

- Read the task statement.
- "Priya and Han made some statements about their data. Your job is to decide whether you agree or disagree. Once you decide, circle it on your paper."
- 3 minutes: independent work time
- "Now, explain to your partner how you know."



True

or



False

2. Fewer students voted for crayons than paint.



True

or



False

3. Three more students voted for markers than crayons.



True

or



False

Show your thinking using drawings, numbers, or words.

4. One more student voted for paint than crayons.



True

or



False

Show your thinking using drawings, numbers, or words.

5. One fewer student voted for paint than markers.



True

or



False

- 3 minutes: partner discussion
- Monitor for two students who solve and represent problem 3 in different ways.

Synthesis

- Invite previously identified students to share.
- “How are these representations the same? How are they different?”
- “What equation can I write to match their work?” ($5 + 3 = 8$, $8 - 5 = 3$)
- “How does each equation relate to the statement?” (Five is the number of votes for crayons, and then adding 3 shows the difference between crayons and markers; if you start with the number for markers and take away how many voted for crayons, you see that it is 3 fewer votes.)
- If needed, ask, “Which part of this equation represents the answer to the problem?”
- Draw a box around the 3.

Show your thinking using drawings, numbers, or words.

If you have time: Change the false statements to make them true.

Student Responses

1. False.
2. True.
3. True. Sample response:

crayons 

markers 

4. True. Sample response: crayons has 5, and I added one more to get 6. $5 + 1 = 6$
5. False. Sample response: 2 fewer students chose paint than markers. $7 - 2 = 5$

Advancing Student Thinking

If students identify how many voted for each category, but label true statements as false, or false statements as true, consider asking:

- "How can you tell how many students voted for (crayons, paint, markers)?"
- "How could you use connecting cubes to compare the categories?"

Activity 2

 15 min

Compare Data (Part 2)

Standards Alignments

Addressing 1.MD.C.4, 1.OA.A.1

The purpose of this activity is for students to solve Compare, Difference Unknown problems about data that include the language, “more” and “fewer”. Students write equations that match the story problems. They may use matching techniques to compare the data using objects and drawings, and during the synthesis, explore how to see the difference in a drawing and relate it to addition and subtraction equations (MP2). Students may want to tear out the page in their book with the data, so they can have it more readily available while working on each problem.

Access for English Learners

MLR8 Discussion Supports. Revoice student ideas to demonstrate and amplify mathematical language use, encouraging “more” and “fewer”. For example, revoice the student statement “Three less like paint” as “Three fewer students voted for paint than for crayons.”

Advances: Listening, Speaking, Conversing

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Chunk this task into more manageable parts. Check in with students to provide feedback and encouragement after each chunk.

Supports accessibility for: Attention, Organization

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

Another group of students was asked, “What is your favorite art supply?”

Their responses are shown in this chart.

Favorite Art Supply		
crayons	paint	markers
10	7	6

Favorite Art Supply		
crayons	paint	markers
10	7	6

- How many more students voted for crayons than for paint?
Show your thinking using drawings, numbers, or words.
- How many fewer students voted for markers than paint?

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.
- Display Favorite Art Supply data (do not include the problems).
- “What questions might you ask about this data?”
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Activity

- Read the task statement.
- “Now you are going to answer some

Show your thinking using drawings, numbers, or words.

3. How many more students voted for crayons than markers?

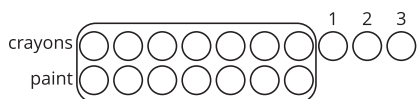
Show your thinking using drawings, numbers, or words.

4. How many fewer students voted for markers than crayons?

Show your thinking using drawings, numbers, or words.

Student Responses

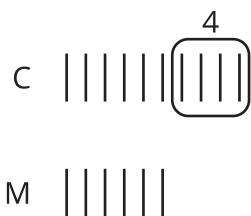
1. 3. Sample response: $7 + \boxed{3} = 10$,



2. 1. Sample response: $7 - \boxed{1} = 6$, 6 is one less than 7.

3. 4. Sample response: $6 + \boxed{4} = 10$, 6 votes for markers plus 4 more votes is the same number as 10 votes for crayons.

4. 4. Sample response: $10 - 6 = \boxed{4}$,



questions about the data."

- 5 minutes: independent work time
- "Share your thinking with a partner."
- 5 minutes: partner discussion

Synthesis

- Display, 'How many more students voted for crayons than markers?'
- "We know that ten students voted for crayons and six students voted for markers. Let's represent these votes using letters."

- Record:

C C C C C C C C C C
M M M M M M

- "C stands for the number of votes for crayons and M stands for the number of votes for markers. How many more votes for crayons are there? How do you know?" (4. I can see that there are 4 extra Cs.)
- "What equations can we write?" ($6 + \boxed{4} = 10$ or $10 - 6 = \boxed{4}$)
- If needed, write $10 - 6 = \boxed{4}$.
- "What number in each equation represents the answer?" (4)
- "When you compare two numbers you find the difference. Each of these equations helped us find the difference. The difference between the number of students who voted for crayons and those who voted for markers is four."

Lesson Synthesis

🕒 10 min

Display 'How many fewer students voted for markers than paint?'

"Today we showed how to write equations that match our work and show which number represents

the difference. What equations can we write that match the problem? Which number represents the difference?"

----- **Complete Cool-Down** -----

Response to Student Thinking

Students write a number other than 5 for how many fewer erasers there are than pencils.

Prior Unit Support

Grade K, Unit 2, Section B: Count and Compare Groups of Images

Lesson 14: Compare with Addition and Subtraction

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7

Teacher-facing Learning Goals

- Match addition and subtraction equations to a story problem.
- Solve Compare, Difference Unknown story problems.

Student-facing Learning Goals

- Let's solve story problems and match them to addition and subtraction equations.

Lesson Purpose

The purpose of this lesson is for students to solve Compare, Difference Unknown story problems and match addition and subtraction equations to the problems.

In previous lessons, students solved Compare problems and wrote equations to match. They considered counting on and counting back to find the difference. This lesson builds on previous work done in this unit by asking students to find two equations that match a story problem and describe how each equation relates to the story problem.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR2 (Activity 2)

Instructional Routines

True or False (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Materials from previous centers: Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

What did you say, do, or ask during the lesson synthesis that helped students be clear on the learning of the day?

Cool-down (to be completed at the end of the lesson)

🕒 0 min

Unit 2, Section C Checkpoint

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent the story with objects or drawings.
- Represent the story with equations.
- Explain how the representation matches the story.
- Answer the question correctly.

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

True or False: Equal Sign

Standards Alignments

Addressing 1.OA.D.7

The purpose of this True or False is to continue to develop and deepen student understanding of the equal sign. These understandings will be helpful when students work with equations with expressions on both sides of the equal sign in a later unit.

This is the second time students will do this instructional routine. The teacher should read aloud each equation. When students are more familiar with equations, they do not need to be read by the teacher.

Instructional Routines

True or False

Student-facing Task Statement

Decide if each statement is true or false. Be prepared to explain your reasoning.

- $7 + 3 = 10$
- $10 = 7 + 3$
- $10 = 3 + 6$

Student Responses

- True: $7 + 3$ is the same amount as 10.
- True: 10 is the same as $7 + 3$ from the last one.
- False: $3 + 6$ is the same amount as 9, and 9 is less than 10.

Launch

- Display one statement.
- "Give me a signal when you know whether the statement is true and can explain how you know."
- 1 minute: quiet think time

Activity

- Share and record answers and strategy.
- Repeat with each equation.

Synthesis

- "How is 10 the same amount as $7 + 3$?" (When I add 7 and 3, the total is 10.)
- "If $7 + 3 = 10$, and $10 = 7 + 3$, would $10 = 3 + 7$?" (Yes, because $7 + 3$ is the same amount as 10, and 10 is the same amount as $3 + 7$.)

Activity 1

Is It Addition or Subtraction?

🕒 15 min

👤 ↔ 👤 PLC Activity

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.5, 1.OA.D.7

The purpose of this activity is for students to explore the relationship between addition and subtraction through a Compare, Difference Unknown story problems. They analyze two equations, one addition and one subtraction, that match the same problem and discuss the relationship between the two equations and the story problem. Students should notice that both equations can be used to describe how they solve the problem. This also helps them relate addition and subtraction and see that often either operation can be used to solve a problem (MP7).

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

There are 8 glue sticks and 3 scissors at the art station. How many fewer scissors are there than glue sticks?



Mai created a picture.

glue sticks 

scissors 

She is not sure which equation she should use to find the difference.

$$8 - 3 = \boxed{5}$$

$$3 + \boxed{5} = 8$$

Help her decide.

Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.
- Display the image in the student book.
- “Tell a story about this picture.”
- 1 minute: quiet think time
- 2 minutes: partner discussion
- Share responses.

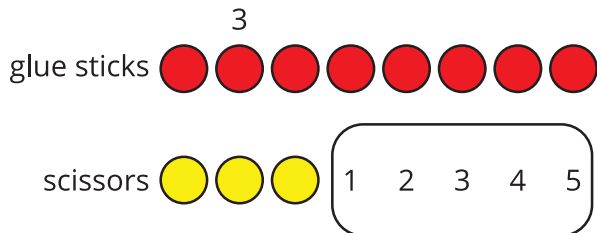
Activity

- Read the task statement.
- 5 minutes: partner work time
- Encourage students to use the representation to make sense of both equations.
- Monitor for a group who uses the representation to explain the addition equation and one who explains the subtraction equation.

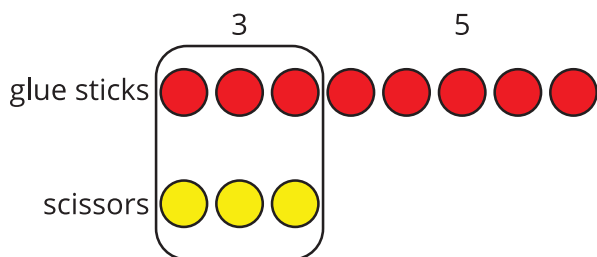
Student Responses

Sample responses:

- I can see how many it takes to count from 3 to 8. $3 + \boxed{5} = 8$



- I can take 3 glue sticks from 8 to find out how many fewer scissors. $8 - 3 = \boxed{5}$



Synthesis

- "What are we trying to find out in this story problem?" (How many fewer scissors there are than glue sticks. The difference between the number of scissors and glue sticks.)
- Invite previously identified groups to share.
- "What is the same? What is different?" (3, 5, and 8 are in each equation. The numbers represent the same things in both. The 5 is boxed in both. One uses addition and the other uses subtraction. The boxed number is in a different place.)

Advancing Student Thinking

If students find the difference using only one operation, consider asking:

- "Can you explain how you found the difference between the number of glue sticks and scissors?"
- "Where in your drawing (objects) do you see the difference? How could you find that part of the representation by adding (subtracting)?"

Activity 2

🕒 10 min

Which Equation?

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.5, 1.OA.D.7

The purpose of this activity is for students to identify addition and subtraction equations that match Compare, Difference Unknown story problems. Students may not initially choose more than one equation for each problem, so this is the emphasis of the activity synthesis. Students continue to build their language of Compare problems and solidify the relationship between addition and subtraction.

Access for English Learners

MLR2 Collect and Display. Collect the language students use to explain their thinking. Display words and phrases such as: more, fewer, equation, drawings, words. During the synthesis, invite students to suggest ways to update the display: “What are some other words or phrases we should include?”, etc. Invite students to borrow language from the display as needed.

Advances: Conversing, Reading

Access for Students with Disabilities

Engagement: Internalize Self-Regulation. Synthesis: Provide students an opportunity to self-assess and reflect on their own progress. For example, ask students to check over their work to make sure they used drawings, numbers, or words to show their thinking, and also included at least one equation to show how they solved the problem.

Supports accessibility for: Conceptual Processing, Attention

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

1. There are 5 red pillows and 3 blue pillows on the reading rug.

How many more red pillows are there than blue pillows?

Show your thinking using drawings, numbers, or words.

Circle the equation that matches the problem.

$$5 + 3 = \square$$

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.

Activity

- Read the task statement.
- 3 minutes: independent work time
- 2 minutes: partner discussion
- Monitor for a student who can show and

$$5 - 3 = \square$$

$$5 + \square = 3$$

$$3 + \square = 5$$

2. There are 7 calculators on the table.
There are 8 math books.
How many more math books are there than calculators?
Show your thinking using drawings, numbers, or words.

Circle the equation that matches the problem.

$$7 + \square = 8$$

$$8 - 7 = \square$$

$$7 - 8 = \square$$

$$8 + \square = 7$$

3. In Mr. Green's class, 3 students have purple backpacks and 7 students have black backpacks.
How many more students have black backpacks than purple backpacks?
Show your thinking using drawings, numbers, or words.

Circle the equation that matches the problem.

$$3 + 7 = \square$$

$$3 + \square = 7$$

$$7 - \square = 3$$

$$7 + \square = 3$$

Student Responses

1. 2. $5 - 3 = \square$ or $3 + \square = 5$. Sample response: I made a tower of 3 cubes and a

explain how they chose which equation matches.

Synthesis

- "How did you know which equation matched the problem about backpacks?" (I made a tower of 3 cubes to show the purple backpacks, and a tower of 7 cubes to show the black backpacks. Then I broke off the difference, which is 4. This matches $7 - \underline{\quad} = 3$ because the 4 shows the difference.)
- "Are there any other equations that represent this problem?" (Yes, $3 + \underline{\quad} = 7$ also matches. I started with 3 cubes, and added cubes until I got to 7. The amount I added was 4.)
- "There were two equations that match this problem. Check the other problems to see if there are any other equations that match."

tower of 5 cubes. Then I added 2 cubes to the tower of 3 to make them the same. The two cubes are the difference.

2. 1. $7 + \square = 8$ or $8 - 7 = \square$. Sample response: There is a difference of 1 between 7 and 8.
3. 4. $7 - \square = 3$ or $3 + \square = 7$. Sample response: I made a tower of 3 cubes and a tower of 7 cubes. Then I broke off what was the same, and was left with 4 cubes.

Activity 3

🕒 15 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice telling and solving story problems and adding and subtracting within 10. Students choose from any stage of previously introduced centers.

- Capture Squares
- Math Stories
- Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Capture Squares, Stage 1
 - Math Stories, Stage 4

- Shake and Spill, Stages 3 and 4

Student-facing Task Statement

Choose a center.

Capture Squares



Math Stories



Shake and Spill



Launch

- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- “Tell your partner one thing they did that helped you during center time today.”

Lesson Synthesis

🕒 10 min

Display: In Mr. Green's class, 3 students have purple backpacks and 7 students have black backpacks. How many more students have black backpacks than purple backpacks?

$$3 + \boxed{4} = 7 \text{ and } 7 - 3 = \boxed{4}.$$

“Today we explained how different equations can match the same story. These are the equations that match this story. Why does the position of the answer change?” (Because one equation is addition and one is subtraction, because they used different methods to solve the problem, so the answer came in different places.)

“What does each number represent?”

Lesson 15: Different Types of Story Problems

Standards Alignments

Building On 1.OA.A.1

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

Teacher-facing Learning Goals

- Solve a variety of types of story problems.
- Write addition and subtraction equations to represent story problems.

Student-facing Learning Goals

- Let's solve story problems and write equations to match.

Lesson Purpose

The purpose of this lesson is for students to solve a variety of story problems and write equations that match each problem.

The work of this lesson connects to previous lessons in which students solved Put Together/Take Apart story problems with unknowns in different positions and Compare, Difference Unknown story problems in a way that makes sense to them. They considered addition and subtraction equations that match the same story problem. In this lesson, students solve a variety of story problem types and write equations to match them. Students are encouraged, but not required, to write more than one equation for each story problem.

This lesson has a Student Section Summary.

Access for:



Students with Disabilities

- Action and Expression (Activity 2)



English Learners

- MLR8 (Activity 1)

Instructional Routines

Which One Doesn't Belong? (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 2
- Materials from previous centers: Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

What part of the lesson went really well today in terms of students learning? What did you do that made that part go well?

Cool-down (to be completed at the end of the lesson)

🕒 0 min

Unit 2, Section C Checkpoint

Standards Alignments

Building On 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent the story with objects or drawings.
- Represent the story with equations.
- Explain how their representation matches the story.
- Answer the question correctly.

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

Which One Doesn't Belong: Equations

Standards Alignments

Addressing 1.OA.C.6

This warm-up prompts students to compare four equations. It gives students a reason to use language precisely (MP6). It gives the teacher an opportunity to hear how students use terminology and talk about characteristics of the items in comparison to one another. During the synthesis, ask students to explain the meaning of the equal sign in their reasoning.

Instructional Routines

Which One Doesn't Belong?

Student-facing Task Statement

Which one doesn't belong?

- A. $7 = \boxed{7}$
- B. $\boxed{7} = 3 + 4$
- C. $4 + 3 = \boxed{8}$
- D. $7 - 3 = \boxed{4}$

Student Responses

- A is the only equation that doesn't use addition or subtraction.
- B is the only equation in which the answer comes first.
- C is the only equation that isn't true.
- D is the only equation that uses subtraction.

Launch

- Groups of 2
- Display the image.
- "Pick one that doesn't belong. Be ready to share why it doesn't belong."
- 1 minute: quiet think time

Activity

- 2-3 minutes: partner discussion
- Record responses.

Synthesis

- "What does each equation help us know about the equal sign?" (It shows us that the equal sign means the amount on either side is the same.)

Activity 1

🕒 10 min

What Questions Can We Ask?

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to make sense of a problem before solving it by familiarizing themselves with a context and the mathematics that might be involved (MP1). Students are asked to tell a story about an image in order to generate observations that lead them to ask mathematical questions about the context. This sets them up for Activity 2 in which students will be solving story problems in the given context.

Access for English Learners

MLR8 Discussion Supports. Display sentence frames to support partner discussion: "The picture shows. . ." and "I can count. . ."

Advances: Speaking, Conversing

Student-facing Task Statement



What mathematical questions can you ask about this image?

Student Responses

Sample responses:

- How many people are there altogether?
- How many more students are there than teachers?
- How many fewer pattern blocks does this kid have than this kid?

Launch

- Groups of 2
- "Use numbers to describe the image."
- 1 minute: quiet think time
- 2 minutes: partner discussion
- Share responses.

Activity

- "Think about the mathematics in this image. What mathematical questions could be asked about this picture?"
- 3 minutes: independent work time
- 2 minutes: partner discussion
- Monitor for students who are asking questions about how many altogether or how many more or fewer.

Synthesis

- Invite several students to share one question with the class.
- Record responses.

- If needed, ask, “Can this question be answered by the image? How do you know?”
- “What do these questions have in common? How are they different?” (Some of them use the same numbers. Some ask to find the total and others ask to find the difference.)

Activity 2

🕒 15 min

Different Types of Problems

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to solve a variety of story problems and write addition and subtraction equations that match those problems. Students solve Put Together/Take Apart, Total or Addend Unknown problems and Compare, Difference Unknown problems. Students may solve in any way they want and write equations to match the story problem, putting a box around the number that represents the answer (MP2).

🕒 Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method, including the tools they will use, for representing and solving the story problems. If time allows, invite students to share their plan with a partner before they begin.

Supports accessibility for: Organization, Conceptual Processing

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

1. There are 8 people at the table.
6 of the people are students.

Launch

- Groups of 2
- Give students access to connecting cubes

How many are teachers?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Equation: _____

2. Elena has 4 pattern blocks.
Tyler has 6 pattern blocks.
How many fewer pattern blocks does Elena
have than Tyler?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Equation: _____

3. Tyler has 6 pattern blocks.
Elena has 4 patterns blocks.
How many pattern blocks do they have
altogether?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Equation: _____

4. Priya has 7 triangles and 3 squares.
How many more triangles than squares
does Priya have?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Equation: _____

Student Responses

- $2. 6 + \boxed{2} = 8, 8 - 6 = \boxed{2}$
- $2. 6 - 4 = \boxed{2}, 4 + \boxed{2} = 6$
- $3. 10. 6 + 4 = \boxed{10}, 4 + 6 = \boxed{10}$
- $4. 4. 7 - 3 = \boxed{4}, 3 + \boxed{4} = 7$

or two-color counters.

Activity

- “You will solve problems about the picture from the warm up. The questions may include some of the questions you asked. Show your thinking using drawings, numbers, or words. Write an equation to match the story problem. If you can, write two different equations that match the problem.”
- 6 minutes: independent work time
- 4 minutes: partner discussion
- Monitor for students who solved using drawings, can clearly explain how they solved, and wrote an equation.

Synthesis

- Display: Elena has 4 pattern blocks. Tyler has 6 pattern blocks. How many fewer patterns blocks does Elena have than Tyler?
- “How did you solve this problem? What equation did you write?”
- Record student methods and equations.
- Repeat for the other problems with the same numbers.
- “How are these problems the same? How are they different?” (They both have Elena and Tyler. They both have 4 and 6. In one we find the difference and in the other one we find the total. The answers are different.)
- If needed, ask, “Is the total important to solving the first problem? Why or why not?” (No, because we are comparing the students.)

Activity 3

🕒 15 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting within 10. Students choose from any stage of previously introduced centers.

- Capture Squares
- Shake and Spill
- What's Behind My Back

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Capture Squares, Stage 1
 - Shake and Spill, Stages 3 and 4
 - What's Behind My Back, Stage 2

Student-facing Task Statement

Choose a center.

Capture Squares



Shake and Spill

Launch

- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of



What's Behind My Back



their choice.

- 10 minutes: center work time

Synthesis

- Using a tower of 8 cubes, break the tower and hide one part behind your back.
- “What’s behind my back? How do you know?”
- Write equations to match student methods.

Lesson Synthesis

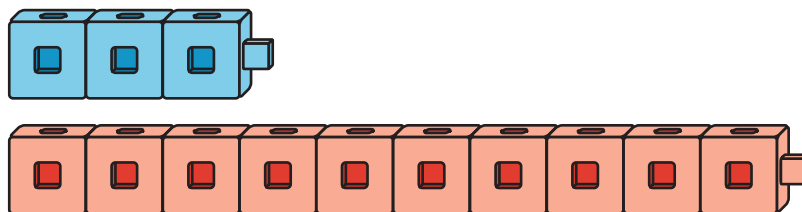
🕒 10 min

Display $7 - 2 = \boxed{5}$ and $2 + \boxed{5} = 7$.

“Today we wrote different equations to match the same story. Tell a story that could match both of these equations.” (I have 7 balloons. My friend has 2 balloons. How many more balloons do I have than my friend?)

✍ Student Section Summary

- We made cube towers that have the same number of cubes.



We can add 7 more blue cubes.

We can take off 7 red cubes.

- We solved story problems about “how many more” and “how many fewer.”
Elena has 4 pattern blocks.
Tyler has 6 pattern blocks.
How many fewer pattern blocks does Elena have than Tyler?

$4 + \boxed{2} = 6$

or

$6 - 4 = \boxed{2}$

- We learned that these problems can be solved with addition or subtraction.

Lesson 16: Center Day 3

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Teacher-facing Learning Goals

- Add and subtract within 10.
- Tell and solve math stories based on a representation.

Student-facing Learning Goals

- Let's play games to practice adding and subtracting.

Lesson Purpose

The purpose of this lesson is for students to practice adding and subtracting within 10.

In Activity 1, students learn a new stage in the Capture Squares center. In this stage students subtract numbers within 10. In Activity 2, students choose an activity to work on that focuses on addition and subtraction within 10.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR2 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Colored pencils or crayons: Activity 1
- Connecting cubes or two-color counters: Activity 1
- Materials from previous centers: Activity 2
- Number cards 0–10: Activity 1

Materials to Copy

- Capture Squares Stage 2 Gameboard (groups of 2): Activity 1

Lesson Timeline

Warm-up

10 min

Teacher Reflection Question

Who got to do math today in class? How can you

Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

adjust norms, routines, or groups so all students do math during centers?

----- Begin Lesson -----

Warm-up

🕒 10 min

Number Talk: Subtraction

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for subtracting within 10. These understandings help students develop fluency and will be helpful later in this lesson when students will need to be able to add and subtract numbers within 10.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $9 - 7$
- $9 - 2$
- $8 - 6$
- $8 - 2$

Student Responses

- 2: I counted up from 7...8, 9.
- 7: I counted back from 9, two numbers since it is minus 2. 9...8, 7.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

- 2: I counted back from 8, six numbers since it is minus 6. $8 \dots 7, 6, 5, 4, 3, 2$.
- 6: I know it is 6 because in the last problem it was $8 - 6 = 2$, and this one is the opposite.

Synthesis

- “How can the first equation help you with the second equation?” (If I know that $9 - 7$ is 2, then I know that $9 - 2$ is 7.)
- “How can the third equation help you with the fourth equation?” (If I know that $8 - 6$ is 2, then I know that $8 - 2$ is 6.)
- “Who can restate ____'s reasoning in a different way?”

Activity 1

🕒 20 min

Introduce Capture Squares, Subtract Within 10

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to learn Stage 2 in the Capture Squares center. In this stage, students choose two number cards and find the difference using math tools or mental methods they have developed during the unit. They connect two dots that are adjacent to the number. If that line closes the square, they capture it and shade it in their color. The player to shade in three squares first is the winner.

🌐 Access for English Learners

MLR2 Collect and Display. Circulate, listen for and collect the language students use as they play the game. On a visible display, record words and phrases such as: “square,” “add,” “subtract,” “line,” “dots.” Invite students to borrow language from the display as needed, and update it throughout the lesson.

Advances: Conversing, Speaking

♿ Access for Students with Disabilities

Representation: Develop Language and Symbols. Synthesis: Invite students to explain their thinking orally, using connecting cubes, two-color counters, or using drawings.

Supports accessibility for: Conceptual Processing, Language, Visual Spatial Processing

Materials to Gather

Colored pencils or crayons, Connecting cubes or two-color counters, Number cards 0–10

Materials to Copy

Capture Squares Stage 2 Gameboard (groups of 2)

Launch

- Groups of 2
- Give each group a set of number cards, two different colored crayons or colored pencils, a game board, and access to connecting cubes or two-color counters.
- “We are going to learn a new way to play Capture Squares. Let’s play a round together.”
- Choose two number cards.
- “Today we are going to subtract the numbers instead of adding them. What is the difference between these numbers? How do you know?”
- 1 minute: quiet think time
- 30 seconds: partner discussion
- Share responses.
- “Now I find the square that shows the difference. I draw a line connecting two dots on that square.”
- Repeat 1–2 more times, as needed.
- “If I draw the line that completes the square, I shade in that square my color. The first person to shade in three squares, wins.”

Activity

- 12 minutes: partner work time

Synthesis

- Display a game board with a couple of squares shaded. Draw three lines around the 3 so one more is needed to fill in the square.
- “What number cards could I pick that would allow me to capture the square with the 3?” (10 and 7, 9 and 6, 8 and 5, 7 and 4, 6 and 3, 5

and 2, 4, and 1)

Activity 2

🕒 20 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to choose from activities that focus on addition and subtraction within 10. Students choose from any stage of previously introduced centers.

- Math Stories
- Shake and Spill
- What's Behind My Back

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Math Stories, Stage 4
 - Shake and Spill, Stage 3 and 4
 - What's Behind My Back, Stage 2

Student-facing Task Statement

Choose a center.

Math Stories

Launch

- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do



Shake and Spill



What's Behind My Back



first.”

- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 15 minutes: center work time

Synthesis

- “What is one thing you learned or got better at by working on the activities you chose?”

Lesson Synthesis

🕒 10 min

“Today we chose activities to work on and worked with a partner during center time.”

“How did you and your partner work together during centers? What went well? What can we continue to work on?”

Section D: All Kinds of Story Problems

Lesson 17: How Do the Stories Compare?

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6, 1.OA.D.7

Teacher-facing Learning Goals

- Identify how a variety of story types are the same and different.
- Solve a story problem and write an equation to match the problem.

Student-facing Learning Goals

- Let's think about how stories are the same and different.

Lesson Purpose

The purpose of this lesson is for students to compare and solve story problems of different types they have seen throughout the unit.

Students write an equation to match a story problem, as they have been doing throughout the unit. When writing equations, students put a box around the answer to the question in the story problem. In this lesson, students begin by comparing different story problems to consider how the structures of the problems are the same or different. In Activity 2, students solve a variety of problem types in groups and write the equation that matches.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR2 (Activity 1)

Instructional Routines

Which One Doesn't Belong? (Warm-up)

Materials to Gather

- Tools for creating a visual display: Activity 2

Materials to Copy

- Story Problem Cards Grade 1 (groups of 2): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

How does writing equations help students make sense of the story problems?

Cool-down (to be completed at the end of the lesson)

🕒 0 min

Unit 2, Section D Checkpoint

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent the story with objects or drawings.
- Represent the story with equations.
- Explain how their representation matches the story.
- Answer the question correctly.

----- **Begin Lesson** -----

Warm-up

🕒 10 min

Which One Doesn't Belong: Equations

Standards Alignments

Addressing 1.OA.C.6, 1.OA.D.7

This warm-up prompts students to analyze and compare equations. In addition to calculating the value of each expression, students also think about the structure of each expression, including both the operations and the numbers.

Instructional Routines

Which One Doesn't Belong?

Student-facing Task Statement

Which one doesn't belong?

- A. $6 + 4 = 10$
- B. $10 - 4 = 6$
- C. $2 + 2 + 2 = 6$
- D. $6 = 2 + 4$

Student Responses

Sample responses:

- A doesn't belong because it doesn't have a value of 6 on both sides of the equal sign.
- B doesn't belong because it doesn't use addition.
- C doesn't belong because the addition expression has 3 numbers.
- D doesn't belong because the sum is in front of the equal sign.

Launch

- Groups of 2
- Display the image.
- "Pick one that doesn't belong. Be ready to share why it doesn't belong."
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 2–3 minutes: partner discussion
- Record responses.

Synthesis

- Display equations A and B.
- "How are the equations the same? How are they different?" (They are related facts. They both have a total of 10 and 6 and 4 as parts. One is addition and one is subtraction.)

Activity 1

🕒 20 min

Compare Stories

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to compare different story problems to determine how they are the same and different. The stories being compared represent problem types students have worked with in previous lessons, specifically:

- Add to, Change Unknown and Put Together, Addend Unknown
- Take From, Result Unknown and Take Apart, Addend Unknown

As students discuss the similarities of the story problems, they may notice the structures of the problems are connected, the same operations can be used to solve the problems, or that the answer is in the same place in the equation.

During the synthesis, students discuss a Put Together, Both Addends Unknown problem and consider how the structure of the problem is different from the others.

Access for English Learners

MLR2 Collect and Display. Collect the language students use to talk about the problems. Display words and phrases such as: "sort," "add," "subtract," "more," "less," "story," "numbers." During the synthesis, invite students to suggest ways to update the display: "What are some other words or phrases we should include?", etc. Invite students to borrow language from the display as needed as they discuss the new problem.

Advances: Conversing, Speaking

Student-facing Task Statement

1. Compare these stories about playing 4 corners.



There are 6 students playing 4 corners.
Some more students come to play.
Now there are 9 students playing 4 corners.
How many students came to play?

Launch

- Groups of 2
- "Think about games you like to play when we have free time at school. They can be indoor or outdoor games."
- 30 seconds: quiet think time
- Share responses and record in two categories, indoor games and outdoor games.

Activity

- "You and your partner are going to read two pairs of story problems about games

9 students are playing 4 corners.
7 students are waiting in a corner.
The other students are still deciding which corner to pick.
How many students are still deciding which corner to pick?

- How are these problems alike?
- How are they different?

Be prepared to share your thinking.

2. Compare these stories about playing charades.



There were 9 students playing charades.
6 students leave to play something different.
How many students are playing charades now?

9 students are playing charades.
5 students are on Team A.
The rest of the students are on Team B.
How many students are on Team B?

- How are these problems alike?
- How are they different?

Be prepared to share your thinking.

Student Responses

Sample responses:

1.
 - They are alike because both problems have 9 students. They are both about 4 corners. You can add or subtract to solve both problems.
 - They are different because in one problem some more students come and no new students come in the

students play at school. You are going to think about how the pairs of story problems are the same and different.”

- Read the first two story problems to the class.
- 1 minute: quiet think time
- “Talk to your partner about how the two problems are the same and different.”
- 4 minutes: partner discussion
- Share responses.
- Repeat with the next two problems.

Synthesis

- Display “9 students are playing charades. Some students act out sports and some act out animals. How many students act out sports? How many act out animals?”
- “How is this problem the same as the others? How is it different?” (It still has 9 as the total. This time, you don’t know either part.)

- other problem.
2.
 - They are alike because they both start with 9 students. They are both about charades. You can subtract to solve both problems.
 - They are different because in one problem some students leave but nobody leaves in the other problem.

Activity 2

🕒 20 min

Outdoor Games

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to solve a story problem and write an equation to match it. Students are divided into nine groups and each group gets one of the story problem cards from the Instructional master. Students individually solve the story problem and write an equation to match it before creating a poster with their group. During the synthesis, students explain how the equations match the story problem. When students recognize that the numbers in the equations represent specific quantities in the story problems, they reason abstractly and quantitatively (MP2).

🕒 Access for Students with Disabilities

Engagement: Internalize Self-Regulation. Provide students an opportunity to self-assess and reflect on their own progress. For example, ask students to check over their work to make sure they used drawings, numbers, or words to show their thinking, and also included at least one equation to show how they solved the problem.

Supports accessibility for: Organization, Conceptual Processing

Materials to Gather

Tools for creating a visual display

Materials to Copy

Story Problem Cards Grade 1 (groups of 2)

Required Preparation

- Create one set of Story Problem Cards from the Instructional master.

Student-facing Task Statement

Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

Sample response:

- Problem A: $7 + 2 = 9$



- Problem G: $4 + 5 = 9$



Launch

- Groups of 2–4, so there are 9 groups
- Give each group tools for creating a visual display and one of the story problems.

Activity

- "Now we will solve some problems about games students play outdoors."
- "Read your problem with your partner or group. Then solve the problem on your own. Show your thinking using drawings, numbers, or words. Write an equation to match the story problem."
- 4 minutes: independent work time
- "Work with your partner or group to agree on the answer to the story problem and make a display of your work. If you showed your thinking in different ways, include them all on the poster."
- 6 minutes: small-group work time
- Monitor for 2–3 posters in which the representation is clear, labeled, and has accurate equations.

Synthesis

- Display previously identified posters.
- "How does the equation each group wrote match the story problem?"

Lesson Synthesis

🕒 10 min

Display and read problem G.

9 students are jumping Double Dutch.

4 students are jumping rope by themselves.

How many fewer students are jumping rope on their own than playing Double Dutch?

Write $9 - 4 = \boxed{5}$ and $\boxed{5} + 4 = 9$.

“Today we used different equations to represent story problems. How do each of these equations match this problem?”

Lesson 18: Equations with Unknowns

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.D.8

Teacher-facing Learning Goals

- Interpret equations with a symbol for the unknown in relation to story problems.
- Solve a variety of story problem types.

Student-facing Learning Goals

- Let's make sense of equations with empty boxes.

Lesson Purpose

The purpose of this lesson is for students to interpret equations with a symbol for the unknown and connect them to story problems.

In the previous lesson, students compared different types of story problems. They solved story problems and wrote equations to match the problems. In this lesson, students work with a symbol for the unknown in an equation for the first time. A box is used for the unknown to build on the previous work in the unit where students put a box around the number in the equation that answered the question. In this lesson, students explain how their equation matches the story by relating it to the quantities and the unknown in the story problem.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR6 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 2

Materials to Copy

- Equation Cards Grade 1 (groups of 2): Activity 1
- Story Problem Cards Grade 1 (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Reflect on how comfortable your students are asking questions of you and of each other. What can you do to encourage students to ask questions?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Lin's Bingo Chips

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lin has 5 bingo chips on her board.
 She also has some chips on the table.
 All together she has 9 bingo chips.
 How many bingo chips does Lin have on the table?

Circle 2 equations that match the story problem.

$$9 - 5 = \square$$

$$5 + \square = 9$$

$$5 - 9 = \square$$

$$5 + 9 = \square$$

Student Responses

$$9 - 5 = \square, 5 + \square = 9$$

----- **Begin Lesson** -----

Warm-up

 10 min

Notice and Wonder: Equations with an Unknown

Standards Alignments

Addressing 1.OA.D.8

The purpose of this warm-up is to introduce equations with a symbol for the unknown value. While students may notice and wonder many things about this equation, how the equation relates to the image is the important discussion point. When students notice that the unknown value represents a specific quantity within the image, they reason abstractly and quantitatively (MP2).

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?



$$4 + \square = 10$$

Student Responses

Students may notice:

- There are basketballs in one bag.
- There are 4 basketballs and a 4 in the equation.
- We can't see what is in the other bag.
- We need to put a 6 in the box.

Students may wonder:

- What is in the other bag?
- Are there 10 balls altogether because the equation has a total of 10?

Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- "How does the equation with the unknown value match the picture?" (There are 4 basketballs in the open bag and there are some more things in the other bag but we don't know how many. There must be 10 altogether.)

- Does the box represent the other bag?

Activity 1

⌚ 20 min

Match Stories and Equations

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to match story problems to equations with a symbol for the unknown (MP2). Each equation is written to match the way the numbers are presented in the story problem. Problem G has more than one equation, which prompts students to discuss the relationship between addition and subtraction (MP7). During the synthesis, students discuss how an equation with a symbol for the unknown matches a Take From, Result Unknown story problem.

Access for Students with Disabilities

Representation: Access for Perception. Provide appropriate reading accommodations and supports to ensure student access to story problems.

Supports accessibility for: Language, Memory

Materials to Copy

Equation Cards Grade 1 (groups of 2), Story Problem Cards Grade 1 (groups of 2)

Required Preparation

- Create a set of Story Problem Cards and Equation Cards for each group of 2.

Student Responses

1. $7 + 2 = \square$ (card A)
2. $6 + \square = 9$ (card B)
3. $9 - 6 = \square$ (card C)
4. $4 + 5 = \square$ (card D)

Launch

- Groups of 2
- Give each group a set of both cards.

Activity

- “You have two sets of cards. One set of

5. $9 = 5 + \square$ (card E)
 6. $9 = \square + \square$ (card F)
 7. $9 - 4 = \square$ (card G), $9 = 4 + \square$ (card G)
 8. $3 + \square = 9$ (card H)
 9. $7 + \square = 9$ (card I)

cards has the story problems we used in the last lesson. The other set of cards has equations with unknown values."

- "Work with your partner to match the story problems to the equations. One story has more than one equation. Be sure you can explain how you know they match."
- 10 minutes: partner work time

Synthesis

- "Which equation matches Card C? How do you know?" ($9 - 6 = \square$. 9 represents how many students were sliding. 6 represents how many students leave so that is $9 - 6$. The box represents how many are left, which is the answer to the problem.)
- Repeat for problems F and H.
- Display equation cards 6 and 8.
- "What do you notice about these equations?" (They both have a total of 9 and one part is 4. The other part is the unknown. They both match problem G.)
- "How does each of these equations match the story problem?" (There are 9 students jumping Double Dutch and 4 students jumping on their own. I need to find the difference, so I can subtract $9 - 4$ to find the answer or I can say that $9 = 4 + \square$. 9 equals 4 plus some more students.)

Activity 2

🕒 15 min

Which Equation?

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.D.8

The purpose of this activity is for students to interpret two different equations with a symbol for the unknown in relation to a story problem. Students are presented with a Put Together, Addend Unknown story problem and two equations that match it, which allows students to further explore the relationship between addition and subtraction. Students explain how each equation matches the story problem and make connections between them. When students interpret different equations in terms of a story problem, they model with mathematics (MP4).

Access for English Learners

Reading: MLR6 Three Reads. Display only the problem, without revealing the question. “We are going to read this story 3 times.” After the 1st Read: “Tell your partner what this story is about.” After the 2nd Read: “What are all the things we can count in this story?” (number of students playing bingo, number of students using blue chips, number using yellow chips, number of other students). Reveal the question. After the 3rd Read: “What are different ways we can solve this problem?”

Advances: Reading, Representing

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

9 students are playing bingo.
3 students are using blue chips to cover their boards.
The other students are using yellow chips.
How many students are using yellow chips?

Explain how each equation matches the story problem.

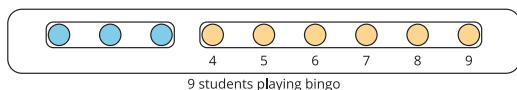
Show your thinking using drawings, numbers, or words.

1. Clare wrote $3 + \square = 9$

2. Jada wrote $9 - 3 = \square$

Student Responses

1. Sample response:



Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.
- “We are going to look at one more story and two equations that match. This story is about students playing the game called bingo.”

Activity

- Read the task statement.
- 5 minutes: independent work time
- 4 minutes: partner discussion
- Monitor for students who create a clear drawing and can use it to explain how each equation matches the story.

Synthesis

- Invite previously identified students to

$3 + \boxed{6} = 9$

2. Sample response: There are 9 students playing bingo. I can subtract the 3 who are using blue chips to find out how many are using yellow chips. $9 - 3 = \boxed{6}$

share.

- “How do the equations relate to each other?” (The second equation can be used to find the missing number in the first equation. The number that goes in the box is the same.)

Lesson Synthesis

🕒 10 min

“Today, we saw that for some story problems, there are addition and subtraction equations that can match the problem. Which kind of equation do you prefer to write? Why?”

Complete Cool-Down

Response to Student Thinking

Students circle one equation that matches the story problem.

Next Day Support

- During the launch of the next day's activity, have students use two-color counters to represent the problem in the cool-down and how the two different equations match the problem.

Lesson 19: Story Problems and Equations

Standards Alignments

Addressing 1.NBT.A.1, 1.OA.A.1, 1.OA.B.4

Teacher-facing Learning Goals

- Solve a variety of story problem types.
- Write two different equations to match a story problem.

Student-facing Learning Goals

- Let's write 2 equations to match each story problem.

Lesson Purpose

The purpose of this lesson is for students to write two different equations to match a story problem.

Students are encouraged to write an equation with a symbol for the answer to the question, but they are not required to. Students may write a second equation using the relationship between addition and subtraction, the commutative property, or the meaning of the equal sign.

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR6 (Activity 1)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters:
Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min

Teacher Reflection Question

How do you see your students demonstrating an understanding of the relationship between addition and subtraction? Are students working flexibly with addition and subtraction in order to find missing values?

Lesson Synthesis 10 min

Cool-down 5 min

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Beans and Rocks

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

5 students are playing with beans.

8 students are playing with small rocks.

How many more students are playing with rocks than beans?

Show your thinking using drawings, numbers, or words.

Equation: _____

Equation: _____

Student Responses

Sample responses:

- $5 + \boxed{3} = 8$
- $5 + \square = 8$
- $8 - 5 = \boxed{3}$
- $8 - 5 = \square$

----- Begin Lesson -----

Warm-up

🕒 10 min

Choral Count: 0-100 and Back Again

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this Choral Count is to invite students to practice counting by 10 and notice patterns in the count. These understandings help students develop fluency with the count sequence and will be helpful as students begin working with numbers beyond 10.

Instructional Routines

Choral Count

Student Responses

Record the forward count in one column, and the backward count in a new column next to the first.

Sample responses:

- Both columns have the same numbers.
- The first column counts up from 1–10 and the next column counts down from 10–1.
- Each row has two numbers that make 100.

Launch

- "Count by 10, starting at 0."
- Record as students count.
- Stop counting and recording at 100.
- "Count backward by 10, starting at 100."
- Record as students count.
- Stop counting and recording at 0.

Activity

- "What patterns do you see?"
- 1–2 minutes: quiet think time
- Record responses.

Synthesis

- "How did you know what number would come next as you counted backward?"

Activity 1

Lotería

 20 min

 PLC Activity

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4

The purpose of this activity is for students to write two equations to match each story problem. Students solve the problems in any way that makes sense to them. They may write an equation in which the total is before the equal sign, or that uses the add in any order property. Students may write equations with a box around the answer, an empty box for the unknown, or a combination of both.

The story problems in this activity are about the Mexican game, Lotería. During the launch, students learn how the game is played and some similarities between Lotería and Bingo. Before sharing information about the game, ask students if anyone has heard of this game, and what they know about how it is played. Consider showing students pictures of Lotería boards and cards.

Access for English Learners

MLR6 Three Reads. Keep books or devices closed. To launch this activity, display only the problem stem, without revealing the question. “We are going to read this story problem three times.” After the 1st Read: “Tell your partner what happened in the story.” After the 2nd Read: “What are all the things we can count in this story?” Reveal the question. After the 3rd Read: “What are different ways we can solve this problem?”

Advances: Reading, Representing

Access for Students with Disabilities

Engagement: Internalize Self-Regulation. Synthesis: Provide students an opportunity to self-assess and reflect on their own progress. For example, ask students to check over their work to make sure they used drawings, numbers, or words to solve the story problem, and also included an equation with a symbol for the unknown.

Supports accessibility for: Organization, Attention

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

- 10 picture cards have been called.
7 of the pictures are on Mai’s board.
How many of the pictures are not on Mai’s board?

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.

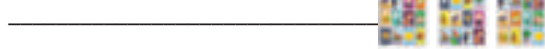
Show your thinking using drawings, numbers, or words.

Equation: _____

Equation: _____

2. Lin has 10 beans to play with.
3 of her beans fall on the floor.
How many beans does Lin have to play with now?
Show your thinking using drawings, numbers, or words.

Equation:



Equation:



3. 10 students are playing Lotería.
Some students are using beans on their boards.
Some students are using small rocks.
What are some ways to show how many students are using beans and how many are using small rocks?
Show your thinking using drawings, numbers, or words.

Equation: _____

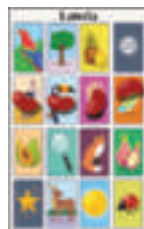
Equation: _____

4. Noah has 3 pictures covered on his board.
His brother has 10 pictures covered.
How many fewer pictures does Noah have covered than his brother?
Show your thinking using drawings, numbers, or words.

Equation:



Equation:



- "We have been solving problems about different games people play. Today we will solve problems about a game called Lotería. Has anyone played Lotería?"
- Share responses.
- If needed, "Lotería is a very popular game played in Mexico. It is similar to the game bingo. Instead of numbers, the caller picks a card with a picture on it. If the picture is on your board, you cover it. Many people use beans or small rocks to cover the pictures. When you have four pictures covered in a row you call out, 'Lotería!'"
- Consider displaying images of the game boards and picture cards used in the game.

Activity

- "Let's solve some problems about students playing Lotería."
- Read the task statement.
- 6 minutes: independent work time
- "Share your equations with your partner. Explain how they match the stories."
- 3 minutes: partner discussion

Synthesis

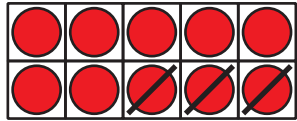
- Invite students to share the equations they wrote for each story problem and explain how they match the story.

Student Responses

1. 3. I used my fingers to show the 7 that were on her board and there were 3 left.

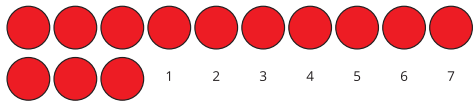
$$7 + \boxed{3} = 10, 10 - 7 = \boxed{3}$$

2. 7. $10 - 3 = \boxed{7}$, $3 + \boxed{7} = 10$



3. BBBB BBBB
 RRRR BRRR
 $5 + 5 = 10$ $6 + 4 = 10$

4. 7. $3 + \boxed{7} = 10$, $10 - 3 = \boxed{7}$



Activity 2

🕒 15 min

What's Your Question?

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4

The purpose of this activity is for students to make sense of story problems that do not include a question. In some story types, like Add To, Change Unknown, students can infer what the question in the story is without it being asked. In problem types like Compare, there are multiple questions that can be answered, all of which have different equations, solutions, and methods of solving. In presenting students with problems without questions, they strengthen their understanding of connections between story problems and the equations that match. When students formulate their own questions they need to make sense of the given information in order to understand what is given and what is unknown (MP1).

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

1. Clare has 3 pictures covered on her board. She covers some more. Now she has 9 pictures covered.

What is a question you can ask about the story?

Show your thinking using drawings, numbers, or words.

Which equation matches how you solved the story problem?

$$3 + \square = 9$$

$$9 - 3 = \square$$

2. Diego has 2 beans on his board. Noah has 9 beans on his board.

What is a question you can ask about the story?

Show your thinking using drawings, numbers, or words.

Which equation matches how you solved the story problem?

$$2 + \square = 9$$

$$9 - 2 = \square$$

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.

Activity

- "Now you will read story problems that don't have a question. Your job is to write a question for each problem. Then solve the problem."
- 5 minutes: independent work time
- "Share your question and equation with your partner."
- 3 minutes: partner discussion
- Monitor for students who wrote different questions for the problem with Diego and Noah.

Synthesis

- Invite previously identified students to share.
- Display the equations:
 - $2 + 9 = \square$
 - $9 - 2 = \square$
 - $2 + \square = 9$
- "Which question does each of these equations represent? How do you know?"


Student Responses


1. Sample response: How many more pictures does Clare cover? $3 + \square = 9$

I counted on from 3 to 9. 4, 5, 6, 7, 8, 9. That is 6.

2. Sample response: How many more beans does Noah have than Diego?

$$9 - 2 = \square$$

Diego 

Noah 

Lesson Synthesis

🕒 10 min

Write $3 + \square = 10$

"Today we wrote equations to match story problems. Some of the equations had an unknown value. How could you find the unknown value in this equation?" (I could count on from 3 until I got to 10. I could subtract $10 - 3$.)

Lesson 20: What's the Story?

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

Building Towards 1.OA.D.8

Teacher-facing Learning Goals

- Write a story problem to match an equation.

Student-facing Learning Goals

- Let's write story problems to match equations.

Lesson Purpose

The purpose of this lesson is for students to write story problems to match equations.

Students write story problems using given mathematical information: either an equation, or a number in an equation. In previous lessons, students solved a variety of story problems, matched equations with unknowns to story problems, and wrote equations to match story problems. In Activity 1, students build on their understanding of equations with unknowns by writing story problems that match an equation. In Activity 2, students write story problems that match a given answer. This lesson is the first time students write story problems to match equations or the answer to an equation.

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR7 (Activity 1)

Instructional Routines

How Many Do You See? (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1
- Materials from previous centers: Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Think about which students haven't shared their thinking in class lately. Were there missed opportunities to highlight their thinking during recent lessons? How can you take advantage of those opportunities when they arise?

Cool-down (to be completed at the end of the lesson)

🕒 0 min

Unit 2, Section D Checkpoint

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent the story with objects or drawings.
- Represent the story with equations.
- Explain how their representation matches the story.
- Answer the question correctly.

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

How Many Do You See: 10-Frames

Standards Alignments

Addressing 1.OA.C.6

The purpose of this How Many Do You See is to support students in gaining fluency with sums within 10. In this activity, students have an opportunity to notice and make use of structure (MP7) because they can use the structure of the 10-frame. Students can also determine how many dots they would need to add to fill the 10-frame.

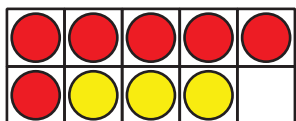
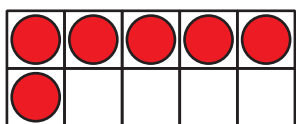
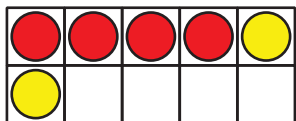
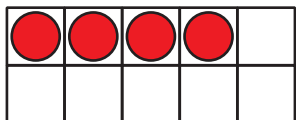
Instructional Routines

How Many Do You See?

Student-facing Task Statement

How many do you see?

How do you see them?



Student Responses

- 4: I see 2 and 2.
- 6: I see 4 and 2 more.
- 6: It's the same as the last one.
- 9: I know it's 9 because there is one missing from the 10-frame.

Launch

- Groups of 2
- "How many do you see? How do you see them?"
- Flash the image.
- 30 seconds: quiet think time

Activity

- Display the image.
- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.
- Repeat for each image.

Synthesis

- "Did anyone see the dots the same way but would explain it differently?"

Activity 1

🕒 15 min

Write Story Problems

Standards Alignments

Addressing	1.OA.A.1
Building Towards	1.OA.D.8

The purpose of this activity is for students to write story problems based on equations. Students are given equations with boxes for the unknowns. They may choose any two equations. When students write story problems from equations, they reason abstractly and quantitatively (MP2). During the synthesis, students discuss which equation matches the story problem and explain how they know.

🌐 Access for English Learners

MLR7 Compare and Connect. Synthesis: After both groups have presented their thinking, lead a discussion comparing, contrasting, and connecting the different approaches. Ask, “How are the groups’ approaches similar? How are they different? Do both approaches work? Why?”

Advances: Representing, Conversing

♿ Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Differentiate the degree of difficulty or complexity. Some students may benefit from starting with a familiar context for a story problem. For example, you may ask some students to use the context from previous lessons.

Supports accessibility for: Conceptual Processing, Attention

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

Choose 2 equations. Write a story problem for each equation.

- $3 + 5 = \square$
- $4 + \square = 7$

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.

- $10 - 5 = \square$
- $9 = 5 + \square$
- $\square + \square = 10$
- $6 + \square = 9$
- $8 = 2 + \square$

1. Equation: _____

Story Problem:

2. Equation: _____

Story Problem:

Student Responses

Sample responses:

1. $8 = 2 + \boxed{6}$. I have 8 pairs of socks. Two of the pairs of socks are black and the rest are white. How many pairs of socks are white?
2. $\square + \square = 10$. There are 10 pets at the pet store. Some of the pets are birds. Some of the pets are hamsters. What combinations of birds and hamsters could there be?

Activity

- "You have solved and represented different types of story problems. Today you will choose two equations and write a story problem for each equation. You may choose any two equations you want."
- 8–10 minutes: partner work time
- Monitor for 2–3 different story problems to share during the synthesis.

Synthesis

- Invite previously identified students to share.
- "Which equation matches the story they wrote? How does it match the story?"

Activity 2

🕒 10 min

I've Got the Answer

Standards Alignments

Addressing 1.OA.A.1

In this activity, students begin by choosing the answer to the problem they will write. They then write an equation that includes that number in any position. Finally, students write a story problem that matches their equation. This builds directly from the previous activity in which students wrote story problems, but has an added layer of complexity as students have to

generate their own equations from which to write the story problem. During the launch, students generate equations in which 6 is the answer. This list should be made available to students as they generate their own equations later in the activity. This activity is the second time that students will write story problems, so students may only write story problems for which the number they chose is the result or total.

Student-facing Task Statement

Circle a number that represents your answer.

2 3 4 5 6 7 8 9 10

Write an equation that includes the number you chose.

Put a box around the number.

Equation: _____

Write a story problem that matches your equation.

Share your story problem with a partner.
Solve your partner's story problem.

Write the equation that matches the story problem.

Equation: _____



Student Responses

Sample response: 9

$$4 + 5 = \boxed{9}$$

There are 4 students reading. There are 5 students drawing. There are 9 students altogether.

Launch

- Groups of 2
- Display $3 + 3 = 6$ and $10 - 6 = 4$.
- "What are some other equations we can write that have a value of 6?"
- 30 seconds: quiet think time
- Share and record responses.

Activity

- "We just wrote story problems to match given equations. Now you will write the equation and the story problem. You will choose a number. This number will be the answer to your story problem. You will write an equation with this number as the answer. Then write a story problem that matches the equation you wrote."
- 5 minutes: independent work time
- "Share your story problem and equation with your partner. Work together to make sure your story problem and equation match."
- 4 minutes: partner discussion
- Monitor for story problems with answers in different places to share during the lesson synthesis.

Synthesis

- "Let's share some story problems and think of equations that could represent each one."

Advancing Student Thinking

If students write story problems with an answer other than the number they circled, consider asking:

- "What equation did you write with the number you chose?"
- "How does that equation match the story you wrote?"

Activity 3

🕒 15 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting within 10. Students choose from any stage of previously introduced centers.

- Capture Squares
- Shake and Spill
- What's Behind My Back

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Capture Squares, Stages 1 and 2
 - Shake and Spill, Stages 3 and 4
 - What's Behind My Back, Stage 2

Student-facing Task Statement

Choose a center.

Capture Squares



Shake and Spill



What's Behind My Back



Launch

- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- “Clare was playing What’s Behind My Back with eight connecting cubes. Her partner hid some behind her back and showed her three cubes. Clare counted, ‘7, 6, 5.’ She said her partner was hiding five behind her back. What equation can we write to show how Clare solved the problem?”

$$(8 - 3 = \boxed{5})$$

Lesson Synthesis

🕒 10 min

Share a previously identified story problem.

“Today we wrote our own story problems. This is a problem one of your classmates wrote. What equations match this story problem?”

If needed, ask, “Where does the box go in the equation?”

If needed, ask, “What is an equation with an unknown value that represents this story problem?”

Student Section Summary

- We learned about equations where a number is missing and related them to story problems.

Lin has 5 bingo chips on her board.
 She also has some chips on the table.
 All together she has 9 bingo chips.
 How many chips does Lin have on the table?

$$9 - 5 = \square$$

and

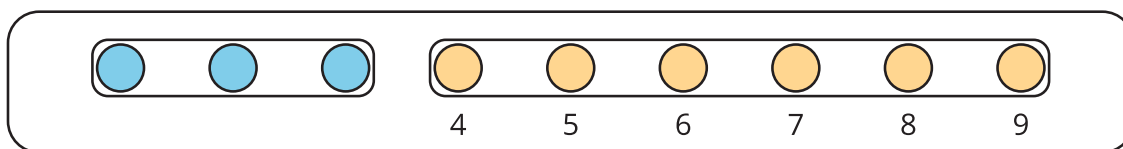
$$5 + \square = 9$$

- We thought about how addition and subtraction are related by solving story problems using both addition and subtraction.

9 students are playing bingo.
 3 students are using blue chips to cover their boards.
 The other students are using yellow chips.
 How many students are using yellow chips?

$$\text{Clare wrote } 3 + \square = 9$$

$$\text{Jada wrote } 9 - 3 = \square$$



9 students playing bingo

- We wrote our own story problems to match equations.

Try writing a story to match these equations.

$$7 + 2 = \square$$

$$6 + \square = 9$$

Lesson 21: Center Day 4

Standards Alignments

Addressing 1.OA.A.1, 1.OA.A.2, 1.OA.B.4, 1.OA.C.6, 1.OA.D.8

Teacher-facing Learning Goals

- Add and subtract within 10 in a way that makes sense to them.

Student-facing Learning Goals

- Let's play games to practice adding and subtracting.

Lesson Purpose

The purpose of this lesson is for students to practice adding and subtracting within 10.

In Activity 1, students learn a new center called Number Puzzles in which they use number cards to make addition and subtraction equations true. Students build number sense, problem-solving methods, and fluency with addition and subtraction within 10. In Activity 2, students choose from centers previously introduced that focus on adding and subtracting within 10.

Access for:

Students with Disabilities

- Engagement (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Materials from previous centers: Activity 2

Materials to Copy

- Number Puzzles Addition and Subtraction Stage 1 Gameboard (groups of 2): Activity 1
- Number Puzzles Digit Cards (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min

Teacher Reflection Question

Students had many opportunities throughout the unit to practice adding and subtracting within 10. Reflect on the progress students have made in building fluency within 10. Think about

Activity 2

25 min

Lesson Synthesis

10 min

ways you can continue this practice by incorporating addition and subtraction into other parts of the school day.

Begin Lesson

Warm-up

⌚ 10 min

Number Talk: Missing Values

Standards Alignments

Addressing 1.OA.D.8

The purpose of this Number Talk is to elicit strategies and understandings students have about the relationship between addition and subtraction. Each addition and subtraction equation represents the same part-whole relationship. These understandings help students develop fluency and will be helpful later in this lesson when students solve missing addend problems.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the missing value mentally.

- $4 + \square = 5$
- $5 - \square = 4$
- $6 + \square = 8$
- $8 - \square = 6$

Student Responses

- 1: 4 and 1 more is 5
- 1: take 1 away from 5 to get 4

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

- 2: 6 and 2 more is 8
- 2: if 2 plus 6 is 8, then 8 minus 2 is 6

Synthesis

- “How can finding the missing value in the first equation help you with the second equation?” (I know that 1 more than 4 is 5, so I also know that 1 less than 5 is 4.)

Activity 1

🕒 15 min

Introduce Number Puzzles, Within 10

Standards Alignments

Addressing 1.OA.D.8

The purpose of this activity is for students to learn a new center called Number Puzzles. Students use number cards to fill in addition and subtraction equations up to 10 on a game board. The missing values are in different places in the equations and each number card may only be used once. Students build fluency for addition and subtraction within 10.

Materials to Copy

Number Puzzles Addition and Subtraction Stage 1 Gameboard (groups of 2), Number Puzzles Digit Cards (groups of 2)

Required Preparation

- Create a set of Number Puzzles Cards from the Instructional master for each group of 2.

Launch

- Groups of 2
- Give each group a set of cards and a game board.
- “We are going to learn a new center called Number Puzzles.”
- Display a game board.
- “I need to place my number cards so that

every equation is true. I can only use each number card once.”

- “Let’s try some together. Look at the first equation. What number cards could I put on the board to make the equation true?”
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- Repeat 1–2 more times, as needed.

Activity

- “Use your number cards to play the game. Complete a puzzle before moving to the next one. Finish as many as you can.”
- 10 minutes: partner work time

Synthesis

- “What methods did you use to make sure you were putting each number in the right place?”

Activity 2

🕒 25 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.A.1, 1.OA.A.2, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting within 10. Students choose from any stage of previously introduced centers.

- Capture Squares
- Math Stories
- What’s Behind My Back

Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Use visible timers or audible alerts to help learners anticipate and prepare to transition between activities.

Supports accessibility for: Attention, Organization

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Capture Squares, Stages 1 and 2
 - Math Stories, Stage 4
 - What's Behind My Back, Stage 2

Student-facing Task Statement

Choose a center.

Capture Squares



Math Stories



What's Behind My Back



Launch

- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do first.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time
- “Choose what you would like to do next.”
- 10 minutes: center work time

Synthesis

- “Tell your partner your favorite thing about center time and why it is your favorite.”

Lesson Synthesis

🕒 10 min

"Today we worked with partners during center time. What went well? What can we continue to work on?"

Lesson 22: Story Problems and Equations (Optional)

Standards Alignments

Addressing 1.OA.A, 1.OA.B.4

Teacher-facing Learning Goals

- Use data to ask and answer questions.
- Use data to write equations.
- Write equations that represent a story problem.

Student-facing Learning Goals

- Let's write our own equations.

Lesson Purpose

The purpose of this lesson is for students to build their understanding of the relationship between addition and subtraction and the meaning of the equal sign to represent data with equations.

This lesson is optional because it does not address any new mathematical content standards. This lesson does provide students with an opportunity to apply precursor skills of mathematical modeling. In the previous lessons, students solved new types of story problems within 10 using the relationship between addition and subtraction. They developed an understanding of the meaning of the equal sign and connected story problems to equations.

In this lesson, students use previously collected survey data to generate equations, story problems, and ask and answer questions. When students make choices about their approach, determine relevant numbers to use in their own equations, and determine appropriate ways to represent their own questions, they model with mathematics. (MP4)

If the modeling lesson was not completed in Unit 1, use the sample data provided or do a quick whole-class survey to generate data with 3 to 4 categories.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Materials from a previous activity: Activity 2
- Materials from a previous lesson: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Materials to Copy

- Revisit Data (groups of 1): Activity 1

Teacher Reflection Question

Think about a recent time from class when your students were confused. What did you do to support them in reasoning about their confusion together as a community of learners?

----- **Begin Lesson** -----

Warm-up

🕒 10 min

Notice and Wonder: Equations

Standards Alignments

Addressing 1.OA.B.4

The purpose of this warm-up is for students to look for and make use of structure in a set of related equations each having less information specified (MP7). The specific structure they might notice is that each expression on the left is equivalent to 9. Students may notice that the first two equations will result in the same thing, but there is flexibility with the end result of the last equation. The synthesis gives students an opportunity to make a story to represent the equation which they will continue to explore in the upcoming activities.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

$$4 + 5 = 9$$

$$4 + \square = 9$$

$$\square + \square = 9$$

Student Responses

- Students may notice:
 - There are three equations.
 - 9 is always on the right of the equal sign.
 - Two of them have unknowns.
 - The last equation has two unknowns.
- Students may wonder:
 - What goes in each box?
 - What do the equations represent?

Launch

- Groups of 2
- Display the image.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- “What goes in the boxes to make these equations true?”
- “What story might these equations match?”

Activity 1

⌚ 20 min

Revisit Data

Standards Alignments

Addressing 1.OA.A

The purpose of this activity is for students to write equations to represent the data they collected in Unit 1. Students can write any equation that makes sense to them.

This activity is intended to follow the last lesson of Unit 1. If that lesson was not completed, students can use sample data from the Instructional master to complete this task.

When students use real-world data that they collect and determine ways of fitting their data into an existing mathematical model—put-together problems with unknowns in various positions—they model with mathematics (MP4).

To make this activity more challenging, students can share only their equation. Then their partner looks at the data and determines what story the writer intended to represent.

Materials to Gather

Materials from a previous lesson

Materials to Copy

Revisit Data (groups of 1)

Required Preparation

- Gather survey data from the last lesson in the previous unit, Animals in the Jungle.

Student-facing Task Statement

Write at least 3 equations that match your survey data.

Student Responses

$$5 + 5 = 10$$

$$8 - 2 = 6$$

$$7 - 4 = 3$$

Launch

- Groups of 2
- Give each group the data or posters from the previous unit or the sample data from the Instructional master.
- "Take a look at the work you did a few weeks ago. Review what you investigated and what you discovered."
- 1 minute: quiet think time
- "Discuss with a partner."
- 2 minutes: partner discussion

Activity

- Read the task statement.
- 5 minutes: independent work time
- "Take turns telling your partner a story problem that matches the equations you wrote."
- 5 minutes: partner discussion

Synthesis

- "What did you notice about making up a story problem for your equation? Were some easier than others? Why were they easier?"

Activity 2

🕒 20 min

Questions and Answers

Standards Alignments

Addressing 1.OA.A

The purpose of this activity is for students to use their data to generate questions and represent the answer using an equation. Then students take turns asking and answering each other's questions.

🕒 Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Check for understanding by inviting students to rephrase directions in their own words.

Supports accessibility for: Memory, Organization

Materials to Gather

Materials from a previous activity

Required Preparation

Students need access to the survey data used in the previous activity.

Student-facing Task Statement

- How many more students liked _____ than liked _____? Show your thinking using drawings, numbers, or words.
Equation: _____
- How many fewer students liked _____ than liked _____?

Launch

- Groups of 2
- "We're going to use our data again. This time we will create how many more and how many fewer questions about your data that you will ask your classmates to answer."
- Read the task statement.
- "Use the categories in your survey data to complete the questions. You do not need to answer the questions."
- 3 minutes: independent work time

Show your thinking using drawings, numbers, or words.

Equation: _____

3. Write another story problem you could ask about your data.

Equation: _____

Student Responses

Sample responses:

- 5 more students like a bike than a car.
 $9 - 4 = \boxed{5}$
- 6 more students like pizza than a burger.
 $10 - 4 = \boxed{6}$
- How many students like a bike or a car? $9 + 4 = \boxed{13}$

Activity

- "Take turns asking and answering questions with your partner. After asking your question, let your partner show their work in your book."
- 10 minutes: partner work time

Synthesis

- "Clare asked, 'How many more students like pizza than burgers?' Her partner said six more people like pizza than burgers and wrote $10 - 4 = 6$."
- "How could we turn this 'more than' question into a 'fewer than' question? Does this change the equation you would write? Why or why not?"

Lesson Synthesis

🕒 10 min

"Today we looked at our survey results from Unit 1 again, and wrote different equations to answer questions about our data. That is an important thing that mathematicians and scientists do. When they learn new tools for investigating, they often go back to something they studied in the past to try to learn more from it."

"What new thing did you learn from this data that you had not realized the first time?"

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Family Support
Materials

Family Support Materials

Addition and Subtraction Story Problems

In this unit, students solve new types of story problems within 10. They develop an understanding of the meaning of the equal sign and connect story problems to equations.

Section A: Add To/Take From Story Problems

In this section, students revisit familiar story problem types. Students work formally with equations for the first time. They write equations such as $2 + 7 = \boxed{9}$ and learn to draw a box around the answer to the question in the story problem. Students work with problems where they have to figure out how much is being added:

Diego had 7 pencils.

His sister gave him some pencils.

Now, Diego has 9 pencils.

How many pencils did Diego's sister give him?

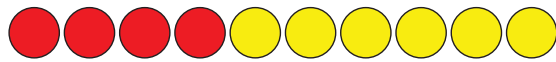
Students see that these problems can be solved by either addition or subtraction. They can solve this problem by counting on from 7 to 9 and write the equation $7 + \boxed{2} = 9$. Students can also solve this problem by taking away 7 from 9, and write the equation $9 - 7 = \boxed{2}$.

Section B: Put Together/Take Apart Problems

In this section, students solve problems where two groups are put together. In some problems they find the total, and in other problems the total is given and they find the missing group. Students solve problems in the context of Shake and Spill, a game that uses two-color counters.

Counters are put into a cup and spilled out. Students make observations about what they see or different combinations that might occur.

Tyler is playing Shake and Spill. During his first round he spilled these counters.



Write 2 equations to represent his counters.

Show other combinations of red and yellow counters that Tyler could spill.

With this type of problem, students can look at different kinds of equations, such as those with the total before the equal sign ($7 = 4 + 3$).

Section C: Compare Story Problems

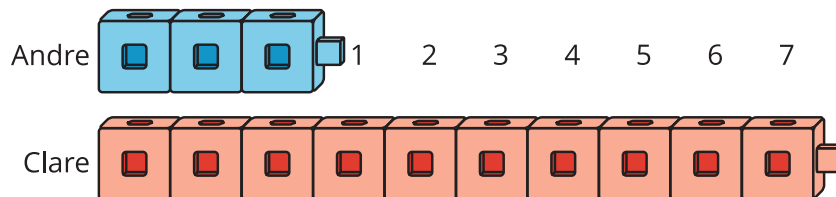
In this section, students solve story problems where they find “how many more” or “how many fewer” one group has than another group, such as:

There are 8 glue sticks and 3 scissors at the art station.

How many fewer scissors are there than glue sticks?

Students think about the relationship between addition and subtraction. They start by considering how many they need to add to make two towers the same length. For example:

How many more cubes does Clare have than Andre?



For this type of problem, students may count the extra cubes in Clare's tower to find the answer. They may start at 3 and count up to 10 or start at 10 and count back to 3. Students analyze both addition ($3 + 7 = 10$) and subtraction ($10 - 3 = 7$) equations.

Section D: All Kinds of Story Problems

This section brings the work of the unit together as students solve a variety of problem types and make sense of equations with a symbol for the unknown, such as $10 = \square + 6$.

Try it at home!

Near the end of the unit, ask your student to solve the following word problems:

1. Clare has 8 pencils. Andre has 10 pencils. How many more pencils does Andre have?
2. Diego had 6 pens. His mother gave him some pens. Now he has 9 pens. How many pens did Diego's mother give him?

Questions that may be helpful as they work:

- How could you draw the problem?
- How can you count on or take away to find the answer?
- What equation can you write to represent this problem?

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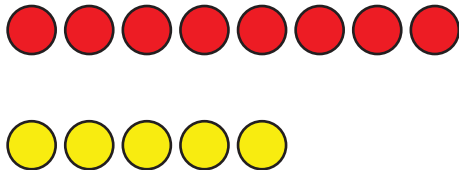
Unit Assessments

Check Your Readiness A, B, C and D
End-of-Unit Assessment

Addition and Subtraction Story Problems: End-of-Unit Assessment

1. Use the picture to find the value of $8 - 5$.

Show your thinking using drawings, numbers, or words.



2. After recess, Tyler collected 6 footballs.

Then he collected some baseballs.

Altogether, Tyler collected 10 balls.

How many baseballs did Tyler collect?

Show your thinking with drawings, numbers, or words.

Write an equation to match the story problem.

3. Priya read 9 books.

Tyler read 5 books.

How many more books did Priya read than Tyler?

Show your thinking with drawings, numbers, or words.

Write an equation to match the story problem.

4. Mai drew 2 stars in her notebook.

Then she drew some hearts.

Now there are 8 shapes altogether.

How many hearts did Mai draw in her notebook?

Circle 2 equations that match the story.

A. $\square - 8 = 2$

B. $2 + \square = 8$

C. $8 - 2 = \square$

D. $\square + 2 = 10$

E. $2 + 8 = \square$

5. Circle 3 true equations.

A. $5 + 4 = 9$

B. $3 = 8 + 5$

C. $4 = 10 - 6$

D. $9 - 8 = 1$

E. $7 + 1 = 6$

6. Find the number that makes each equation true.

a. $\square + 3 = 9$

b. $5 = 2 + \square$

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Assessment Answer Keys

Check Your Readiness A, B, C and D
End-of-Unit Assessment

Assessment Answer Keys

Assessment: Section A Checkpoint

Teacher Instructions

A full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

Add To and Take From Story Problems

- Solve Add To and Take From, Result Unknown and Add To, Change Unknown problems.
 - Retell the story.
 - Represent the story with objects or drawings.
 - Represent the story with equations.
 - Explain how their representation matches the story.
 - Answer the question correctly.
- Understand the meaning of the equal sign.
 - Represent the story with equations.

Assessment: Section B Checkpoint

Teacher Instructions

A full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

Put Together/Take Apart Story Problems

- Solve Put Together/Take Apart problems with unknowns in different positions.
 - Retell the story.
 - Represent the story with objects or drawings.
 - Explain how their representation matches the story.
 - Answer the question correctly.
- Write equations to represent problems.
 - Represent the story with equations.

Assessment: Section C Checkpoint

Teacher Instructions

A full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

Compare Story Problems

- Solve Compare, Difference Unknown problems.
- Relate addition and subtraction.
 - Retell the story.
 - Represent the story with objects or drawings.
 - Represent the story with equations.
 - Explain how their representation matches the story.
 - Answer the question correctly.

Assessment: Section D Checkpoint

Teacher Instructions

A full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

All Kinds of Story Problems

- Solve different types of story problems, limited to those learned in this unit.
- Apply understanding of the meaning of the equal sign to make sense of equations with a symbol for the unknown.
 - Retell the story.
 - Represent the story with objects or drawings.
 - Represent the story with equations.
 - Explain how their representation matches the story.
 - Answer the question correctly.

Assessment: End-of-Unit Assessment

Teacher Instructions

Give students access to 10-frames and connecting cubes or two-color counters.

Problem 1

Standards Alignments

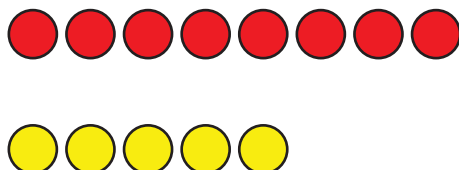
Addressing 1.OA.C.5

Narrative

Students use an image to explain how to find the difference between two quantities. They may interpret the image in different ways. For example, students may notice that there are 3 more red circles than yellow circles by counting the extra red circles. They could also imagine taking away 5 red circles and then notice that there are 3 left.

Use the picture to find the value of $8 - 5$.

Show your thinking using drawings, numbers, or words.



Solution

$8 - 5 = 3$. Sample response: I could add 3 more yellow circles to make them the same, so the difference is 3.

Problem 2

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Narrative

Students solve a Put Together, Addend Unknown problem. The total in this case is 10, so in addition to strategies such as drawing a picture and counting on or counting back, students may

just “know” that 6 and 4 combined make 10.

After recess, Tyler collected 6 footballs.
Then he collected some baseballs.
Altogether, Tyler collected 10 balls.
How many baseballs did Tyler collect?
Show your thinking with drawings, numbers, or words.

Write an equation to match the story problem.

Solution

4. Sample response:



$$6 + 4 = 10 \text{ or } 10 - 6 = 4 \text{ or } 10 - 4 = 6$$

Problem 3

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Narrative

Students solve a Compare, Difference Unknown story problem within 10. They may solve this problem in a variety of ways, including:

- counting on
- counting back
- drawing a picture

Priya read 9 books.
Tyler read 5 books.
How many more books did Priya read than Tyler?
Show your thinking with drawings, numbers, or words.

Write an equation to match the story problem.

Solution

4. Sample response: 6, 7, 8, 9 makes 4 more books
 $5 + 4 = 9$ or $9 - 5 = 4$ or $9 - 4 = 5$

Problem 4

Standards Alignments

Addressing 1.OA.A.1, 1.OA.D

Narrative

Students choose equations which match an Add To, Change Unknown story problem. Students may select A or E if they think that they need to add 2 and 8, that is if they think that Mai drew 2 stars and that she drew 8 more hearts than stars. Students who select D have not read the problem carefully or have not understood the problem since 8 is part of the given information and is not the answer to the question.

Mai drew 2 stars in her notebook.
Then she drew some hearts.
Now there are 8 shapes altogether.
How many hearts did Mai draw in her notebook?
Circle 2 equations that match the story.

A. $\square - 8 = 2$

B. $2 + \square = 8$

C. $8 - 2 = \square$

D. $\square + 2 = 10$

E. $2 + 8 = \square$

Solution

["B", "C"]

Problem 5

Standards Alignments

Addressing 1.OA.D.7

Narrative

Students identify which addition and subtraction equations are true. Students may select B or E if they confuse the operations of addition and subtraction. They may not select A, C, or D if they make calculation errors and are building toward fluency for facts within 10.

Circle **3** true equations.

A. $5 + 4 = 9$

B. $3 = 8 + 5$

C. $4 = 10 - 6$

D. $9 - 8 = 1$

E. $7 + 1 = 6$

Solution

["A", "C", "D"]

Problem 6

Standards Alignments

Addressing 1.OA.D.8

Narrative

Students find the missing number to make addition equations true. They recognize that operations can be on either side of the equal sign. They may relate subtraction to addition to find the missing values but this is not an expectation and they are not expected to show their reasoning.

Find the number that makes each equation true.

a. $\square + 3 = 9$

b. $5 = 2 + \square$

Solution

a. 6

b. 3

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Lesson
Cool Downs

Lesson 2: Story Problems and Equations

Cool Down: Books on the Shelf

Mai put 5 books on the shelf.

Then Noah put 4 books on the shelf.

How many books are on the shelf now?

Show your thinking using drawings, numbers, or words.

Equation: _____

Lesson 4: Result or Change Unknown

Cool Down: Mai's Books

Mai has 3 books.

She gets some more books from the library.

Now she has 7.

How many more books did she get?

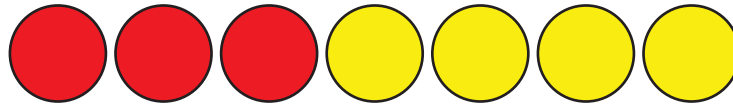
Show your thinking using drawings, numbers, or words.

Equation: _____

Lesson 7: Shake and Spill

Cool Down: Priya Plays Shake and Spill

Priya played Shake and Spill using 7 two-color counters. This is how her counters look.



Write an equation to match the counters.

Equation: _____

Explain how your equation matches Priya's counters.

Lesson 8: Shake, Spill, and Cover

Cool Down: Clare Plays Shake and Spill, Cover

Clare played a round of Shake and Spill, Cover using 9 counters. Her counters look like this.



How many counters are under the cup?

Show your thinking using drawings, numbers, or words.

Write an equation to match the counters.

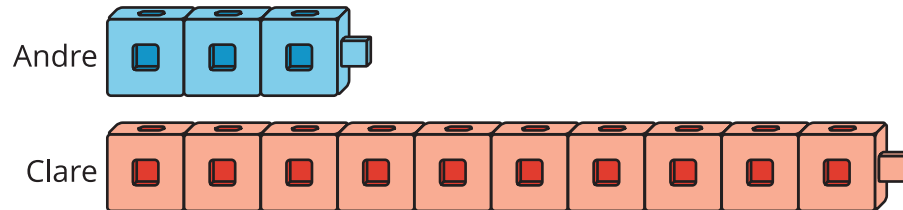
Equation: _____

Lesson 11: Make Them the Same

Cool Down: Make Them the Same

Andre has 3 cubes.

Clare has 10 cubes.



How can Andre and Clare make their towers have the same number of cubes?

Show your thinking using drawings, numbers, or words.

Lesson 12: School Supplies

Cool Down: Homework Papers

There are 8 students at the table.

There are 6 homework papers.

How many more students are there than homework papers?

Show your thinking using drawings, numbers, or words.

Equation: _____

Lesson 13: Compare Favorite Art Supply Data

Cool Down: Clare's Desk

pencils	erasers	crayons
9	4	7

How many fewer erasers than pencils are there?

Show your thinking using drawings, numbers, or words.

Lesson 18: Equations with Unknowns

Cool Down: Lin's Bingo Chips

Lin has 5 bingo chips on her board.

She also has some chips on the table.

All together she has 9 bingo chips.

How many bingo chips does Lin have on the table?

Circle 2 equations that match the story problem.

$$9 - 5 = \square$$

$$5 + \square = 9$$

$$5 - 9 = \square$$

$$5 + 9 = \square$$

Lesson 19: Story Problems and Equations

Cool Down: Beans and Rocks

5 students are playing with beans.

8 students are playing with small rocks.

How many more students are playing with rocks than beans?

Show your thinking using drawings, numbers, or words.

Equation: _____

Equation: _____

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Instructional Masters

Instructional Masters for Addition and Subtraction Story Problems

address	title	students written on?	students written per copy	requires cutting?	card stock recommended?	color paper recommended?
Activity Grade1.2.17.2	Story Problem Cards Grade 1	no	2	yes	no	no
Activity Grade1.2.18.1	Story Problem Cards Grade 1	no	2	yes	no	no
Activity Grade1.2.21.1	Number Puzzles Digit Cards	no	2	yes	no	no
Center	Number Puzzles Digit Cards	no	2	yes	no	no
Assessment Grade1.2	Checklist	yes	0	no	no	no
Assessment Grade1.2	Checklist	yes	0	no	no	no
Activity Grade1.2.16.1	Capture Squares Stage 2 Gameboard	yes	2	no	no	no
Center	Capture Squares Stage 2 Gameboard	yes	2	no	no	no
Activity Grade1.2.8.1	Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)	yes	1	no	no	no
Center	Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)	yes	1	no	no	no
Activity Grade1.2.18.1	Equation Cards Grade 1	no	2	yes	no	no
Assessment Grade1.2	Checklist	yes	0	no	no	no

Activity Grade1.2.22.1	Revisit Data	1	no	yes	no	no
Activity Grade1.2.7.1	Shake and Spill Stage 3 Recording Sheet Grade 1	1	yes	no	no	no
Center	Shake and Spill Stage 3 Recording Sheet Grade 1	1	yes	no	no	no
Assessment Grade1.2	Checklist	0	yes	no	no	no
Activity Grade1.2.5.1	Math Stories Stage 4 Recording Sheet	2	yes	no	no	no
Center	Math Stories Stage 4 Recording Sheet	2	yes	no	no	no
Activity Grade1.2.21.1	Number Puzzles Addition and Subtraction Stage 1 Gameboard	2	no	no	no	no
Center	Number Puzzles Addition and Subtraction Stage 1 Gameboard	2	no	no	no	no
Activity Grade1.2.5.1	Math Stories Stage 1 and 4 Pictures	8	no	no	no	no
Center	Math Stories Stage 1 and 4 Pictures	8	no	no	no	no
Activity Grade1.2.10.1	Capture Squares Stage 1 Gameboard	2	yes	no	no	no
Center	Capture Squares Stage 1 Gameboard	2	yes	no	no	no
Center	Sort and Display Stage 1 Recording Sheet	1	yes	no	no	no
Center	Check It Off Stage 1 Recording Sheet Grade K	1	yes	no	no	no
Center	Check It Off Stage 1 Recording Sheet Grade 1	1	yes	no	no	no

Center	Check It Off Stage 2 Recording Sheet	1	yes	no	no	no
Center	What's Behind My Back Stage 2 Recording Sheet Kindergarten	1	yes	no	no	no
Center	What's Behind My Back Stage 2 Recording Sheet Grade 1	1	yes	no	no	no
Center	Find the Pair Stage 2 Recording Sheet	1	yes	no	no	no
Center	Shake and Spill Stage 3 Recording Sheet Kindergarten	1	yes	no	no	no
Center	Shake and Spill Stage 4 Recording Sheet Kindergarten	1	yes	no	no	no

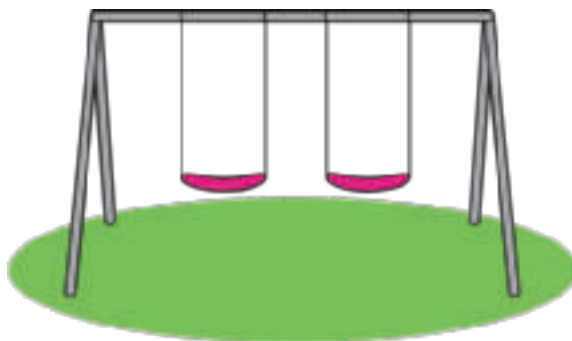
Problem A

There are 7 students playing hopscotch.
2 more come to play.
How many students are playing hopscotch now?



Problem B

There are 6 students on the swings.
Some more students come to play on the swings.
Now there are 9 students.
How many students came to the swings?



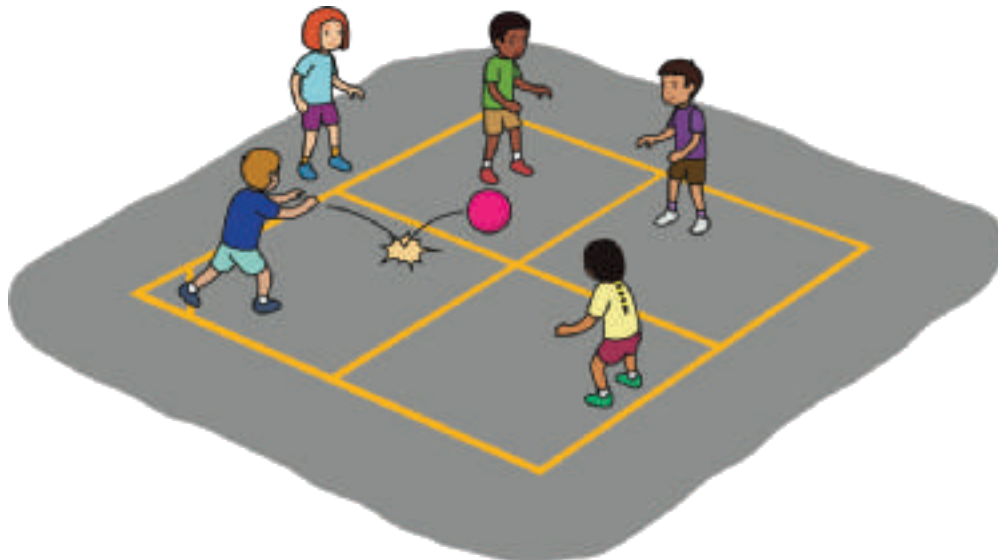
Problem C

There are 9 students using the slide.
6 leave the slide to go inside.
How many students are using the slide now?



Problem D

4 first graders are playing basketball on the blacktop.
5 second graders are playing four-square on the blacktop.
How many children are playing on the blacktop altogether?



Problem E

9 students are playing kickball.
5 students are on the red team.
The rest of the children are on the blue team.
How many children are on the blue team?



Problem F

9 students can fit on the jungle gym.
Some are hanging by their legs and some are hanging by their arms.
Show how the 9 students could look on the jungle gym.



Problem G

9 students are jumping double dutch.
4 students are jumping rope by themselves.
How many fewer students are jumping rope on their own than playing double dutch?



Problem H

3 students are playing tag.
9 students are running races.
How many more children are running races than playing tag?



Problem 1

9 students are reading by the fence.
7 students are reading picture books.
The rest are reading comic books.
How many students are reading comic books?



Problem A

There are 7 students playing hopscotch.
2 more come to play.
How many students are playing hopscotch now?



Problem B

There are 6 students on the swings.
Some more students come to play on the swings.
Now there are 9 students.
How many students came to the swings?



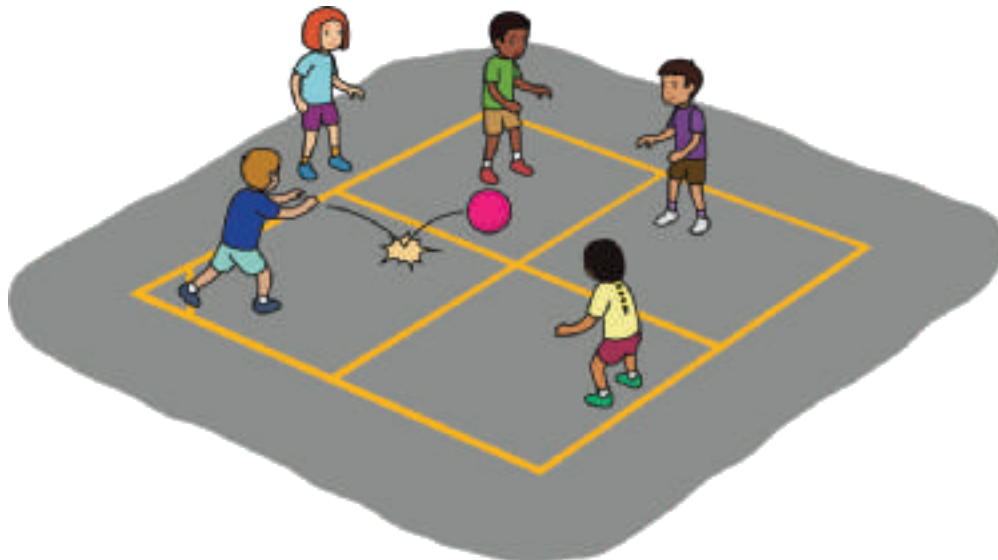
Problem C

There are 9 students using the slide.
6 leave the slide to go inside.
How many students are using the slide now?



Problem D

4 first graders are playing basketball on the blacktop.
5 second graders are playing four-square on the blacktop.
How many children are playing on the blacktop altogether?



Problem E

9 students are playing kickball.
5 students are on the red team.
The rest of the children are on the blue team.
How many children are on the blue team?



Problem F

9 students can fit on the jungle gym.
Some are hanging by their legs and some are hanging by their arms.
Show how the 9 students could look on the jungle gym.



Problem G

9 students are jumping double dutch.
4 students are jumping rope by themselves.
How many fewer students are jumping rope on their own than playing double dutch?



Problem H

3 students are playing tag.
9 students are running races.
How many more children are running races than playing tag?



Problem 1

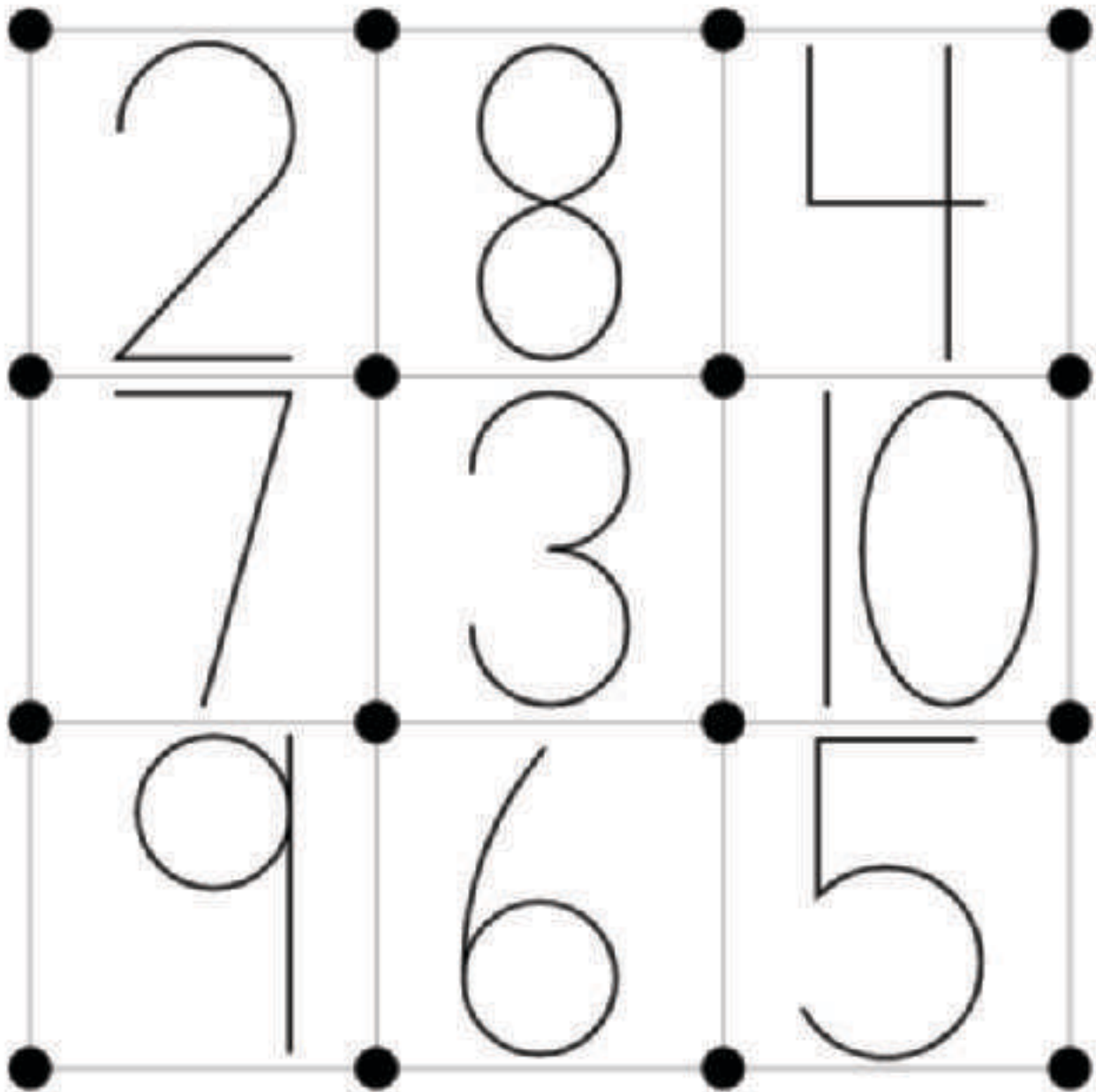
9 students are reading by the fence.
7 students are reading picture books.
The rest are reading comic books.
How many students are reading comic books?



Capture Squares Stage 2 Gameboard

Directions:

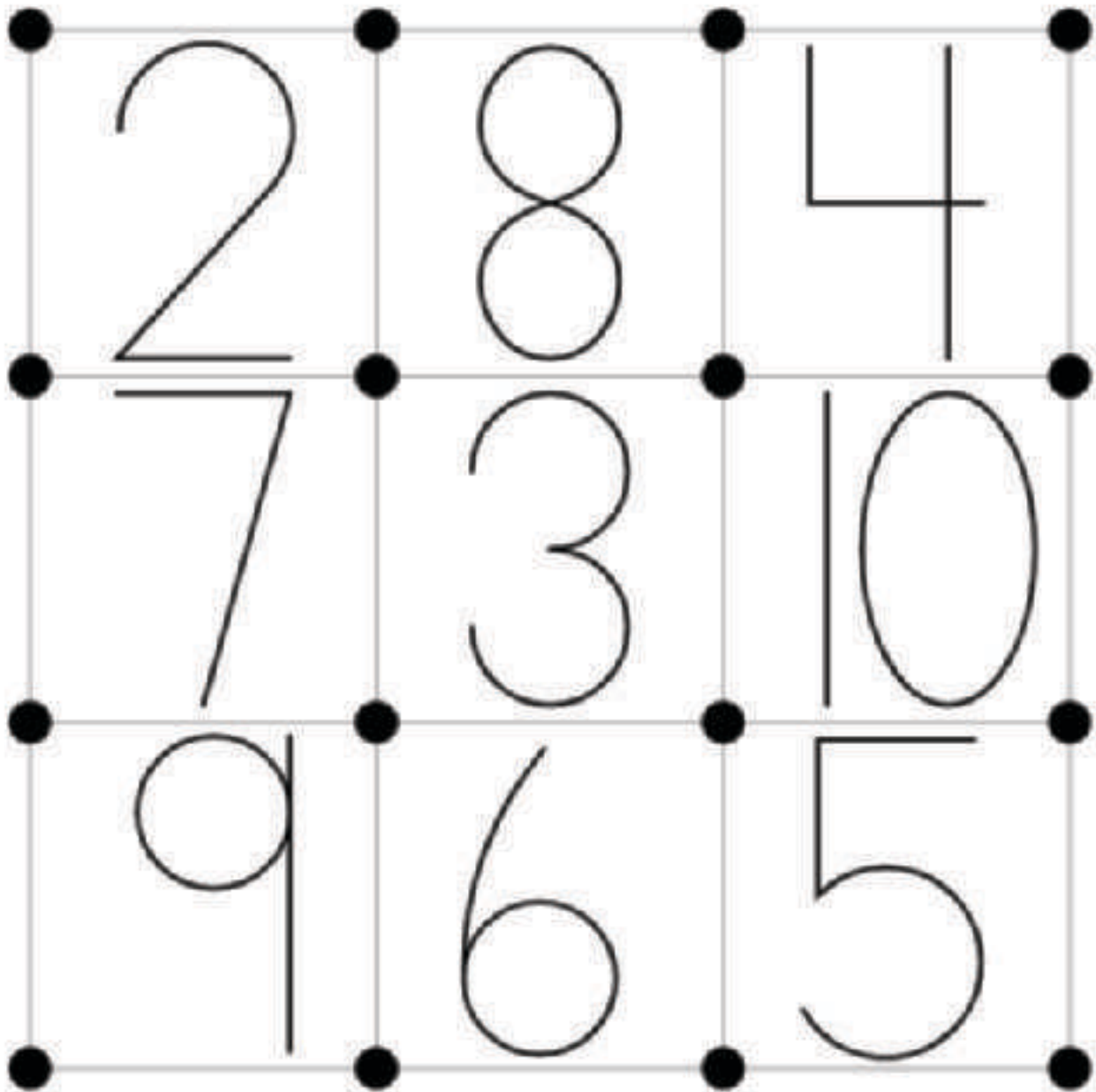
- On your turn:
 - Choose 2 number cards. Find the difference.
 - Choose a square on the gameboard that shows that number. Draw one line connecting any 2 dots around the number.
 - If you can't draw a line, choose 2 new cards.
 - If you draw a line that finishes a square around a number, shade in that box with your color.
- Take turns with your partner. The first player to shade in 3 boxes wins.



Capture Squares Stage 2 Gameboard

Directions:

- On your turn:
 - Choose 2 number cards. Find the difference.
 - Choose a square on the gameboard that shows that number. Draw one line connecting any 2 dots around the number.
 - If you can't draw a line, choose 2 new cards.
 - If you draw a line that finishes a square around a number, shade in that box with your color.
- Take turns with your partner. The first player to shade in 3 boxes wins.



Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)

Directions:

- Choose how many counters to put in the cup.
- Partner A: Close your eyes.
- Partner B: Shake and spill. Cover up the yellow counters with the cup.
- Partner A: Open your eyes and figure out how many counters are under the cup.
- Partner B: Show how many.
- Both partners: Record an equation.
- Switch roles and start the next round.



round:	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)

Directions:

- Choose how many counters to put in the cup.
- Partner A: Close your eyes.
- Partner B: Shake and spill. Cover up the yellow counters with the cup.
- Partner A: Open your eyes and figure out how many counters are under the cup.
- Partner B: Show how many.
- Both partners: Record an equation.
- Switch roles and start the next round.



round:	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Equation Cards Grade 1

Equation Cards Grade 1
Card 1

$$7 + 2 = \square$$

Equation Cards Grade 1
Card 2

$$6 + \square = 9$$

Equation Cards Grade 1
Card 3

$$9 = \square + \square$$

Equation Cards Grade 1
Card 4

$$9 - 6 = \square$$

Equation Cards Grade 1
Card 5

$$4 + 5 = \square$$

Equation Cards Grade 1
Card 6

$$9 - 4 = \square$$

Equation Cards Grade 1
Card 7

$$7 + \square = 9$$

Equation Cards Grade 1
Card 8

$$9 = 4 + \square$$

Equation Cards Grade 1
Card 9

$$3 + \square = 9$$

Equation Cards Grade 1
Card 10

$$9 = 5 + \square$$

Revisit Data
Set A

What kind of gift would you rather get?

gift	number of students
building blocks	IIIIII
art kit	I
action figure	I
sport equipment	I

Revisit Data
Set B

What would you rather eat for the rest of your life?

food	number of students
mac and cheese	5
pizza	4
sandwich	1
pasta	3

Revisit Data
Set C

What time do you go to sleep?

time	number of students
before 7	2
between 7 and 8	5
between 8 and 9	4
after 9	1

Revisit Data
Set D

What is your favorite season?

season	number of students
spring	IIII
summer	IIIIII
fall	III
winter	I

Shake and Spill Stage 3 Recording Sheet Grade 1

Directions:

- Choose how many counters to put in the cup.
- Partner A: Shake and spill.
- Both partners: Determine how many red counters and how many yellow counters there are and write an equation to show the total.
- Switch roles and start the next round.



round	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Shake and Spill Stage 3 Recording Sheet Grade 1

Directions:

- Choose how many counters to put in the cup.
- Partner A: Shake and spill.
- Both partners: Determine how many red counters and how many yellow counters there are and write an equation to show the total.
- Switch roles and start the next round.



round	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Directions:

- Partner A:
 - Choose one of the pictures.
 - Make up a story problem with addition or subtraction about the picture.
- Partner B: Solve the problem and write an equation that matches the story.
- Take turns.

picture: _____

equation: _____

picture: _____

equation: _____

picture: _____

equation: _____

picture: _____

equation: _____

Directions:

- Partner A:
 - Choose one of the pictures.
 - Make up a story problem with addition or subtraction about the picture.
- Partner B: Solve the problem and write an equation that matches the story.
- Take turns.

picture: _____

equation: _____

picture: _____

equation: _____

picture: _____

equation: _____

picture: _____

equation: _____

Puzzle 1

Make each equation true. Use number cards 0-9.

$6 = \square + \square$	$6 = \square + \square$
$6 = \square - \square$	$6 = \square - 2$
$6 = \square - \square$	$6 = \square - 1$

Puzzle 2

Make each equation true. Use number cards 0-9.

$7 = \square + \square$	$7 = \square + \square$
$7 = \square - \square$	$7 = \square - 2$
$7 = \square + \square$	$7 = \square - 1$

Puzzle 3

Make each equation true. Use number cards 0-9.

$8 = \square + \square$	$8 = \square + \square$
$8 = \square - 0$	$8 = \square - 1$
$8 = \square + \square$	Leftovers: $\square \square$

Puzzle 4

Make each equation true. Use number cards 0-9.

$9 = \square + \square$	$9 = \square + \square$
$9 = \square + \square$	$9 = \square + \square$
$9 = \square + \square$	Leftovers: $\square \square$

Puzzle 5

Make each equation true. Use number cards 0-9.

$10 = \square + 5$	$10 = \square + \square$
$10 = 8 + \square$	$10 = \square + \square$
$10 = \square + 2$	Leftovers: $\square \square$

Puzzle 1

Make each equation true. Use number cards 0-9.

$6 = \square + \square$	$6 = \square + \square$
$6 = \square - \square$	$6 = \square - 2$
$6 = \square - \square$	$6 = \square - 1$

Puzzle 2

Make each equation true. Use number cards 0-9.

$7 = \square + \square$	$7 = \square + \square$
$7 = \square - \square$	$7 = \square - 2$
$7 = \square + \square$	$7 = \square - 1$

Puzzle 3

Make each equation true. Use number cards 0-9.

$8 = \square + \square$	$8 = \square + \square$
$8 = \square - 0$	$8 = \square - 1$
$8 = \square + \square$	<p>Leftovers:</p> $\square \quad \square$

Puzzle 4

Make each equation true. Use number cards 0-9.

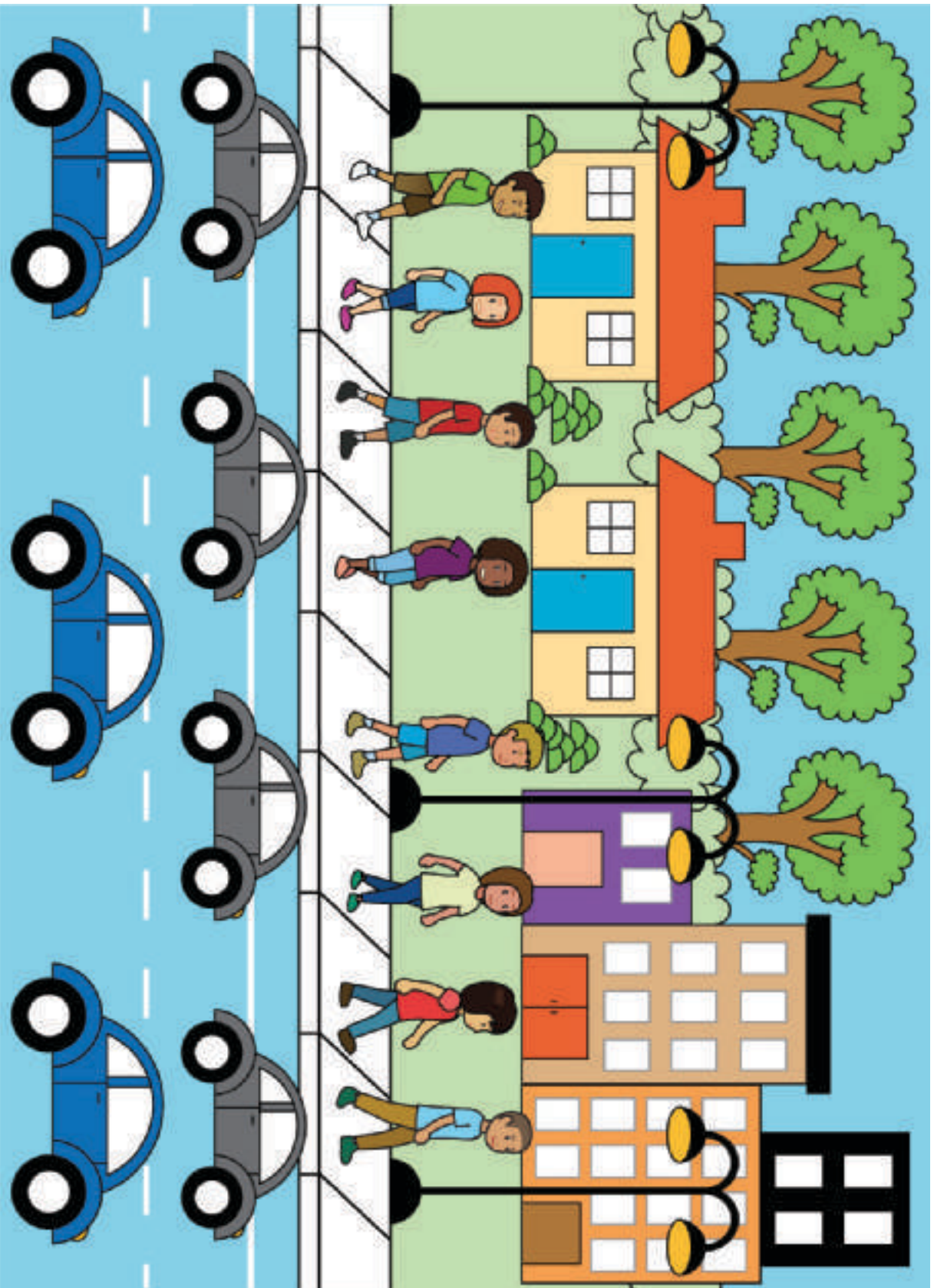
$9 = \square + \square$	$9 = \square + \square$
$9 = \square + \square$	$9 = \square + \square$
$9 = \square + \square$	Leftovers: $\square \square$

Puzzle 5

Make each equation true. Use number cards 0-9.

$10 = \square + 5$	$10 = \square + \square$
$10 = 8 + \square$	$10 = \square + \square$
$10 = \square + 2$	Leftovers: $\square \square$

Picture A



Picture B



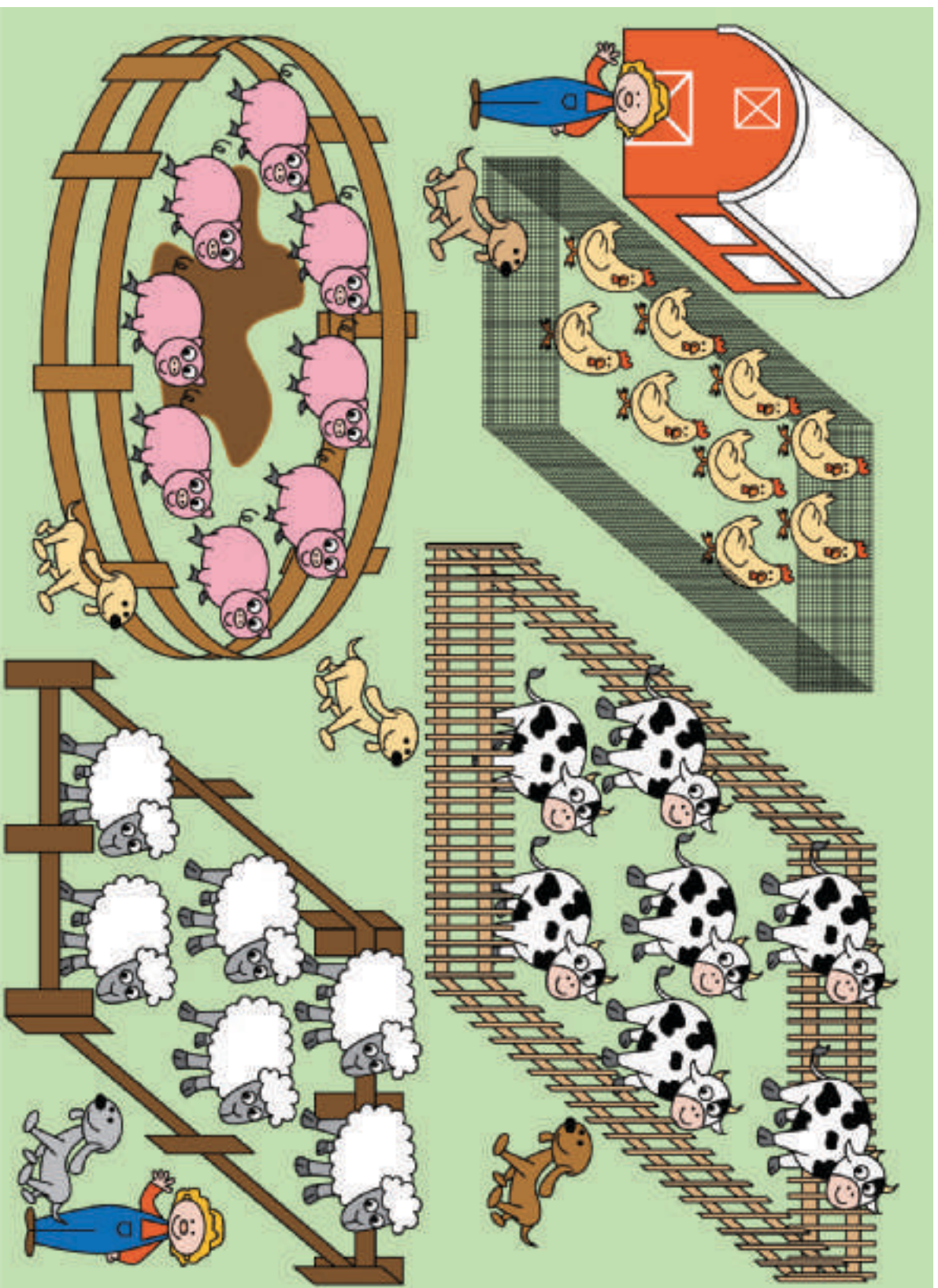
Picture C



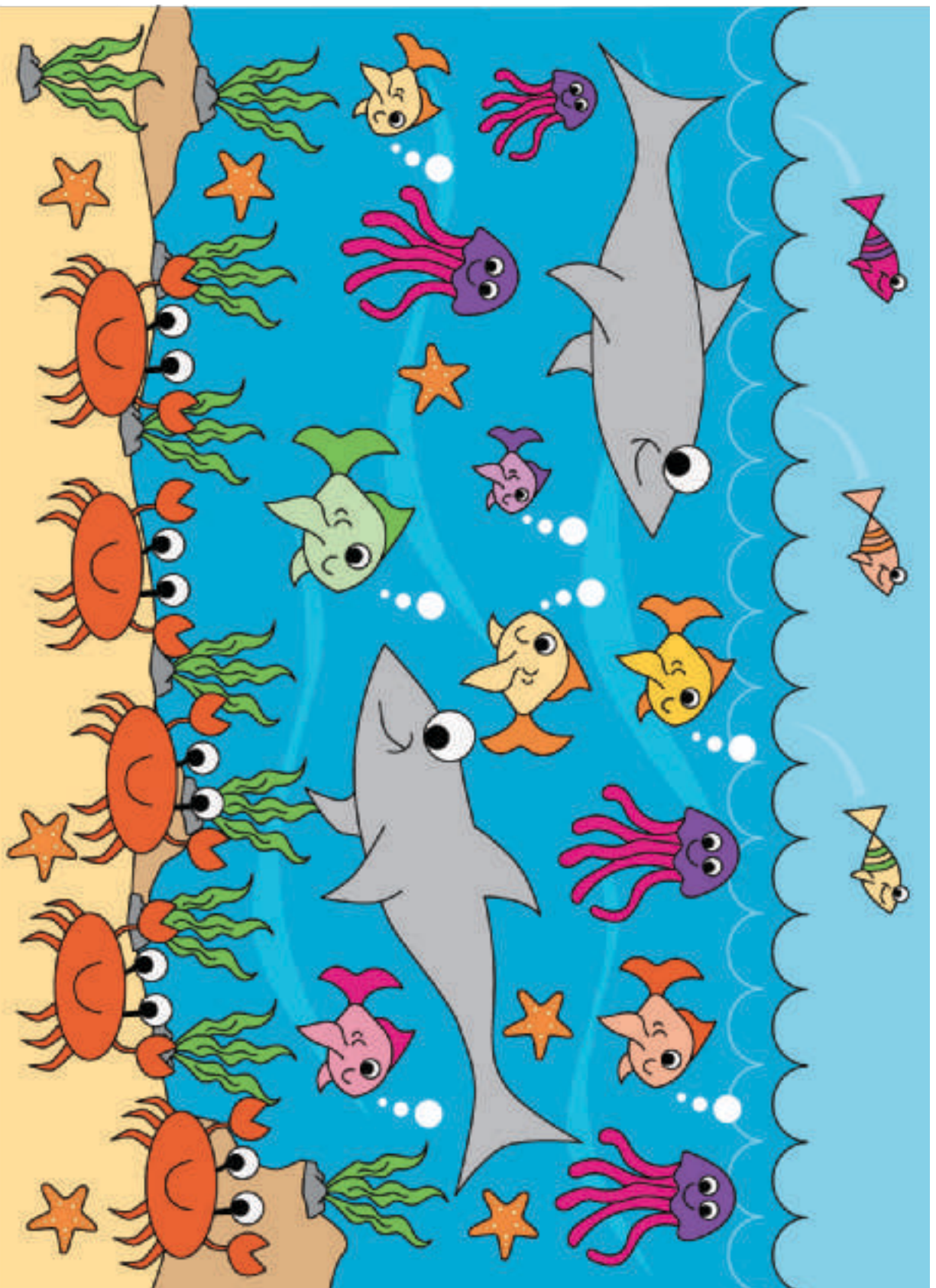
Picture D



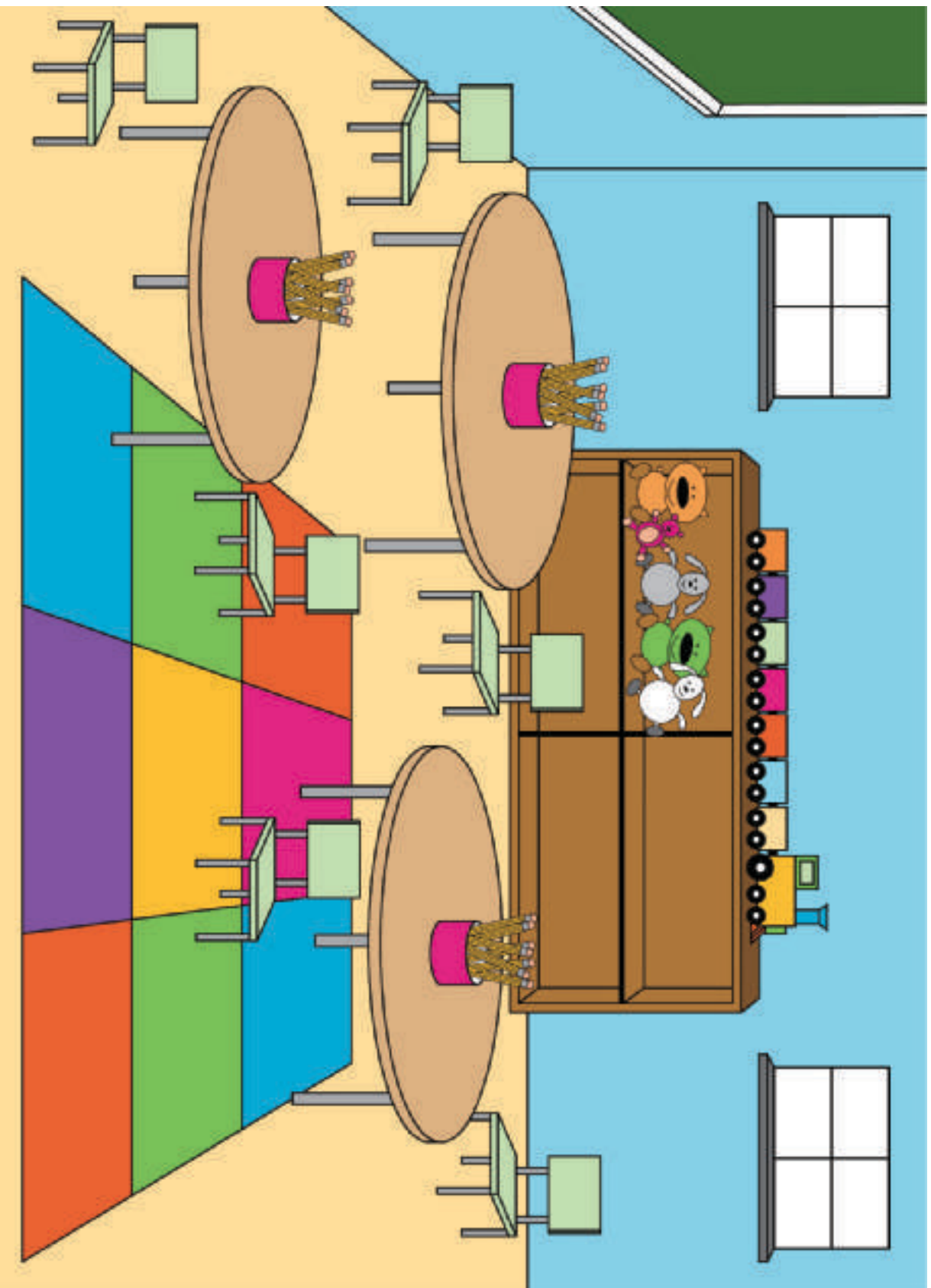
Picture E



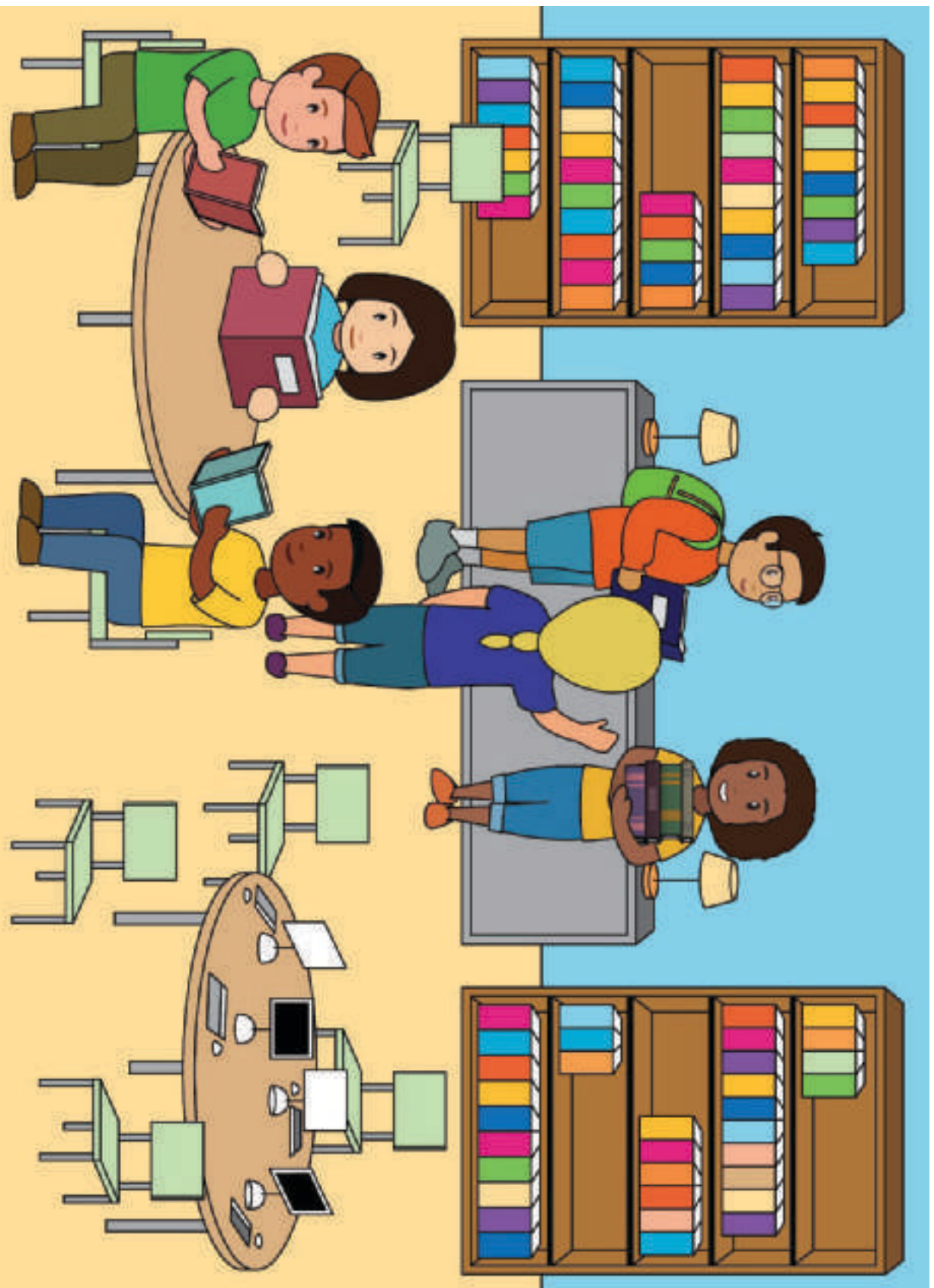
Picture F



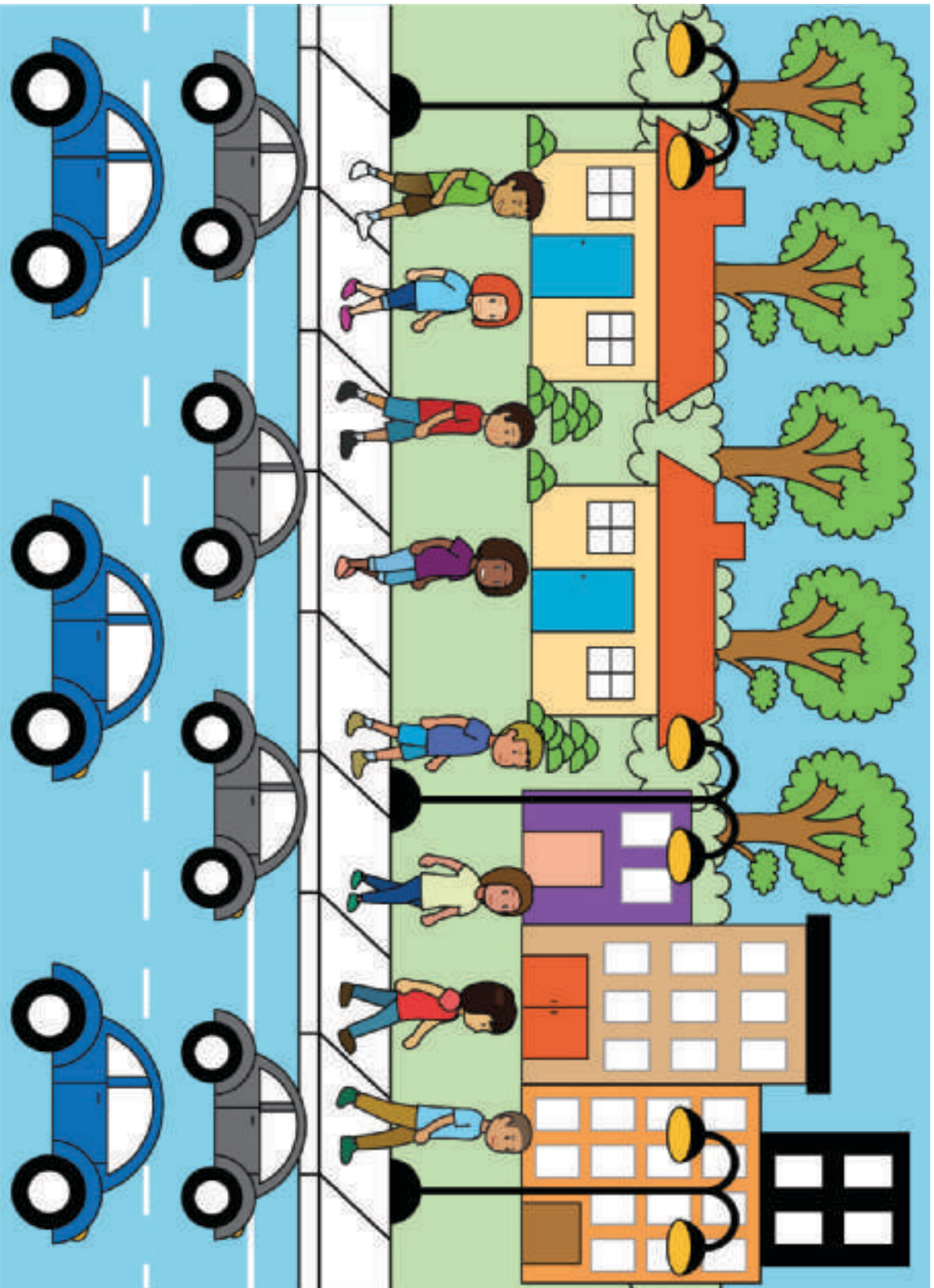
Picture G



Picture H



Picture A



Picture B



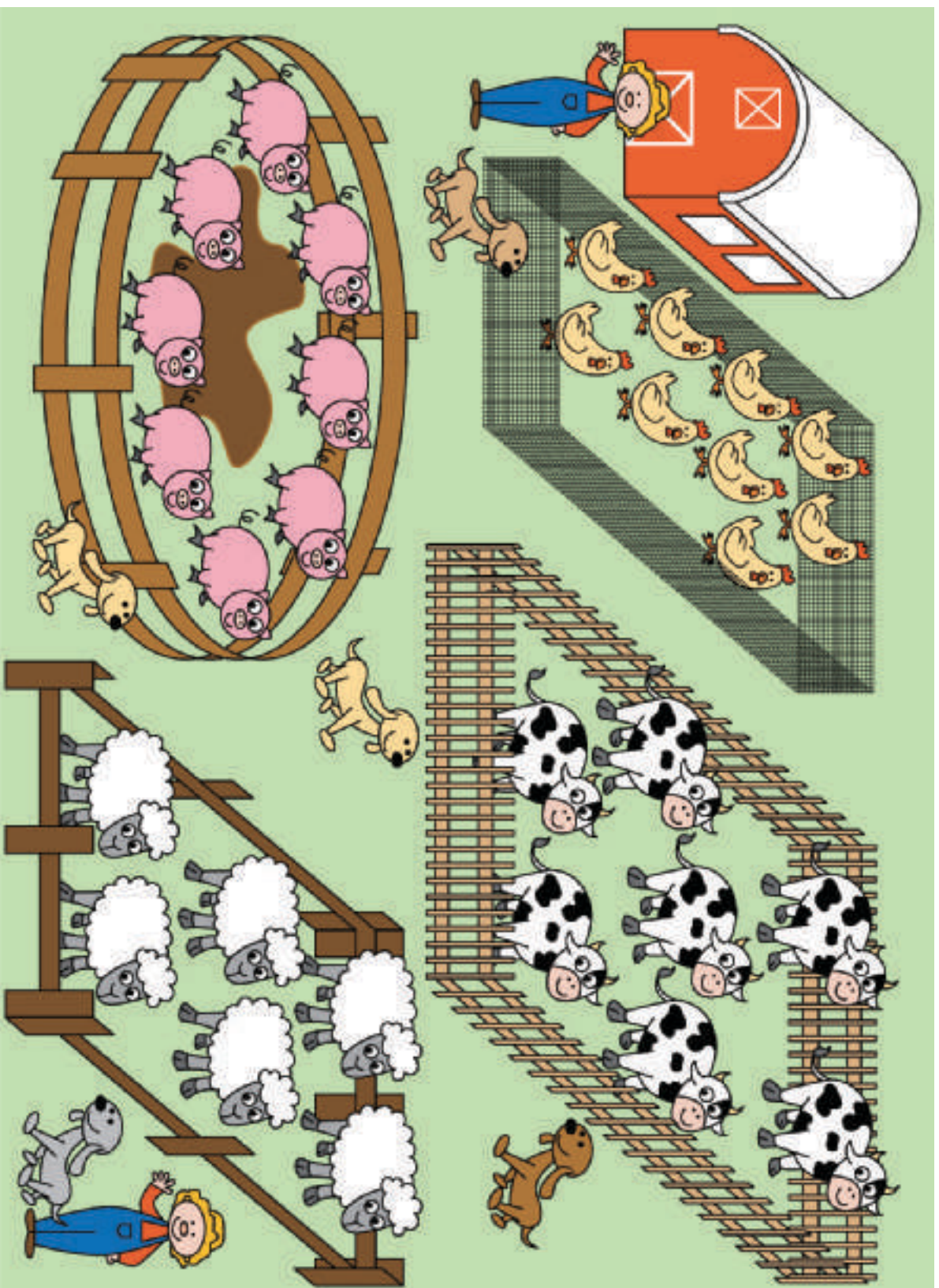
Picture C



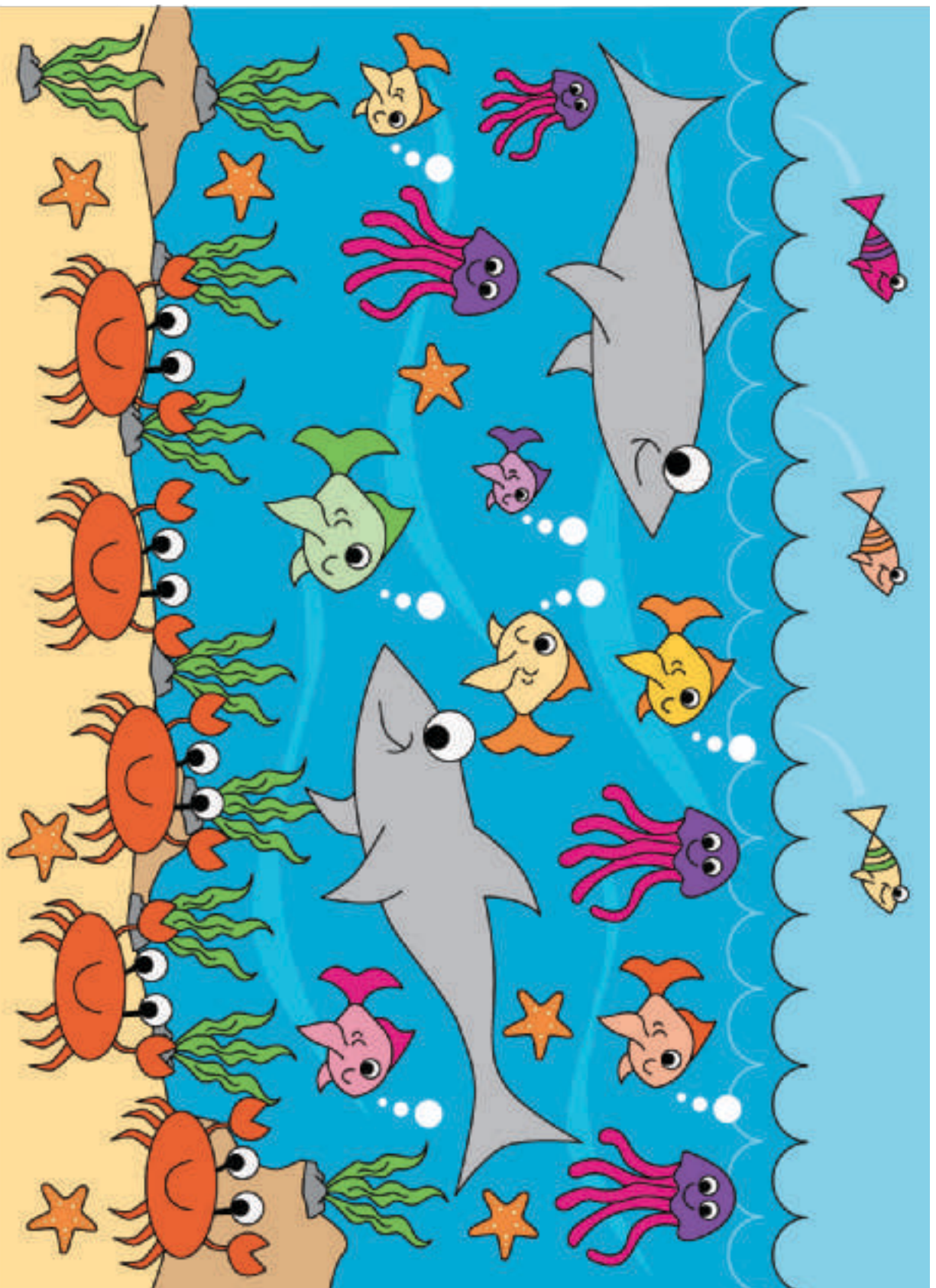
Picture D



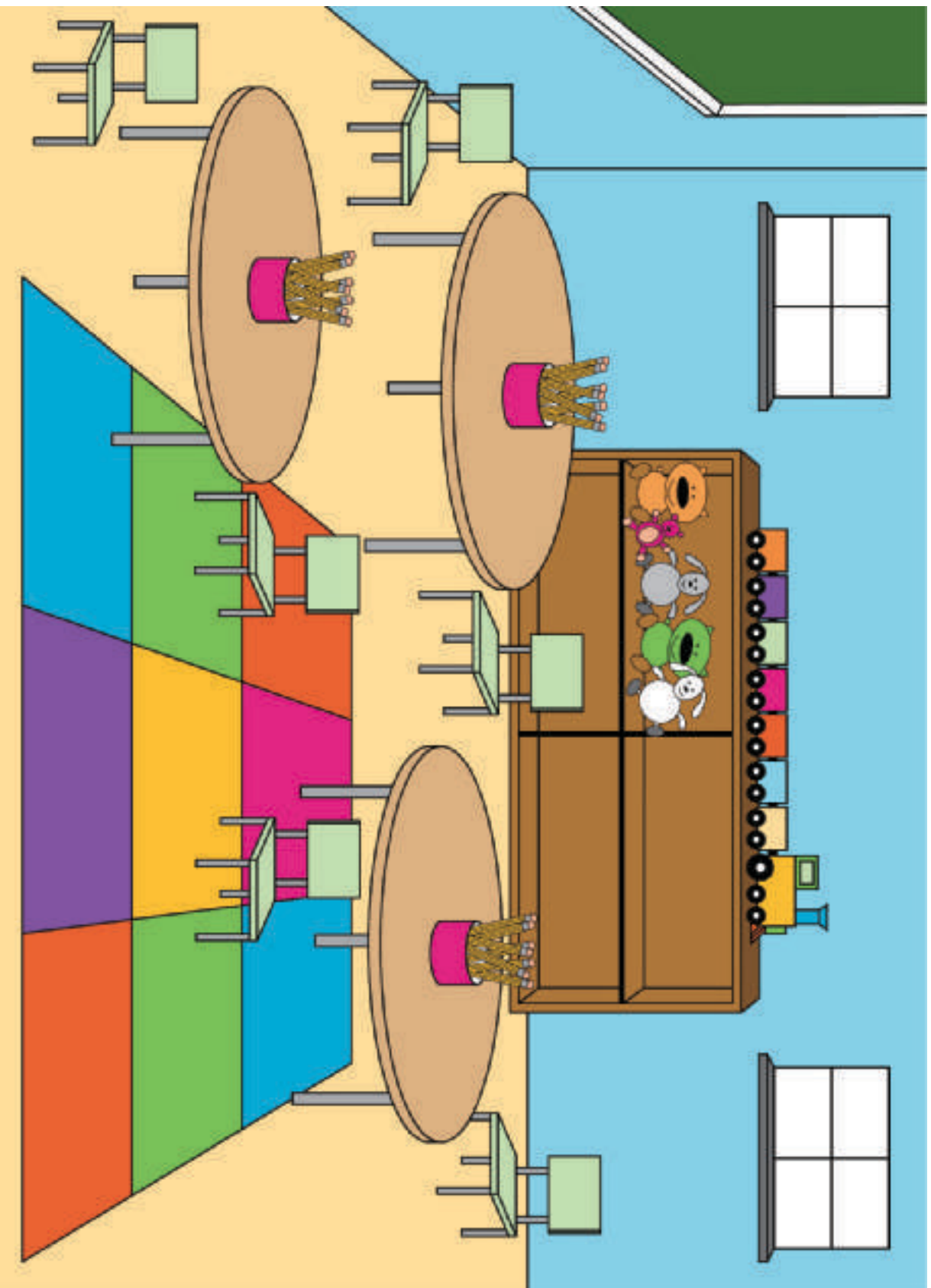
Picture E



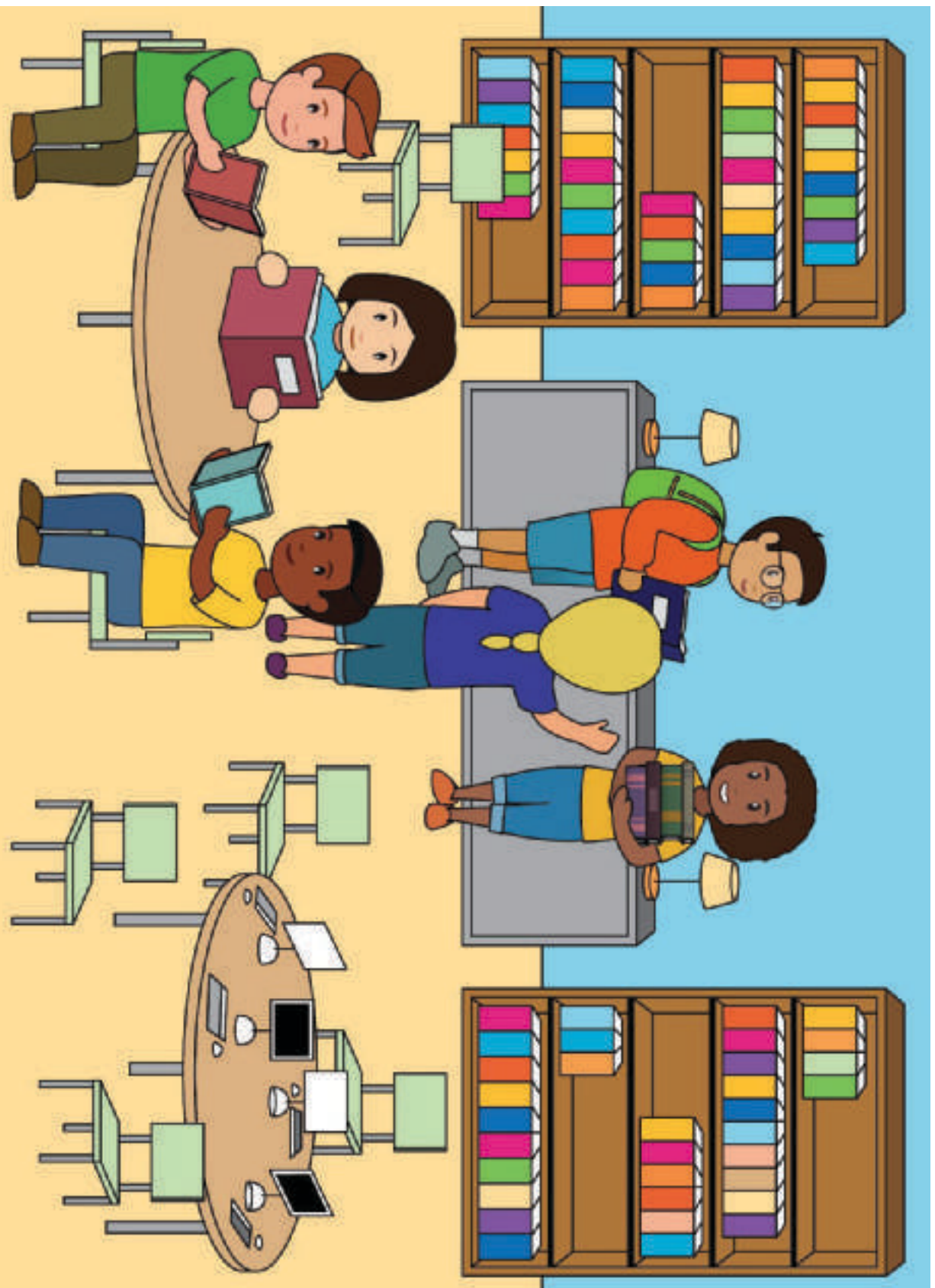
Picture F



Picture G



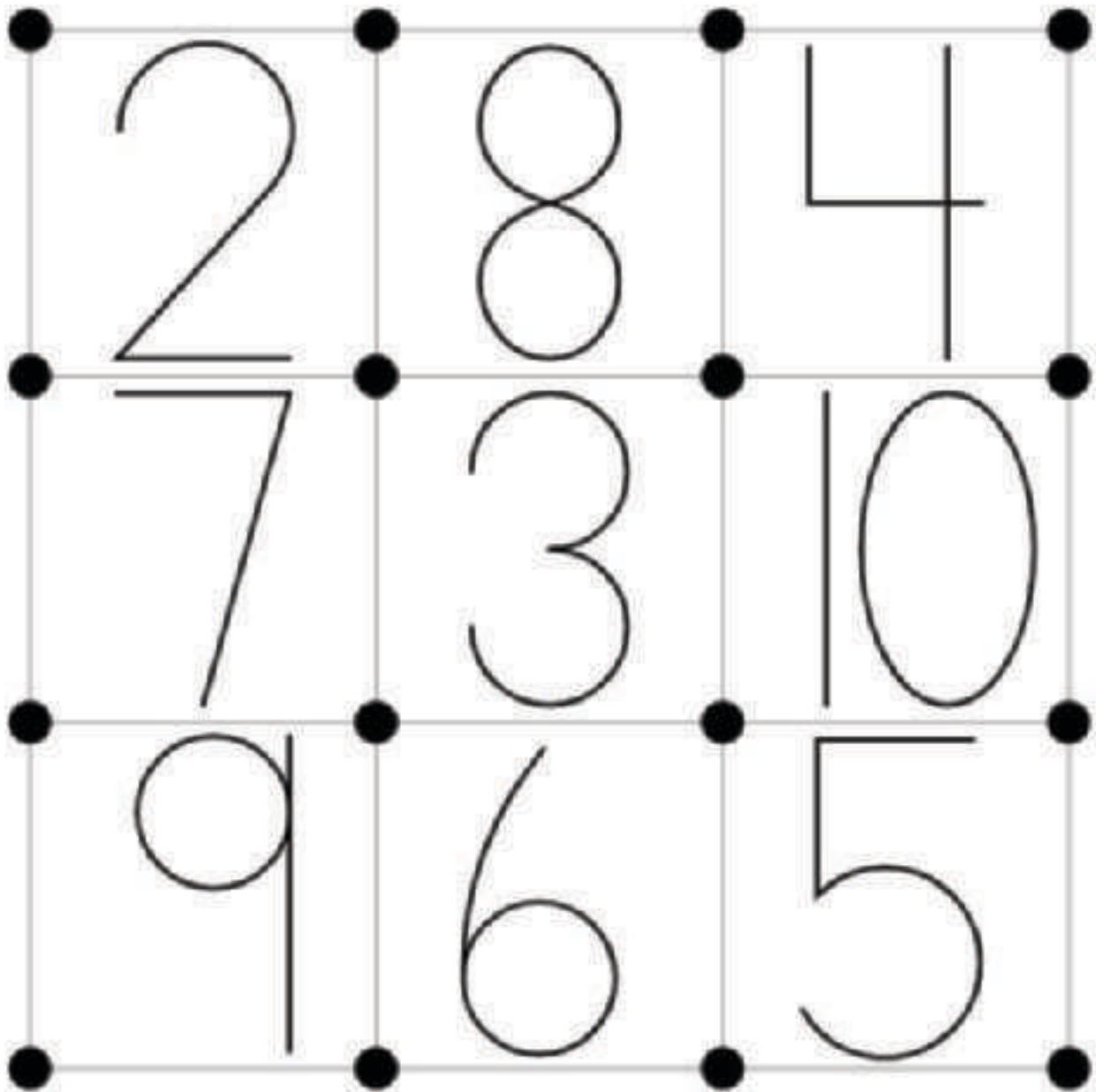
Picture H



Capture Squares Stage 1 Gameboard

Directions:

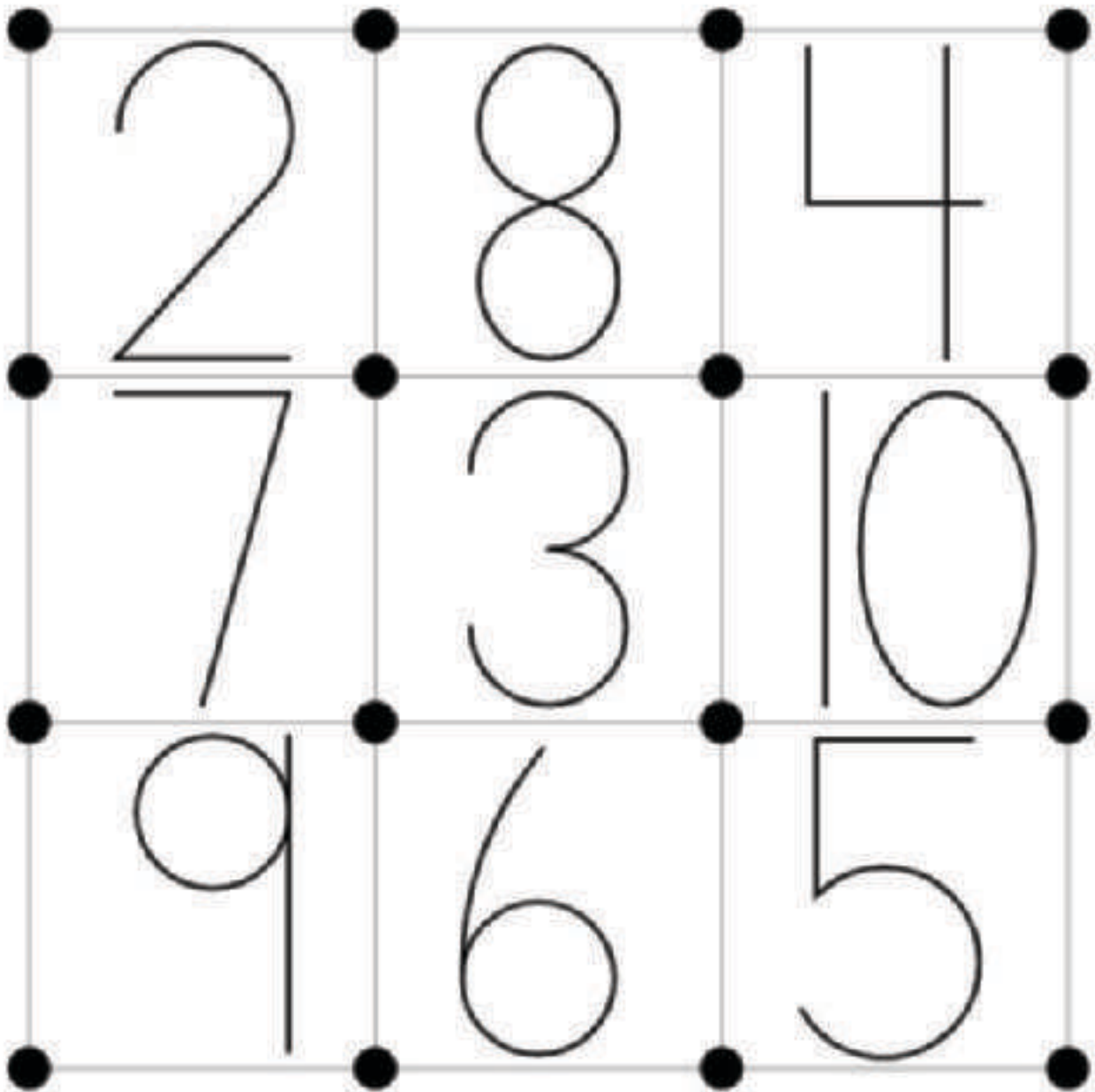
- On your turn:
 - Roll 2 number cubes. Find the sum.
 - Choose a square on the gameboard that shows that number. Draw one line connecting any 2 dots around the number.
 - If you can't draw a line, roll again.
 - If you draw a line that finishes a square around a number, shade in that box with your color.
- Take turns with your partner. The first player to shade in 3 boxes wins.



Capture Squares Stage 1 Gameboard

Directions:

- On your turn:
 - Roll 2 number cubes. Find the sum.
 - Choose a square on the gameboard that shows that number. Draw one line connecting any 2 dots around the number.
 - If you can't draw a line, roll again.
 - If you draw a line that finishes a square around a number, shade in that box with your color.
- Take turns with your partner. The first player to shade in 3 boxes wins.



Sort and Display Stage 1 Recording Sheet

Directions:

- Choose 2 or 3 categories to sort your objects into.
- Show how you sorted.
- Show what you made to a partner. Ask them a question about how you sorted.

Check It Off Stage 1 Recording Sheet Grade K

Directions:

- On your turn:
 - Pick 2 cards and find the total.
 - Check off the number you found and write the expression.
- Take turns. The partner who has checked off the most numbers at the end of the game wins.

	✓ Found it!	expression
0		_____ + _____
1		_____ + _____
2		_____ + _____
3		_____ + _____
4		_____ + _____
5		_____ + _____
6		_____ + _____
7		_____ + _____
8		_____ + _____
9		_____ + _____
10		_____ + _____

Check It Off Stage 1 Recording Sheet Grade 1

Directions:

- On your turn:
 - Pick 2 cards and find the sum.
 - Check off the number you found and write the expression.
- Take turns. The partner who has checked off the most numbers at the end of the game wins.

	✓ Found it!	expression
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Check It Off Stage 2 Recording Sheet

Directions:

- On your turn:
 - Pick 2 cards and find the difference.
 - Check off the number you found and write the expression.
- Take turns. The partner who has checked off the most numbers at the end of the game wins.

	✓ Found it!	expression
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		



--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

What's Behind My Back Stage 2 Recording Sheet Kindergarten

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

--	--	--	--	--	--	--	--	--	--

$$10 = \underline{\quad} + \underline{\quad}$$

What's Behind My Back Stage 2 Recording Sheet Grade 1

Directions:

- Start with a tower of 10 cubes.
- Partner A: Put the tower behind your back, and break off some cubes. Show your partner the rest of the tower.
- Partner B: Record an addition equation with a blank to represent the missing cubes.
- Partner A: Ask "How many are behind my back? How do you know?"
- Switch roles and repeat.



$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

What's Behind My Back Stage 2 Recording Sheet Grade 1

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square + \square = \square$$

Find the Pair Stage 2 Recording Sheet

Directions:

- Take 5 cards each and put the rest in a pile face down.
- Partner A:
 - Ask your partner for a number that can be added to one of your cards to make 10.
 - If they have the card, put the pair of cards down and fill in the equation.
 - If they don't have that card, pick a card from a pile.
- Take turns asking for cards. The partner with the most pairs at the end of the game wins.

$$\underline{\quad\quad\quad} + \underline{\quad\quad\quad} = 10$$

$$\underline{\quad\quad\quad} + \underline{\quad\quad\quad} = 10$$

$$\underline{\quad\quad\quad} + \underline{\quad\quad\quad} = 10$$

Find the Pair Stage 2 Recording Sheet

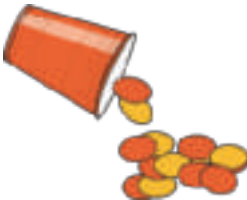
$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 10$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 10$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 10$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 10$$

Shake and Spill Stage 3 Recording Sheet Kindergarten



Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

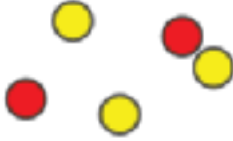

Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Shake and Spill Stage 4 Recording Sheet Kindergarten



<p>total counters</p> 	<p>expression</p> 
<p>5</p>	<p>3 + 2</p> <p>_____ + _____</p>
	<p>_____ + _____</p>
	<p>_____ + _____</p>
	<p>_____ + _____</p>
	<p>_____ + _____</p>
	<p>_____ + _____</p>

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