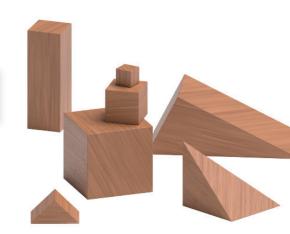


Solid Shapes All Around Us



Teacher Guide



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Solid Shapes All Around Us

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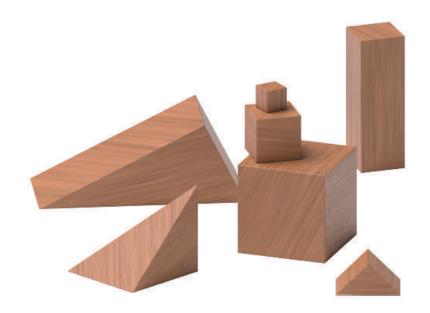
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Solid Shapes All Around Us Teacher Guide

Core Knowledge Mathematics $^{\scriptscriptstyle\mathsf{TM}}$

Unit 7: Solid Shapes All Around Us

At a Glance

Unit 7 is estimated to be completed in 18 days.

This unit is divided into two sections including 16 lessons.

- Section A—Compose and Count with Flat Shapes (Lessons 1-6)
- Section B—Describe, Compare, and Create Solid Shapes (Lessons 7-16)

On pages 5-7 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.

- Geoblocks
- Find the Pair
- Grab and Count
- Pattern Blocks
- Shake and Spill
- Match Mine
- Counting Collections
- Build Shapes

Unit 7: Solid Shapes All Around Us

Unit Learning Goals

• Students identify, describe, analyze, compare, and compose two- and three- dimensional shapes. Counting, addition, and subtraction are revisited in the geometric contexts.

In this unit, students explore solid shapes while reinforcing their knowledge of counting, number writing and comparison, and flat shapes. They compose figures with pattern blocks and continue to count up to 20 objects, write and compare numbers, and solve story problems.

In an earlier unit, students investigated two-dimensional shapes. They named shapes (circle, triangle, rectangle, and square) and described the ways the shapes are different. Students used pattern blocks to build larger shapes and used positional words (above, below, next to, beside) along the way.

Here, students distinguish between flat and solid shapes before focusing on solid shapes. They consider the weight and capacity of solid objects and identify solid shapes around them.

Geoblocks, connecting cubes, and everyday objects are used throughout the unit. Standard geoblock sets do not include cylinders, spheres, and cones. When these shapes are required, "solid shapes" are indicated as required materials. If solid shapes are not available, students can work with everyday items that represent each shape.

Students use their own language to describe attributes of solid shapes as they identify, sort, compare, and build them, while also learning the names for cubes, cones, spheres, and cylinders.



How many shapes did you use all together?

The work here prepares students to identify defining attributes of shapes and to use flat and solid shapes to create composite shapes in grade 1.

Unit 7

Section A: Compose and Count with Flat Shapes

Standards Alignments

Addressing K.CC, K.CC.A.1, K.CC.A.3, K.CC.B.5, K.CC.C, K.CC.C.6, K.CC.C.7, K.G.B.5, K.G.B.6,

K.NBT.A.1, K.OA, K.OA.A.1, K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5

Building Towards K.G.B.6, K.OA.A.2, K.OA.A.4

Section Learning Goals

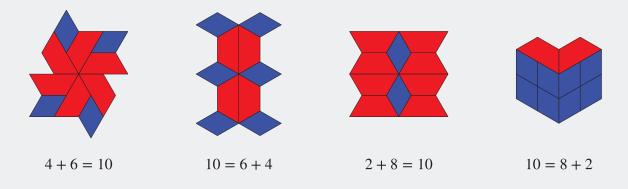
• Compose shapes from smaller shapes.

• Count and compare numbers, and solve story problems involving shapes.

In this section, students strengthen their understanding of number concepts while working with pattern blocks. The work here allows the teacher to ensure that students have proficiency in counting and counting out to 20, writing and comparing numbers, and solving story problems.

In solving story problems, students match equations to the quantities in the problems, and complete equations so that they match the problems. For the first time, they hear equations read with the term "equals" rather than "is." For example, 9-6=3 is read "9 minus 3 equals 6." In this section, students see equations written with both the total written first and the addends written first.

Students consider ways to make the number 10 in the context of building shapes and completing puzzles with pattern blocks. Along the way, they think about attributes of pattern blocks.



♣ ↔ ♣ PLC: Lesson 6, Activity 2, Many Ways to Make 10

Section B: Describe, Compare, and Create Solid Shapes

Standards Alignments

Addressing

K.CC.A.1, K.CC.B.5, K.G, K.G.A.1, K.G.A.2, K.G.A.3, K.G.B.4, K.G.B.5, K.G.B.6, K.MD.A,

K.MD.A.1, K.MD.A.2, K.MD.B.3, K.OA.A.5

Building

K.MD.A.1, K.MD.A.2, K.NBT.A.1, K.OA.A.5 Towards

Section Learning Goals

Compare weight and capacity of objects.

- Compose shapes from smaller shapes.
- Describe and compare three-dimensional shapes.

This section introduces students to solid shapes. Students begin by distinguishing solid shapes from flat shapes. They then learn about weight as an attribute of solid shapes and compare weights, and work with tactile materials or objects to develop their understanding of three-dimensional shapes.

Throughout the section, students hear and use the terms "flat" and "solid" to describe two- and threedimensional shapes, but they also use their own language to talk about shapes. When comparing weights, the terms "heavy," "light," "heavier," and "lighter" are used. While students are introduced to the names of solid shapes, they are not expected to use the formal terms. For example, they may say "ball" to refer to a sphere.









Initially, students build solid shapes with clay. Later, they do so out of given components, using positional words and names of shapes as they build and describe their creations. They also describe attributes of solid shapes as they compare and sort them.

At the end of the section, students create a model of their classroom and use solid shapes to represent objects in their world.



♣ ↔ ♣ PLC: Lesson 11, Activity 1, Compare Solid Shapes

Unit 7 Section B 3

Throughout the Unit

Students continue to engage in Choral Counts to build their skill with counting up to 100. In this unit, students also count by 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.

In Activity 3, students participate in centers and often the activity synthesis focuses on habits of how students work in centers. Teachers may choose to complete the lesson synthesis, which is focused on the learning goal of the lesson, after Activity 2, before students transition to working in centers.

Materials Needed

LESSON	GATHER	COPY
A.1	Materials from previous centersPattern blocks	Squares Squares (groups of 1)Shape Puzzle (groups of 2)
A.2	Materials from previous centersPattern blocks	 Quack Quack (groups of 1) Make a Y (groups of 1) Pattern Blocks Stage 6 Mat (groups of 2)
A.3	 Colored pencils, crayons, or markers Connecting cubes or two-color counters Materials from previous centers Pattern blocks 	 Pattern Blocks Stage 7 Recording Sheet (groups of 1)
A.4	Materials from previous centersPattern blocks	• none
A.5	 10-frames Connecting cubes or two-color counters Materials from previous centers Pattern blocks 	• none
A.6	 10-frames Connecting cubes or two-color counters Cups Pattern blocks Two-color counters 	 Book of 10 (groups of 1) Shake and Spill Stage 4 Recording Sheet Kindergarten (groups of 1)

Unit 7 Materials Needed 5

В.7	ClayGeoblocksMaterials from previous centersSolid shapes	• Flat Shapes Cards K (groups of 2)
B.8	 Materials from previous centers 	• none
B.9	 Containers of different sizes Materials from previous centers Sticky notes 	• none
B.10	 Clay Geoblocks Materials from a previous lesson Materials from previous centers Solid shapes 	 Examples of Flat Shapes Display Cards (groups of 35)
B.11	 Bags Geoblocks Materials from a previous activity Materials from previous centers Solid shapes 	• none
B.12	 Clay Connecting cubes Geoblocks Materials from previous centers Solid shapes Sticks 	• none

B.13	 Clay Geoblocks Materials from previous centers Solid shapes
B.14	 Folders Geoblocks Materials from previous centers Solid shapes
B.15	 10-frames Connecting cubes Geoblocks Materials from previous centers Solid shapes
B.16	 Geoblocks Materials from previous centers Solid shapes

Unit 7 Materials Needed 7

Center: Geoblocks (K-1)

Stage 1: Explore

Activities

- Kindergarten.7.A1.3 (supporting)
- Kindergarten.7.A2.3 (supporting)
- Kindergarten.7.A3.3 (supporting)
- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)
- Kindergarten.7.B10.3 (supporting)
- Kindergarten.7.B12.3 (supporting)
- Kindergarten.7.B13.3 (supporting)
- Kindergarten.7.B14.3 (supporting)
- Kindergarten.7.B15.3 (supporting)
- Kindergarten.7.B16.3 (supporting)

Stage Narrative

Students have free exploration time with geoblocks.

Standards Alignments

Addressing K.G

Materials to Gather

Geoblocks

Stage 2: Build to Match

Activities

- Kindergarten.7.A1.3 (supporting)
- Kindergarten.7.A2.3 (supporting)
- Kindergarten.7.A3.3 (supporting)
- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)
- Kindergarten.7.B10.3 (supporting)
- Kindergarten.7.B12.3 (supporting)
- Kindergarten.7.B13.3 (supporting)
- Kindergarten.7.B14.3 (supporting)
- Kindergarten.7.B15.3 (supporting)
- Kindergarten.7.B16.3 (supporting)

Stage Narrative

Students use solid shapes to build objects pictured on cards.

Standards Alignments

Addressing K.G

Materials to Gather

Materials to Copy

Geoblocks, Solid shapes

Geoblocks Stage 2 (groups of 8)

Stage 3: Describe and Find

Activities

- Kindergarten.7.B10.2 (addressing)
- Kindergarten.7.B10.3 (addressing)
- Kindergarten.7.B12.3 (addressing)
- Kindergarten.7.B13.3 (addressing)
- Kindergarten.7.B14.3 (addressing)
- Kindergarten.7.B15.3 (addressing)
- Kindergarten.7.B16.3 (addressing)

Stage Narrative

Students describe solid shapes so their partner can identify the shape out of a set of 4–6 solid shapes.

Standards Alignments

Addressing 1.G.A, K.G.B.4

Materials to Gather

Geoblocks, Solid shapes

Stage 4: Feel and Guess

Activities

- Kindergarten.7.B11.3 (addressing)
- Kindergarten.7.B12.3 (addressing)
- Kindergarten.7.B13.3 (addressing)
- Kindergarten.7.B14.3 (addressing)
- Kindergarten.7.B15.3 (addressing)
- Kindergarten.7.B16.3 (addressing)

Stage Narrative

Students feel the shape without looking at it and guess the shape.

Standards Alignments

Addressing 1.G.A, K.G.A.1, K.G.A.2, K.G.B.4

Materials to Gather

Bags, Geoblocks, Solid shapes

Center: Find the Pair (K-1)

Stage 1: Make 5

Activities

- Kindergarten.7.A1.3 (supporting)
- Kindergarten.7.A2.3 (supporting)
- Kindergarten.7.A3.3 (supporting)
- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)

Stage Narrative

Before playing, students remove the cards that show numbers greater than 5 and set them aside.

Partner A asks their partner for a number that would make 5 when added to the number on one of their cards. If Partner B has the card, they give it to Partner A and Partner A gets a match. If not, Partner A chooses a new card. When students make the target number 5, they put down those two cards and write an expression to represent the combination. Students continue playing until one player runs out of cards. The player with the most pairs wins.

Standards Alignments

Addressing K.OA.A.5

Materials to Gather

5-frames, Counters, Number cards 0-10

Materials to Copy

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

Stage 2: Make 10

Activities

- Kindergarten.7.A1.3 (supporting)
- Kindergarten.7.A2.3 (supporting)
- Kindergarten.7.A3.3 (supporting)
- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (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

Materials to Copy

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

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

Center: Grab and Count (K-1)

Stage 1: Pattern Blocks

Activities

- Kindergarten.7.A1.3 (supporting)
- Kindergarten.7.A2.3 (supporting)
- Kindergarten.7.A3.3 (supporting)
- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)

Stage Narrative

Each student grabs a handful of pattern blocks and puts them together with their partner's. They guess how many pattern blocks there are and then count the blocks. Students record their guess and the actual number of blocks on the recording sheet.

Variation:

Students can count their own group of blocks first and record an expression to represent the total number of pattern blocks.

Standards Alignments

Addressing K.CC.B.5

Materials to Gather

Pattern blocks

Materials to Copy

Grab and Count Stage 1 Recording Sheet (groups of 1)

Additional Information

Each group of 2 needs around 20 pattern blocks.

Center: Pattern Blocks (K)

Stage 1: Explore

Activities

- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)

Stage Narrative

Students have free exploration time with pattern blocks.

Standards Alignments

Addressing K.CC.B, K.G, K.MD.B.3

Materials to Gather

Pattern blocks

Stage 2: Puzzles

Activities

- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)

Stage Narrative

Students use pattern blocks to fill in puzzles where the edges of each shape do not touch.

Standards Alignments

Addressing K.G

Materials to Gather

Materials to Copy

Pattern blocks

Pattern Blocks Stage 2 Mat (groups of 2)

Stage 3: Get and Build

Activities

- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)

Stage Narrative

Students use a specified number of each pattern block to build a creation of their choice.

Standards Alignments

Addressing K.CC, K.CC.B.4, K.G.B

Materials to Gather

Materials to Copy

Pattern blocks

Pattern Blocks Stage 3 Directions (groups of 2)

Stage 4: Count Out and Build

Activities

- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)

Stage Narrative

Students count out a given number of each pattern block and put them together to make larger shapes. They compare the amount or number of different pattern blocks they use to make their shape.

Standards Alignments

Addressing K.CC.B.5, K.CC.C.6, K.CC.C.7, K.G.B.6

Materials to Gather

Materials to Copy

Pattern blocks

Pattern Blocks Stage 4 Recording Sheets (groups of 1)

Stage 5: Puzzle Challenge

Activities

- Kindergarten.7.A4.3 (supporting)
- Kindergarten.7.A5.3 (supporting)

Stage Narrative

Students use pattern blocks to fill in more challenging puzzles that do not show the individual pattern blocks. These puzzles can be filled in in different ways, using different amounts of each pattern block. Students record a number to show how many of each block they used.

Standards Alignments

Addressing K.CC.A.3, K.CC.B.5, K.G.B.6

Materials to Gather

Materials to Copy

Pattern blocks

Pattern Blocks Stage 5 Mat (groups of 2), Pattern Blocks Stage 5 Recording Sheet (groups of 2)

Stage 6: Place the Last Pattern Block

Activities

- Kindergarten.7.A2.3 (addressing)
- Kindergarten.7.A4.3 (addressing)
- Kindergarten.7.A5.3 (addressing)

Stage Narrative

Partners take turns placing one pattern block at a time in the puzzle until it is complete. The student who places the last pattern block wins.

Standards Alignments

Addressing K.G.B.6

Materials to Gather

Materials to Copy

Pattern blocks

Pattern Blocks Stage 6 Mat (groups of 2)

Stage 7: Build and Draw

Activities

- Kindergarten.7.A3.3 (addressing)
- Kindergarten.7.A4.3 (addressing)
- Kindergarten.7.A5.3 (addressing)

Stage Narrative

Students count out a given number of pattern blocks (up to 20) and put them together to make a new shape. Then they draw the shape.

Standards Alignments

Addressing K.G.B.5, K.G.B.6

Materials to Gather

Colored pencils, crayons, or markers, Pattern blocks

Materials to Copy

Pattern Blocks Stage 7 Recording Sheet (groups of 1)

Center: Shake and Spill (K-2)

Stage 1: Count

Activities

- Kindergarten.7.B7.3 (supporting)
- Kindergarten.7.B8.3 (supporting)
- Kindergarten.7.B9.3 (supporting)
- Kindergarten.7.B10.3 (supporting)
- Kindergarten.7.B11.3 (supporting)
- Kindergarten.7.B12.3 (supporting)
- Kindergarten.7.B13.3 (supporting)
- Kindergarten.7.B14.3 (supporting)
- Kindergarten.7.B15.3 (supporting)
- Kindergarten.7.B16.3 (supporting)

Stage Narrative

Students decide together how many counters to use (up to 10). They take turns shaking and spilling the counters. Both partners count the counters. Then, they choose a different number of counters and repeat.

Students may choose to use the 5-frame to organize the counters.

Standards Alignments

Addressing K.CC.B.4.b, K.CC.B.5

Materials to Gather

5-frames, Cups, Two-color counters

Additional Information

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

Stage 2: Which Is More?

Activities

- Kindergarten.7.B7.3 (supporting)
- Kindergarten.7.B8.3 (supporting)
- Kindergarten.7.B9.3 (supporting)
- Kindergarten.7.B10.3 (supporting)
- Kindergarten.7.B11.3 (supporting)
- Kindergarten.7.B12.3 (supporting)
- Kindergarten.7.B13.3 (supporting)
- Kindergarten.7.B14.3 (supporting)
- Kindergarten.7.B15.3 (supporting)
- Kindergarten.7.B16.3 (supporting)

Stage Narrative

Students decide together how many counters to use (up to 10). They take turns shaking and spilling the counters. They compare the number of red and yellow counters and describe their comparisons using the language "more than," "fewer than," and "the same as."

Students may choose to use the 5-frame to organize the counters.

Standards Alignments

Addressing K.CC.C.6

Materials to Gather

5-frames, Cups, Two-color counters

Additional Information

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

Stage 3: Represent

Activities

- Kindergarten.7.B7.3 (addressing)
- Kindergarten.7.B8.3 (addressing)
- Kindergarten.7.B9.3 (addressing)
- Kindergarten.7.B10.3 (addressing)
- Kindergarten.7.B11.3 (addressing)
- Kindergarten.7.B12.3 (addressing)
- Kindergarten.7.B13.3 (addressing)
- Kindergarten.7.B14.3 (addressing)
- Kindergarten.7.B15.3 (addressing)
- Kindergarten.7.B16.3 (addressing)

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

Materials to Copy

Crayons, Cups, Two-color counters

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

- Kindergarten.7.A6.3 (addressing)
- Kindergarten.7.B7.3 (addressing)
- Kindergarten.7.B8.3 (addressing)
- Kindergarten.7.B9.3 (addressing)
- Kindergarten.7.B10.3 (addressing)
- Kindergarten.7.B11.3 (addressing)
- Kindergarten.7.B12.3 (addressing)
- Kindergarten.7.B13.3 (addressing)
- Kindergarten.7.B14.3 (addressing)
- Kindergarten.7.B15.3 (addressing)
- Kindergarten.7.B16.3 (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

Materials to Copy

Cups, Two-color counters

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.

Center: Match Mine (K-1)

Stage 1: Pattern Blocks

Activities

- Kindergarten.7.B7.3 (supporting)
- Kindergarten.7.B8.3 (supporting)
- Kindergarten.7.B9.3 (supporting)
- Kindergarten.7.B10.3 (supporting)
- Kindergarten.7.B11.3 (supporting)
- Kindergarten.7.B12.3 (supporting)
- Kindergarten.7.B13.3 (supporting)
- Kindergarten.7.B15.3 (supporting)
- Kindergarten.7.B16.3 (supporting)

Stage Narrative

Students make larger shapes from pattern blocks.

Variation:

Students may use folders to hide their shape.

Standards Alignments

Addressing K.G

Materials to Gather

Folders, Pattern blocks

Stage 2: Solid Shapes

Activities

- Kindergarten.7.B14.3 (addressing)
- Kindergarten.7.B15.3 (addressing)
- Kindergarten.7.B16.3 (addressing)

Stage Narrative

Students make larger shapes from solid shapes.

Variation:

Students may use folders to hide their shape.

Standards Alignments

Addressing 1.G.A.2, K.G

Materials to Gather

Folders, Geoblocks, Solid shapes

Center: Counting Collections (K-1)

Stage 1: Up to 20

Activities

- Kindergarten.7.B7.3 (supporting)
- Kindergarten.7.B8.3 (supporting)
- Kindergarten.7.B9.3 (supporting)
- Kindergarten.7.B10.3 (supporting)
- Kindergarten.7.B11.3 (supporting)
- Kindergarten.7.B12.3 (supporting)
- Kindergarten.7.B13.3 (supporting)
- Kindergarten.7.B14.3 (supporting)
- Kindergarten.7.B15.3 (supporting)
- Kindergarten.7.B16.3 (supporting)

Stage Narrative

Students are given a collection of up to 20 objects. They work with a partner to figure out how many objects are in their collection and then each partner shows how many. Students may draw pictures or write numbers to represent their collection.

Variation:

In kindergarten, teachers may not want to provide a recording sheet, so that students can explain their count orally.

Standards Alignments

Addressing K.CC.B

Materials to Gather

Materials to Copy

10-frames, 5-frames, Collections of objects

Counting Collections Stages 1 and 2 Recording Sheet (groups of 1)

Additional Information

Create a collection of up to 20 objects per group of 2 students (buttons, two-color counters, linking cubes, paper clips, pattern blocks, square tiles).

Kindergarten

Center: Build Shapes (K)

Stage 1: Match the Flat Shape

Activities

- Kindergarten.7.B12.3 (supporting)
- Kindergarten.7.B13.3 (supporting)
- Kindergarten.7.B14.3 (supporting)
- Kindergarten.7.B15.3 (supporting)
- Kindergarten.7.B16.3 (supporting)

Stage Narrative

Students choose a shape card to build. Students check their work with their partner to be sure they both agree they made the shape correctly.

Standards Alignments

Addressing K.G.B.5

Materials to Gather

Play dough or modeling clay, Straws

Materials to Copy

Build Shapes Stage 1 and 2 Cards (groups of 2)

Additional Information

Bag of straws per group of 2 students:

- at least 6 straws in each size:
 - $\circ \frac{1}{2}$ inch
 - o 1 inch
 - \circ $1\frac{1}{2}$ inch
 - \circ $2\frac{3}{4}$ inches

Stage 2: Describe the Flat Shape

Activities

- Kindergarten.7.B12.3 (supporting)
- Kindergarten.7.B13.3 (supporting)
- Kindergarten.7.B14.3 (supporting)
- Kindergarten.7.B15.3 (supporting)
- Kindergarten.7.B16.3 (supporting)

24

Stage Narrative

Students choose a shape card and describe the shape to their partner, who builds the shape based on the description.

Standards Alignments

Addressing K.G.A.1, K.G.B.5

Materials to Gather

Play dough or modeling clay, Straws

Materials to Copy

Build Shapes Stage 1 and 2 Cards (groups of 2)

Additional Information

Bag of straws per group of 2 students:

- At least 6 straws in each size:
 - $\circ \frac{1}{2}$ inch
 - o 1 inch
 - \circ $1\frac{1}{2}$ inch
 - \circ $2\frac{3}{4}$ inches

Stage 3: Match the Solid Shape

Activities

- Kindergarten.7.B12.2 (addressing)
- Kindergarten.7.B12.3 (addressing)
- Kindergarten.7.B13.3 (addressing)
- Kindergarten.7.B14.3 (addressing)
- Kindergarten.7.B15.3 (addressing)
- Kindergarten.7.B16.3 (addressing)

Stage Narrative

Students build solid shapes.

Standards Alignments

Addressing K.G.B.5

Materials to Gather

Clay, Geoblocks, Solid shapes, Sticks

Section A: Compose and Count with Flat Shapes

Lesson 1: Build Shapes

Standards Alignments

Addressing K.CC, K.CC.A.3, K.CC.B.5, K.G.B.6, K.NBT.A.1

Teacher-facing Learning Goals

 Count to answer "how many" questions about groups of up to 20 shapes and represent the quantity with a number.

Student-facing Learning Goals

 Let's use one kind of pattern block to make shapes.

Lesson Purpose

The purpose of this lesson is for students to reinforce counting concepts as they build with and consider the attributes of pattern blocks.

In previous units, students put together pattern blocks to form larger shapes and filled in puzzles. They counted groups of up to 20 objects and images and wrote numbers to record their count. Students use only 1 kind of pattern block to fill in puzzles and eventually create given shapes without outlines provided, which requires students to think informally about the attributes of shapes. Students need to change the orientation of the pattern blocks and align the sides of the pattern blocks. Students may be able to visualize how to turn or flip the shape to fill a particular space or may need to use trial and error. In both activities, students count and write a number to record how many pattern blocks they used.

Access for:

③ Students with Disabilities

3 English Learners

Action and Expression (Activity 2)

MLR8 (Activity 2)

Instructional Routines

How Many Do You See? (Warm-up)

Materials to Gather

- Materials from previous centers: Activity 3
- Pattern blocks: Activity 1, Activity 2

Materials to Copy

- Squares Squares (groups of 1): Activity 1
- Shape Puzzle (groups of 2): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	10 min
Activity 3	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

What was the best question that you asked students today? Why would you consider it the best one based on what students said or did?

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

© 0 min

Unit 7, Section A Checkpoint

Standards Alignments

Addressing K.CC

Student-facing Task Statement

Lesson observations

Student Responses

- Count all to determine the total.
- Write a number to represent a quantity up to 20.

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

Unit 7 Lesson 1 27

Warm-up © 10 min

How Many Do You See: Triangles

Standards Alignments

Addressing K.CC, K.NBT.A.1

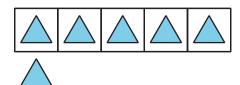
The purpose of this How Many Do You See is for students to subitize or use grouping strategies to describe the images they see. When students use the structure of 5- and 10-frames to count, they look for and make use of structure (MP7).

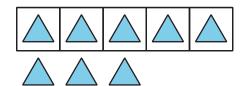
Instructional Routines

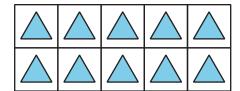
How Many Do You See?

Student-facing Task Statement

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







Launch

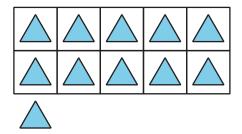
- Groups of 2
- "How many do you see? How do you see them?"
- Flash image.
- 30 seconds: quiet think time

Activity

- Display image.
- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.
- Repeat for each image.

Synthesis

 "Did anyone see the triangles the same way but would explain it differently?"



Student Responses

Sample responses:

- 6 triangles: I see 5 and 1 more, which is 6.
- 8 triangles: There are 2 more than the last one. 6...7, 8.
- 10 triangles: It is a full 10-frame.
- 11 triangles: There is 1 more than the last one.

Activity 1 © 10 min

Squares, Squares

Standards Alignments

Addressing K.CC.A.3, K.CC.B.5, K.G.B.6

The purpose of this activity is for students to put together pattern blocks strategically to make a specific shape. Students use square pattern blocks to fill in 2 squares. Then students work together to create another square and a shape that is not a square, without outlines provided. Students informally compare the shapes that they have created in the activity synthesis. Students count and write numbers to show how many pattern blocks they used.

Unit 7 Lesson 1 29

Materials to Gather

Pattern blocks

Materials to Copy

Squares Squares (groups of 1)

Required Preparation

• Each student needs at least 10 square pattern blocks.

Student Responses

- 1. 4
- 2. 9
- 3. Answers vary. Students create a square.
- 4. Answers vary.

Launch

- Groups of 2
- Give each student a copy of the Instructional master and access to pattern blocks, including at least 10 orange square pattern blocks.
- Display the Instructional master.
- "What do you notice?" (The shapes are both squares. One is bigger and one is smaller.)
- 30 seconds: quiet think time
- Share responses.

Activity

- "Fill in both shapes using only orange square pattern blocks. Then write a number to show how many squares you used to fill in each shape."
- 3 minutes: independent work time
- "Work with your partner to make another shape that is a square. You can use any kind of pattern blocks. Then write a number to show how many pattern blocks you used."
- 2 minutes: partner work time
- "Work with your partner to make a shape that is not a square. Use the orange square pattern blocks."
- 2 minutes: partner work time
- "Trace or draw the shape that you made that is not a square. Then write a number to show how many orange square pattern blocks you used."

• 2 minutes: independent work time

Synthesis

- Display one student-created square and a shape made out of pattern blocks that is not a square.
- "What is the same about the shapes? What
 is different about them?" (The square has
 sides that are the same length. The other
 shape is short and thin.)
- "How many pattern blocks did it take to make each shape?"

Activity 2 © 10 min

Shape Puzzle

Standards Alignments

Addressing K.CC.A.3, K.CC.B.5, K.G.B.6

The purpose of this activity is to solve a puzzle using only one pattern block shape. Students need to change the orientation of the pattern blocks and align the sides of the pattern blocks carefully to fill in the puzzle (MP6). Although the task asks students to use only one kind of pattern block in the second problem, students may choose to fill it with different kinds of pattern blocks. If they do, they should still write a number to represent how many pattern blocks they used.

Access for English Learners

MLR8 Discussion Supports. Point to each shape and invite students to chorally repeat the name in unison 1-2 times: Triangle and rhombus.

Advances: Speaking, Representing

Access for Students with Disabilities

Action and Expression: Develop Expression and Communication. Give students access to 10-frames to help them count the number rhombus pattern blocks they used.

Supports accessibility for: Organization, Conceptual Processing

Unit 7 Lesson 1 31

Materials to Gather

Pattern blocks

Materials to Copy

Shape Puzzle (groups of 2)

Required Preparation

• Each group of 2 needs at least 16 triangle pattern blocks and 8 rhombus pattern blocks.

Student Responses

Sample responses:

- 1. Students fill in the puzzle with 8 rhombus pattern blocks and write "I used 8 pattern blocks."
- 2. Students fill in the puzzle with 16 triangle pattern blocks and write "I used 16 pattern blocks."

Launch

- Groups of 2
- Give each group of students a copy of the Instructional master and at least 16 triangle pattern blocks and 8 rhombus pattern blocks.
- "In the last activity, we used square pattern blocks to make squares. Work with your partner to fill in this puzzle, using only the blue rhombus pattern blocks."
- 3 minutes: partner work time

Activity

- "This sentence says 'I used ___ pattern blocks.' Write a number to show how many pattern blocks you used."
- 1 minute: independent work time
- Share responses.
- "Can you use another kind of pattern block to fill in the puzzle?"
- 1 minute: independent work time
- 2 minutes: partner work time
- Monitor for students who use all triangle pattern blocks to fill in the puzzle.

Synthesis

- If a student used all triangle pattern blocks to fill in the puzzle, invite the student to share.
- If no student used all triangle pattern blocks to fill in the puzzle, ask "Use only

triangles to fill in the puzzle. How many triangles did you use?"

Activity 3 © 20 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Geoblocks
- Grab and Count
- Find the Pair

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:
 - Geoblocks, Stages 1 and 2
 - Grab and Count, Stage 1
 - o Find the Pair, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Geoblocks

Launch

- "Today we 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

Unit 7 Lesson 1 33



first."

• 30 seconds: quiet think time

Activity

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

Synthesis

 "Tell your partner about something that you built during centers today."

Lesson Synthesis

(1) 10 min

"Today we used all of the same kind of pattern blocks to make shapes and fill in puzzles. Can you use the triangle pattern blocks to make a bigger triangle?"

"How many pattern blocks did you use?"

Lesson 2: More or Fewer Pattern Blocks

Standards Alignments

Addressing K.CC.A.1, K.CC.C, K.CC.C.6, K.CC.C.7, K.G.B.6

Teacher-facing Learning Goals

• Compare the number of objects in groups of up to 10 shapes.

Student-facing Learning Goals

 Let's figure out if there are more triangle pattern blocks or trapezoid pattern blocks.

Lesson Purpose

The purpose of this lesson is for students to compare groups of up to 10 objects in the context of putting together pattern blocks.

In previous lessons, students put together and counted pattern blocks to fill in puzzles. Students have noticed that different combinations of pattern blocks can be used to create the same shape. Students use methods developed in previous units to compare the number of pattern blocks.

Access for:

Students with Disabilities

• Representation (Activity 2)

English Learners

MLR8 (Activity 1)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- Materials from previous centers: Activity 3
- Pattern blocks: Activity 1, Activity 2, Activity
 3

Materials to Copy

- Quack Quack (groups of 1): Activity 1
- Make a Y (groups of 1): Activity 2
- Pattern Blocks Stage 6 Mat (groups of 2): Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	10 min

Teacher Reflection Question

When do your students feel successful in math? How do you know?

Unit 7 Lesson 2 35

Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	5 min
Cool-down	5 min

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

O 5 min

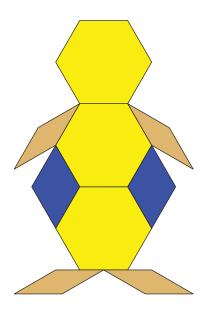
Penguin Compare

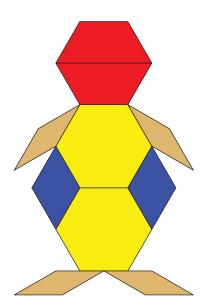
Standards Alignments

Addressing K.CC.C

Student-facing Task Statement

Circle the shape that is filled with more pattern blocks.





Student Responses

Students circle the penguin on the right.

--- Begin Lesson -----

Warm-up
© 10 min

Choral Count: Count by 10

Standards Alignments

Addressing K.CC.A.1

The purpose of this warm-up is for students to count by 10 to 100. Although students see the written sequence of numbers, they are not required to identify numbers beyond 20 until Grade 1.

Instructional Routines

Choral Count

Student Responses

10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Launch

- Display numbers from 1 to 100.
- "Let's count to 100."
- Point to the numbers as students count to 100.

Activity

- "Now let's count to 100 by 10."
- Demonstrate counting by 10 to 100, pointing to each number as you count.
- "Let's all count to 100 by 10."
- Have students repeat the count multiple times.

Synthesis

 "We will keep practicing counting to 100 by 10."

Activity 1

(10 min

Quack Quack

Unit 7 Lesson 2 37

Standards Alignments

Addressing K.CC.C.6, K.G.B.6

The purpose of this activity is for students to compare groups of up to 10 objects. Students fill in the pattern block puzzle using 2 kinds of pattern blocks and then determine which pattern block they used fewer of. Monitor for students who:

- Can visually see which kind of pattern block they used more of, usually when there is a significant difference, such as 5 trapezoids and 2 triangles.
- Line up the pattern blocks and look to see which line has more.
- Count how many of each pattern block they used and use their knowledge of the count sequence to compare the numbers (MP2).

3 Access for English Learners

MLR8 Discussion Supports. Create a visual display of a group of triangles and a group trapezoids of different quantities. Annotate the display to illustrate the concepts of more and fewer. Invite students to chorally repeat the names of the shapes in unison 1-2 times: triangles and trapezoids. *Advances: Speaking, Representing*

Materials to Gather

Materials to Copy

Pattern blocks

Quack Quack (groups of 1)

Required Preparation

- To display during the activity synthesis, create:
 - o a shape with 6 green triangle pattern blocks and 2 red trapezoid pattern blocks.
 - a shape with 6 blue rhombus pattern blocks and 7 red trapezoid pattern blocks.

Student Responses

Answers vary.

Launch

- Groups of 2
- Give each student a copy of the Instructional master and access to pattern
- blocks.

"Fill in the duck puzzle. Only use green triangles and red trapezoids. Write a number to show how many pattern blocks you used."

• you asca.

2 minutes: independent work time

Activity

- "Did you use fewer red trapezoids or green triangles? How do you know?" (There are fewer green triangles. I counted 3 triangles and 4 trapezoids. 3 is less than 4.)
- 1 minute: independent work time
- 2 minutes: partner discussion
- Share responses
- "Work with your partner to fill in the dog puzzle with pattern blocks. Write a number to show how many pattern blocks you used."
- 2 minutes: partner work time
- "Tell your partner about the pattern blocks you used with the words 'more' and 'fewer."
- 30 seconds: quiet think time
- 1 minute: partner discussion

Synthesis

- Invite students to share how they filled in the dog puzzle and their comparison sentence.
- Display a shape created with 6 triangle pattern blocks and 2 red trapezoid pattern blocks.
- "How would you figure out if there were more trapezoids or more triangles in this puzzle?" (We can just see. There are only 2 trapezoids and there are a lot of triangles.)
- Display a shape created with 6 blue rhombus pattern blocks and 7 red trapezoid pattern blocks.
- "How would you figure out if there were more rhombuses or more trapezoids in this puzzle?" (We can line them up. We can count them.)

Unit 7 Lesson 2

Activity 2 © 15 min

Make a Y

Standards Alignments

Addressing K.CC.C.6, K.CC.C.7, K.G.B.6

The purpose of this activity is for students to compare groups of up to 10 objects. After students fill in the puzzle, they count and write a number to show how many pattern blocks they used. Writing a number encourages students to use the written numbers when comparing with their partner, rather than lining up the objects. Students may notice that using smaller pattern blocks, such as triangles, helps you use more shapes (MP7).

Access for Students with Disabilities

Representation: Develop Language and Symbols. Synthesis: Make connections between the number of pattern blocks used for the yellow hexagon versus the green triangles. Invite students to think about why using the green triangles produces more pattern blocks.

Supports accessibility for: Conceptual Processing, Visual-Spatial Processing

Materials to Gather

Pattern blocks

Student Responses

Answers vary.

Materials to Copy

Make a Y (groups of 1)

Launch

- Groups of 2
- Give each student a copy of the
 Instructional master and access to pattern
- blocks.

"Use the pattern blocks to fill in this puzzle.

The sentence says 'I used ___ pattern

blocks.' Write a number to show how many

- pattern blocks you used."
- 3 minutes: independent work time "Share your puzzle with your partner. Who used more pattern blocks to fill in their puzzlo?"
- puzzle?"

30 seconds: quiet think time

• 1 minute: partner discussion

Activity

- "Fill in the puzzle again on the second page and write a number to show how many pattern blocks you used. Your goal is to try to use more pattern blocks to fill in the puzzle than your partner."
- 3 minutes: independent work time
- "Figure out if you or your partner used more pattern blocks to fill in the puzzle."
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Synthesis

- Display a completed puzzle with a yellow hexagon in the middle.
- "What can I change about this puzzle so that I use more shapes?" (You can use smaller pattern blocks instead of the yellow hexagon.)

Advancing Student Thinking

If students fill in the puzzle the same way the second time, consider asking:

- "What can you change about the puzzle so that you can use more pattern blocks?"
- "If you take off this hexagon, which other pattern blocks could you put in that space?"

Activity 3 © 15 min

Introduce Pattern Blocks, Place the Last Pattern Block

Standards Alignments

Addressing K.G.B.6

Unit 7 Lesson 2 41

The purpose of this activity is for students to learn stage 6 of the Pattern Blocks center. Students play in partners, placing one pattern block at a time until the puzzle is complete. The student who places the last pattern block wins, which encourages students to think strategically about which pattern blocks they are placing. For example, a student may choose to place a hexagon pattern block that fills the whole space rather than a trapezoid pattern block.

After they participate in the center, students choose from any stage of previously introduced centers.

- Geoblocks
- Grab and Count
- Find the Pair

Materials to Gather

Materials from previous centers, Pattern blocks

Required Preparation

- Gather materials from:
 - Geoblocks, Stages 1 and 2
 - Grab and Count, Stage 1
 - o Find the Pair, Stages 1 and 2

Materials to Copy

Pattern Blocks Stage 6 Mat (groups of 2)

Give each group of students pattern blocks

"We are going to learn a new way to do the Pattern Blocks center. It is called Pattern Blocks, Place the Last Pattern Block."

"Take turns placing one pattern block in the puzzle. The person who places the last

pattern block to finish the puzzle wins."

and the Instructional master.

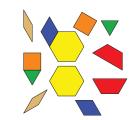
Display the Instructional master.

Student-facing Task Statement

Choose a center.

Pattern Blocks







Grab and Count

Find the Pair





Launch

Groups of 2

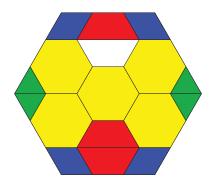
• 5 minutes: center work time



- "Now you can choose another center. You can also continue playing Pattern Blocks."
- Display the center choices in the student book.
- Invite students to work at the center of their choice.
- 7 minutes: center work time

Synthesis

• Arrange pattern blocks as pictured:



"It is Elena's turn to place a pattern block.
 Can she win? What would she need to do?"
 (If she places the red trapezoid pattern block, the puzzle will be full and she will win.)

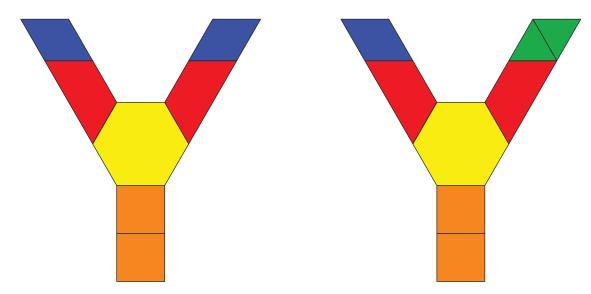
Lesson Synthesis

© 5 min

"Today we solved puzzles in different ways and figured out if we used more or fewer pattern blocks."

Arrange the pattern blocks as pictured in the shapes from the second activity:

Unit 7 Lesson 2 43



"Which puzzle uses fewer pattern blocks? How do you know?" (The first one uses fewer pattern blocks. They are the same but it has 1 blue rhombus instead of 2 green triangles.)

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

Response to Student Thinking

Students circle the penguin with fewer pattern blocks.

Next Day Support

 During the launch of the first activity in the next lesson, have two students share shapes that they created with pattern blocks. Invite students to share methods for comparing the number of pattern blocks in each shape.

Lesson 3: Questions and Stories About Shapes

Standards Alignments

Addressing K.CC, K.G.B.5, K.G.B.6, K.OA, K.OA.A.1, K.OA.A.2

Teacher-facing Learning Goals

• Tell and solve addition or subtraction story problems involving shapes.

Student-facing Learning Goals

Let's ask questions about shapes.

Lesson Purpose

The purpose of this lesson is for students to ask and answer mathematical questions about shapes composed of pattern blocks.

In previous lessons, students have answered "how many" questions and comparison questions about shapes composed of pattern blocks. In this lesson, students create a shape out of pattern blocks and brainstorm questions that they could ask about other students' shapes. Students create and solve story problems about shapes made out of pattern blocks (MP2, MP4).

Access for:

Students with Disabilities

• Engagement (Activity 2)

English Learners

MLR7 (Warm-up)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Colored pencils, crayons, or markers: Activity 3
- Connecting cubes or two-color counters: Activity 2
- Materials from previous centers: Activity 3
- Pattern blocks: Activity 1, Activity 2, Activity

Materials to Copy

 Pattern Blocks Stage 7 Recording Sheet (groups of 1): Activity 3

Unit 7 Lesson 3 45

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	5 min

Teacher Reflection Question

Students shared their thinking multiple times in this lesson. What have you noticed about the language students use? What support can you offer to students who struggle to communicate their ideas orally?

 $\textbf{Cool-down} \hspace{0.2cm} \text{(to be completed at the end of the lesson)}$

© 0 min

Unit 7, Section A Checkpoint

Standards Alignments

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

Student-facing Task Statement

Lesson observations

Student Responses

- Count all to determine the total.
- Use objects, drawings, or equations to represent a story problem.

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

Warm-up © 10 min

Notice and Wonder: Mai's Shape

Standards Alignments

Addressing K.CC, K.OA

The purpose of this warm-up is to elicit the mathematical questions that students produce about shapes composed of pattern blocks, which will be useful when students create and ask questions about shapes in a later activity. While students may notice and wonder many things about the shape, the questions that students can answer about the image are the important discussion points. As students discuss and justify their questions and answers, they share a mathematical claim and the thinking behind it (MP3).

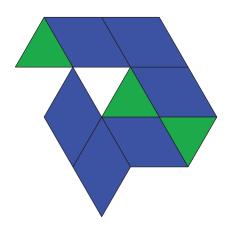
Instructional Routines

Notice and Wonder

Student-facing Task Statement

Mai used pattern blocks to make this shape.

What do you notice? What do you wonder?



Student Responses

Students may notice:

- Mai used pattern blocks to make the shape.
- There are blue shapes and triangles.
- Mai used more blue shapes than triangles.

Students may wonder:

- How many blue rhombuses did she use?
- How many pattern blocks did Mai use?
- Why didn't Mai use any square pattern blocks?
- What is the shape supposed to look like?

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

- Reread each of the questions that students shared.
- As you read each question, ask: "Can we figure out the answer to this question? How?" (We can figure out how many blue rhombuses she used by counting. We would have to ask Mai why she didn't use any square pattern blocks.)

Unit 7 Lesson 3 47

Activity 1 © 15 min

Ask Math Questions About Shapes

Standards Alignments

Addressing K.CC, K.G.B.6, K.OA

The purpose of this activity is for students to develop math questions about shapes created from pattern blocks. Arrange students around the room so that students can easily circulate to see each other's shapes. Consider expanding the gallery walk into a larger activity. Invite other students, teachers, or family members to participate and ask students questions about their shapes.

When students ask mathematical questions and recognize the mathematical features of the shapes and the pattern blocks they are made of, they model with mathematics (MP4).

Access for English Learners

MLR7 Compare and Connect. Synthesis: After the Gallery Walk, lead a discussion comparing, contrasting, and connecting the different representations. Remind students to use words such as more and fewer. To amplify student language, and illustrate connections, follow along and point to the relevant parts of the displays as students speak.

Advances: Representing, Conversing

Materials to Gather

Pattern blocks

Student-facing Task Statement

Student Responses

Sample responses:

- How many hexagons did ____ use? How many squares did ____ use?
- How many pattern blocks did they use?
- Did ____ use more triangles or more rhombuses?

Launch

- Give students access to pattern blocks.
- "Put together pattern blocks to make a shape."
- 2 minutes: independent work time
- "Walk around and look at the shapes that everyone created. Think of at least one question that you can ask about each shape that you see. Write down at least one question that you want to share with

the class. You can draw a picture or write words and numbers to help you remember the question."

Activity

- Invite half the class to stand next to their shape while the other half of the class walks around and looks at the shapes.
- 5 minutes: gallery walk
- Switch groups.
- 5 minutes: gallery walk

Synthesis

- Choose one student-created shape to display.
- "What questions did you think of to ask about ______'s shape?"
- Share and record responses.
- If not mentioned in the discussion, ask "What questions can we ask about ______'s shape that use 'more' or 'fewer'?" (Did she use more triangles or more hexagons to make the shape? Which pattern blocks did she use fewer of?)
- Share and record responses.
- "Think of a story that you can tell about _____'s shape. Think of a question that you can ask at the end of the story."
- Share responses.
- "In the next activity, you will make and tell stories about your own shape."

Activity 2 © 15 min

Tell Math Stories About Shapes

Unit 7 Lesson 3 49

Standards Alignments

Addressing K.CC, K.G.B.6, K.OA

The purpose of this activity is for students to develop and solve story problems about shapes made from pattern blocks. Students will likely gravitate toward Put Together, Total Unknown or Add To, Result Unknown story problems. The purpose of the activity synthesis is to highlight Take From, Result Unknown story problems. When students solve the story problems they reason abstractly and quantitatively.

Access for Students with Disabilities

Engagement: Internalize Self-Regulation. Provide students an opportunity to self-assess and reflect on their story problem. For example, their story problem should have a question at the end. Supports accessibility for: Organization, Memory, Attention

Materials to Gather

Connecting cubes or two-color counters, Pattern blocks

Student Responses

Sample responses:

- Elena put 6 squares and 2 hexagons together to make a house. How many pattern blocks did Elena use to make the house?
- There are 10 pattern blocks in the train. Lin took away 3 of the pattern blocks. How many blocks are left in the train?

Launch

- Groups of 2
- Give students access to pattern blocks and connecting cubes or two-color counters.
- "Put together pattern blocks to make a shape. Use 2 different kinds of pattern blocks."
- 3 minutes: independent work time

Activity

- "Think of a story problem that you could tell your partner about your shape.
 Remember to think of a question to go at the end."
- 2 minutes: quiet think time
- "Share the shape you created and the story problem with your partner. Solve the story problem that your partner shares. Show

your thinking using objects, drawings, numbers, or words."

• 5 minutes: partner work time

Synthesis

- Choose 1 student-created shape to display.
- "Think of a story that you can tell about _____'s shape. Remember to think of a question to go at the end of the story."
- Share and record responses.
- If not mentioned in the discussion, ask
 "What kind of story could I tell about _____'s
 shape that uses subtraction, or taking
 away?" (____ made a shape with 8 pattern
 blocks. Then her little sister took 2 of the
 pattern blocks away.)

Activity 3 © 15 min

Introduce Pattern Blocks, Build and Draw

Standards Alignments

Addressing K.G.B.5, K.G.B.6

The purpose of this activity is for students to learn stage 7 of the Pattern Blocks center. Students count out a given number of objects as they put together pattern blocks to make a new shape. Students also practice drawing shapes. A blank template is included at the end of the Instructional master so that additional numbers can be written in.

After they participate in the center, students choose from any stage of previously introduced centers.

- Geoblocks
- Grab and Count
- Find the Pair

Unit 7 Lesson 3 51

Materials to Gather

Colored pencils, crayons, or markers, Materials from previous centers, Pattern blocks

Required Preparation

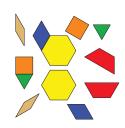
- Gather materials from:
 - o Geoblocks, Stages 1 and 2
 - Grab and Count, Stage 1
 - o Find the Pair, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Pattern Blocks







Grab and Count

Find the Pair







Materials to Copy

Pattern Blocks Stage 7 Recording Sheet (groups of 1)

Launch

- Groups of 2
- Give each student a recording sheet and pattern blocks.
- "We are going to learn a new way to do the Pattern Blocks center. It is called Pattern Blocks, Build and Draw."
- Display the Instructional master.
- "Each page tells you how many pattern blocks you need to use. This page says 'Put together 15 pattern blocks to make a shape.' Make a shape with 15 pattern blocks and then share it with your partner. Once you've checked to make sure your partner used 15 pattern blocks, draw or trace your partner's shape."

Activity

- 5 minutes: center work time
- "Now you can choose another center. You can also continue playing Pattern Blocks."
- Display the center choices in the student book.
- Invite students to work at the center of their choice.
- 7 minutes: center work time

Synthesis

 "Which pattern blocks did you find the most challenging to draw? Why do you think they were the most challenging?"

Lesson Synthesis

🕓 5 min

"Today we asked math questions and told story problems about shapes made from pattern blocks."

Write the story problem:

"Andre used 4 square pattern blocks to make a car.

Then he put 2 hexagon pattern blocks on the car to make the wheels."

"What question can Lin ask at the end of the story?" (How many pattern blocks did he use to make the car and the wheels? How many more squares did he use than hexagons?)

Write 4 + 2 = 6.

"Andre used 4 square pattern blocks and 2 hexagon pattern blocks to make a car. He used 6 pattern blocks. We can write 4+2=6 to show what happened in the story. We can read it as 4 plus 2 is 6 or 4 plus 2 equals 6."

Unit 7 Lesson 3 53

Lesson 4: Pattern Block Puzzles and Equations

Standards Alignments

Addressing K.G.B.6, K.OA.A.1

Building Towards K.G.B.6

Teacher-facing Learning Goals

 Match addition equations to shapes with two kinds of pattern blocks.

Student-facing Learning Goals

 Let's use equations to show how many of each shape there are.

Lesson Purpose

The purpose of this lesson is for students to relate addition equations to shapes made with 2 kinds of pattern blocks.

In previous units, students have related expressions and equations to story problems, objects, and drawings. Students have separately made sense of equations with the total first (3=2+1) and with the addends first (2+1=3). In this lesson, students work with both forms of equations in the same activity, which requires them to attend to the placement and meaning of the plus sign. In this lesson, students hear equations read with the term "equals" rather than "is" for the first time. In future lessons, students will use equations to represent story problems about pattern blocks.

Access for:

Students with Disabilities

S English Learners

Engagement (Activity 2)

MLR8 (Activity 1)

Instructional Routines

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

Materials to Gather

Materials from previous centers: Activity 3

Pattern blocks: Activity 1, Activity 2

Lesson Timeline

Warm-up

10 min

Teacher Reflection Question

In grade 1, students make sense of the meaning

Activity 1	10 min
Activity 2	10 min
Activity 3	25 min
Lesson Synthesis	5 min

of the equal sign and determine if equations involving addition and subtraction are true or false. How does the work in this lesson prepare students for this work in grade 1?

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

① 0 min

Unit 7, Section A Checkpoint

Standards Alignments

Addressing K.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

• Explain connections between objects, drawings, story problems, and equations.

----- Begin Lesson

Warm-up © 10 min

Which One Doesn't Belong: Equations

Standards Alignments

Addressing K.OA.A.1

This warm-up prompts students to carefully analyze and compare features of four equations. In making comparisons, students have a reason to use language precisely (MP6). The activity also enables the teacher to hear the terminologies students know and how they talk about characteristics of equations.

Unit 7 Lesson 4 55

Instructional Routines

Which One Doesn't Belong?

Student-facing Task Statement

Which one doesn't belong?

A

$$3 + 3 = 6$$

$$6 = 4 + 2$$

С

В

$$4 + 3 = 7$$

$$4 + 2 = 6$$

Student Responses

Sample responses:

A doesn't belong because:

• It is the only one that doesn't have a 4.

B doesn't belong because:

• It is the only one where 1 number is first instead of 2 numbers.

C doesn't belong because:

• It is the only one that is not 6.

D doesn't belong because:

• It is blue. It is not black.

Launch

- Groups of 2
- Display 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
- Share and record responses.

Synthesis

- Display 6 = 4 + 2 and 4 + 2 = 6.
- "What is the same about these equations? What is different?" (They have the same numbers. The numbers are in a different order. One is blue and one is black. They both show that 4 plus 2 is 6.)

Activity 1

(10 min

Match Equations to Pattern Block Puzzles

Standards Alignments

Addressing K.OA.A.1 Building Towards K.G.B.6

The purpose of this activity is for students to match equations to pattern block puzzles that show two groups of objects (MP2). Students make sense of equations with both the addends written first and the total written first.

Access for English Learners

MLR8 Discussion Supports. During partner work time, invite each partner to read each equation aloud. Listen for and clarify questions about the equations.

Advances: Speaking, Conversing

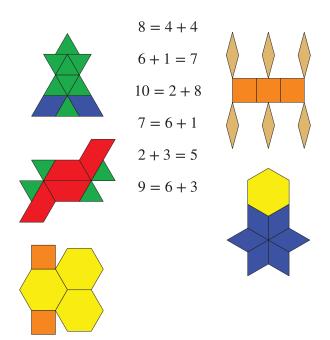
Materials to Gather

Pattern blocks

Required Preparation

• Create a shape with 1 red trapezoid pattern block and 4 green triangle pattern blocks to display in the activity synthesis.

Student-facing Task Statement



Student Responses

Students match each equation with one shape. Students match 7 = 6 + 1 and 6 + 1 = 7 to the

Launch

- Groups of 2
- Display the list of equations from the student book.
- "Let's read each equation together."
- Read each equation using both "is" and "equals." For example, "8 is 4 plus 4. 8 equals 4 plus 4."
- Invite students to chorally repeat each equation in unison 1-2 times.

Activity

- "Draw a line from each equation to the shape that it matches."
- 2 minutes: independent work time
- 3 minutes: partner work time

Synthesis

Display the image of the shape made out of
 6 blue rhombuses and 1 yellow hexagon:

Unit 7 Lesson 4 57

same shape.

- "Which equation did you match to this shape? Why?" (7 = 6 + 1 or 6 + 1 = 7. There are 6 blue rhombus pattern blocks and 1 yellow hexagon pattern block. There are 7 pattern blocks together.)
- "We can write 7 first because there are 7
 pattern blocks altogether or we can write 6
 plus 1 first because there are 6 blue
 rhombus pattern blocks and 1 yellow
 hexagon pattern block. Both equations tell
 us that there are 7 pattern blocks, with 6
 blue rhombuses and 1 yellow hexagon."
- Create and display a shape with 1 red trapezoid pattern block and 4 green triangle pattern blocks.
- "Tell your partner an equation that you could write to match this shape."
 (4 + 1 = 5, 1 + 4 = 5, 5 = 4 + 1, or 5 = 1 + 4)
- Share and record responses.

Activity 2 © 10 min

Make Shapes to Represent Equations

Standards Alignments

Addressing K.G.B.6, K.OA.A.1

The purpose of this activity is for students to put together pattern blocks to represent equations (MP2). In order to draw the shapes they created with pattern blocks, students may draw the shapes or trace each shape. Using different colored crayons (red for the red trapezoids, blue for the blue rhombuses) may help students differentiate between the shapes. Students are not expected to draw precise or accurate shapes.

Access for Students with Disabilities

Engagement: Internalize Self-Regulation. Provide students an opportunity to self-assess and reflect on the shapes they made for each equation. For example, students should be able to point out where they see each number in the equation in the shape they created for it.

Supports accessibility for: Organization, Memory, Conceptual Processing

Materials to Gather

Pattern blocks

Student-facing Task Statement

$$4 = 1 + 3$$

$$10 + 0 = 10$$

$$5 + 4 = 9$$

$$8 = 2 + 6$$

$$3 + 3 = 6$$

$$7 = 2 + 5$$

Student Responses

Answers vary.

Launch

- Groups of 2
- Give students access to pattern blocks.
- "Put together pattern blocks to make a shape that matches each equation. Trace or draw each shape that you make."

Activity

- 4 minutes: independent work time
- 3 minutes: partner work time

Synthesis

- Invite 2 students to share the shapes that they created for 7 = 2 + 5.
- As each student shares, ask:
 - "Where do you see 7 in their shape?"
 - "Where do you see 2 in their shape?"
 - "Where do you see 5 in their shape?"
 - "Which number tells us how many pattern blocks there are altogether?"

Unit 7 Lesson 4 59

Activity 3 © 25 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Pattern Blocks
- Geoblocks
- Grab and Count
- Find the Pair

Materials to Gather

Materials from previous centers

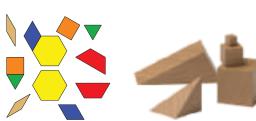
Required Preparation

- Gather materials from:
 - o Pattern Blocks, Stages 1-7
 - o Geoblocks, Stages 1 and 2
 - Grab and Count, Stage 1
 - o Find the Pair, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Pattern Blocks



Grab and Count

Find the Pair

Geoblocks

Launch

- "Today we 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

- Display a scattered pile of 7 pattern blocks.
- "Mai grabbed these pattern blocks. What is an estimate that's too high?" "Too low?" "About right?" (20 is too high. 3 is too low. 10 is just right.)

Lesson Synthesis

3 5 min

Create and display a shape made with 2 green triangles and 2 blue rhombuses.

"Elena made this shape to match an equation. What equation do you think she was trying to match?" (4 = 2 + 2 or 2 + 2 = 4. There are 2 triangles and 2 rhombuses. There are 4 pattern blocks.)

Unit 7 Lesson 4 61

Lesson 5: Story Problems about Shapes

Standards Alignments

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

Building Towards K.OA.A.2

Teacher-facing Learning Goals

- Match equations to story problems.
- Solve story problems involving shapes.

Student-facing Learning Goals

• Let's solve story problems and match them to equations.

Lesson Purpose

The purpose of this lesson is for students to solve Add To, Result Unknown and Take From, Result Unknown story problems about pattern blocks.

In a previous unit, students used objects, drawings, expressions, and equations to represent and solve story problems. In the first activity, students choose an equation that matches the story problem (MP2). Then students fill in equations to represent story problems.

Access for:

- Students with Disabilities
 - Action and Expression (Activity 2)

3 English Learners

• MLR8 (Activity 1)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

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

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	10 min
Activity 3	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

Who got to do math today in class and how do you know? Identify the norms or routines that allowed those students to engage in mathematics. How can you adjust these norms and routines so all students do math tomorrow?

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

① 0 min

Unit 7, Section A Checkpoint

Standards Alignments

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

Student-facing Task Statement

Lesson observations

Student Responses

- Accurately retell a story problem in their own words.
- Use objects, drawings, or equations to represent a story problem.
- Explain connections between objects, drawings, story problems, and equations.

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

Warm-up © 10 min

Notice and Wonder: Questionless Story Problem

Standards Alignments

Building Towards K.OA.A.2

Unit 7 Lesson 5

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?

Elena used 9 pattern blocks to make a train.

Then she took 3 of the pattern blocks off of the train and put them back in the bucket.

Student Responses

Students may notice:

- Elena is making a train.
- She took some of the blocks away.

Students may wonder:

- What kind of pattern blocks did she use?
- Why did she take some of the blocks off of the train?
- How many pattern blocks are still on the train?
- Why isn't there a question?

Launch

- Groups of 2
- Display the story.
- "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

- "This story problem is missing a question.
 What questions can you ask about the the story?" (How many pattern blocks are left?
 What kind of pattern blocks did she use?)
- Share and record responses.

Activity 1

① 10 min

Match Story Problems to Equations

Standards Alignments

Addressing K.OA.A.1 Building Towards K.OA.A.2

The purpose of this activity is for students to match story problems to equations (MP2).

3 Access for English Learners

MLR8 Discussion Supports. Invite partners to act out the scenario using connecting cubes, two-color counters, or pattern blocks. Listen for and clarify any questions about the context and meaning of words such as "took."

Advances: Speaking, Representing

Student-facing Task Statement

1. Clare made a shape with 7 pattern blocks. Her little brother came and took 3 of the pattern blocks.

How many pattern blocks does Clare have now?

$$7 = 4 + 3$$

$$7 - 3 = 4$$

$$7 + 3 = 10$$

2. Kiran put together 2 pattern blocks to make a shape.

Jada placed 5 more pattern blocks on the shape.

How many pattern blocks are in Kiran and Jada's shape?

$$5 - 2 = 3$$

$$4 = 2 + 2$$

$$2 + 5 = 7$$

Student Responses

1.
$$7 - 3 = 4$$

$$2. 2 + 5 = 7$$

Launch

- Groups of 2
- Read the first story problem.
- "Tell your partner what happened in the story."
- Monitor for students who accurately retell the story. Choose at least one student to share with the class.
- Reread the first story problem.
- 1 minute: quiet think time

Activity

- "Show your thinking using objects, drawings, numbers, or words."
- 2 minutes: independent work time
- 2 minutes: partner discussion
- "Circle the equation that matches the story."
- 1 minute: independent work time
- 1 minute: partner discussion
- Repeat the steps with the second story problem.

Synthesis

 "In the next activity, you will solve story problems and create your own equations to match them."

Unit 7 Lesson 5 65

Activity 2 © 10 min

Solve Story Problems

Standards Alignments

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

The purpose of this activity is for students to solve Add To, Result Unknown and Take From, Result Unknown story problems. Students fill in an equation, which encourages them to connect the action in the story to the meaning of the + and - signs (MP2).

@ Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a strategy, including what drawings, numbers, words, or objects they will use, to answer the question for each story problem.

Supports accessibility for: Conceptual Processing, Organization

Materials to Gather

10-frames, Connecting cubes or two-color counters, Pattern blocks

Student-facing Task Statement

1. Andre put together 4 pattern blocks to make a shape.

Then Andre put 4 more pattern blocks on the shape.

How many pattern blocks are in Andre's shape?

equation:	8 =	+

2. Elena used 9 pattern blocks to make a train. Then she took 3 of the pattern blocks off of the train and put them back in the bucket.

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters, 10-frames, and pattern blocks.
- Read the first story problem.
- "Tell your partner what happened in the story."
- Monitor for students who accurately retell the story. Choose at least one student to share with the class.

Activity

• Reread the first story problem.

How many pattern blocks are in Elena's train now?

equation: 9 - 3 =

Student Responses

- 1. 8 pattern blocks, 8 = 4 + 4
- 2. 6 pattern blocks, 9 3 = 6

- "Show your thinking using objects, drawings, numbers, or words."
- 2 minutes: independent work time
- 2 minutes: partner discussion
- Display 8 = ____ + ____
- "Lin began writing this equation but didn't finish it. Finish her equation to show what happened in the story problem."
- 2 minutes: independent work time
- Repeat the steps with the second story problem. Display 9 3 =_____ for students to complete the equation.

Synthesis

- Invite a student who drew symbols such as circles for the second story problem to share.
- "What does 9 mean in the story?" (Elena used 9 pattern blocks to make the train.)
- "Where do you see 9 in _____'s drawing?" (There are 9 circles altogether, to represent the 9 pattern blocks on the train at the beginning.)
- "Where do you see subtraction in _____'s drawing?" (There are some circles crossed out, which means the pattern blocks were taken away, or subtracted.)
- "What does 3 mean in the story?" (Elena put back 3 pattern blocks.)
- "Where do you see 3 in _____'s drawing?" (There are 3 circles crossed out, which represent the 3 pattern blocks that Elena put away.)
- "How many pattern blocks does Elena have now? How do you know?" (6. I counted the circles that aren't crossed out.)
- Read the equation as 9 minus 3 equals 6.
- "We can write that as 9 3 = 6."

Unit 7 Lesson 5 67

Activity 3 © 20 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Pattern Blocks
- Geoblocks
- Grab and Count
- Find the Pair

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - o Pattern Blocks, Stages 1-7
 - o Geoblocks, Stages 1 and 2
 - Grab and Count, Stage 1
 - o Find the Pair, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Pattern Blocks



Geoblocks

Grab and Count

Find the Pair

Launch

- "Today we 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.

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

Synthesis

 "When you work in centers, do you prefer to work by yourself, with a partner, or in a group?"

Lesson Synthesis

() 10 min

"Today we solved story problems and used equations to show what happened in the story problems."

"Think of a story that involves subtraction, or taking away. Tell the story to your partner."

"What equation could you use to show what happens in your story?"

Unit 7 Lesson 5

Lesson 6: Compose and Decompose 10 with Pattern Blocks

Standards Alignments

Addressing K.CC.A.1, K.G.B.6, K.OA.A.1, K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5

Building Towards K.OA.A.4

Teacher-facing Learning Goals

- Compose and decompose 10 in more than one way.
- Solve Put Together/Take Apart, Both Addends Unknown story problems involving shapes.

Student-facing Learning Goals

 Let's find different ways to make 10 using our pattern blocks.

Lesson Purpose

The purpose of this lesson is for students to compose and decompose 10 in multiple ways in the context of pattern blocks.

In a previous unit, students solved Put Together/Take Apart, Both Addends Unknown story problems and decomposed 10 in more than one way. Students are not required to find all the ways to decompose 10, but they may use their understanding of how to find a number that makes 10 when added to a given number to help them find different decompositions. This lesson has a Student Section Summary.

Access for:

- Students with Disabilities
- Engagement (Activity 2)

- **S** English Learners
- MLR8 (Activity 1)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

• 10-frames: Activity 1, Activity 2

Materials to Copy

• Book of 10 (groups of 1): Activity 2

 Connecting cubes or two-color counters: Activity 1

Cups: Activity 3

• Pattern blocks: Activity 1, Activity 2

• Two-color counters: Activity 3

 Shake and Spill Stage 4 Recording Sheet Kindergarten (groups of 1): Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	20 min
Activity 3	15 min
Lesson Synthesis	5 min

Teacher Reflection Question

Which students did you talk to or observe during independent or group work time? Which students did you not get a chance to talk to or observe? How can you use centers in the coming days to check-in with students that you haven't observed recently?

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

© 0 min

Unit 7, Section A Checkpoint

Standards Alignments

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

Student-facing Task Statement

Lesson observations

Student Responses

- Accurately retell a story problem in their own words.
- Use objects, drawings, or equations to represent a story problem.
- Explain connections between objects, drawings, story problems, and equations.

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

Unit 7 Lesson 6 71

Warm-up © 10 min

Choral Count: Practice Counting by 10

Standards Alignments

Addressing K.CC.A.1

The purpose of this warm-up is for students to count by 10 to 100. Although students see the written sequence of numbers, they are not required to identify numbers beyond 20 until Grade 1.

Instructional Routines

Choral Count

Student Responses
10
20
30
40
50
60
70
80
90
100
Sample responses:

- Each number has a 0.
- The first number goes up by 1 each time.

Launch

- "Let's count to 100 by 10."
- Record as students count.
- Count to 100 by 10 2-3 times.

Activity

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

Synthesis

- "Take turns counting to 100 by 10 with your partner."
- "We will keep practicing counting to 100 by 10."

Activity 1 © 10 min

Diego's Shape

Standards Alignments

Addressing K.OA.A.2, K.OA.A.3

Building Towards K.OA.A.4

The purpose of this lesson is for students to solve a Put Together/Take Apart, Both Addends Unknown story problem in the context of putting together pattern blocks (MP2). If students finish early, invite them to find multiple solutions to the story problem.

Access for English Learners

MLR8 Discussion Supports. Synthesis: For each decomposition that is shared, invite students to turn to a partner and restate the recorded equation.

Advances: Listening, Speaking

Materials to Gather

10-frames, Connecting cubes or two-color counters, Pattern blocks

Student-facing Task Statement

Diego built a shape with 10 pattern blocks. He only used squares and triangles.

How many square pattern blocks did Diego use? Then how many triangle pattern blocks did Diego use?

_			
ᆫ᠈	pression:		
ГΧ	DIESSIOH.		

Student Responses

Sample responses:

- 6 squares and 4 triangles
- 8 triangles and 2 squares

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters, 10-frames, and pattern blocks.
- Read and display the task statement.
- "Tell your partner what happened in the story."
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Monitor for students who accurately retell the story. Choose at least one student to share with the class.
- Reread the task statement.

Unit 7 Lesson 6 73

 "Show your thinking using drawings, numbers, words, or objects."

Activity

- 2 minutes: independent work time
- 2 minutes: partner discussion
- "If you haven't already, write an expression to show how many square pattern blocks and triangle pattern blocks Diego used."
- 2 minutes: independent work time

Synthesis

- Invite students who found different decompositions of 10 to share.
- As students share, record each solution with an equation, such as 10 = 7 + 3.
- "Did ____ and ___ both show what happened in the story? How do you know?" (Yes. They both have 10 pattern blocks, with some triangles and some squares.)
- "In the next activity, we will find more ways that we can make shapes with 10 pattern blocks."

Activity 2

① 20 min

Many Ways to Make 10

♣ ↔ ♣ PLC Activity

Standards Alignments

Addressing K.G.B.6, K.OA.A.3, K.OA.A.4

The purpose of this activity is for students to compose and decompose 10 in multiple ways in the context of putting together pattern blocks. In order to draw the shapes they created with pattern blocks, students may draw or trace each shape. Using different colored crayons (red for the red

trapezoids, blue for the blue rhombuses) may help students differentiate between the shapes. Students are not expected to draw precise or accurate shapes. Students may use a combination of words, numbers, and colors to label and record how many of each pattern block they used in their book. In the activity synthesis, students look for patterns in equations and try to determine if all of the decompositions of 10 have been found (MP7).

Access for Students with Disabilities

Engagement: Internalize Self-Regulation. Provide students an opportunity to self-assess and reflect on the shapes they made for the number 10. For example, students should be able to recognize that their shape only consists of blue and red pattern blocks and that they should have the total number of blocks used for each color listed in each drawing.

Supports accessibility for: Organization, Memory, Conceptual Processing

Materials to Gather

Materials to Copy

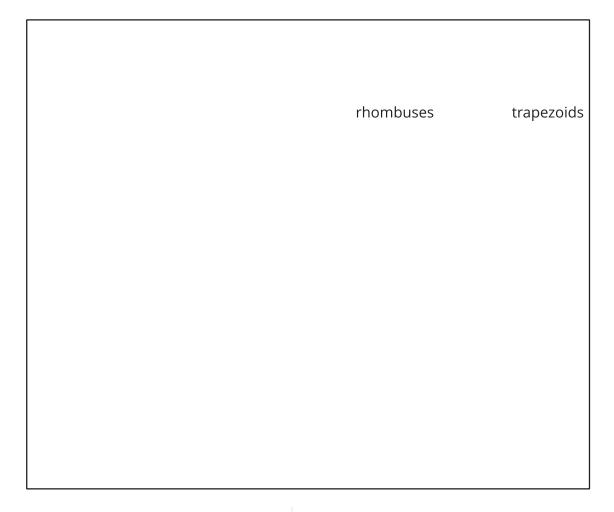
10-frames, Pattern blocks

Book of 10 (groups of 1)

Required Preparation

- Create a book for each student from the Instructional master.
- Create a chart labeled with "trapezoids" and "rhombuses" as pictured:

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Student Responses

Sample responses:

10 pattern blocks, 7 trapezoids and 3 rhombuses

Launch

- Groups of 2
- Give students access to pattern blocks and 10-frames.
- "Work with your partner to put together 10 pattern blocks to make a shape. Use only blue rhombuses and red trapezoids."
- 2 minutes: partner work time
- "Draw the shape that you created on the first page on your book."
- 2 minutes: independent work time
- "What numbers or words can you use to describe the shape that you created?" (10 for the 10 pattern blocks. 6 for the 6 blue pattern blocks. 4 for the 4 red pattern blocks.)

- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- "At the top of the page, write a number to show how many pattern blocks you used altogether."
- 30 seconds: independent work time
- "At the bottom of the page, write numbers or words to show how many red trapezoids and how many blue rhombuses you used."
- 1 minute: independent work time

Activity

- "Now, you are going to create different shapes with 10 pattern blocks. Use only red trapezoids and blue rhombuses. Change the number of red trapezoids and blue rhombuses you use each time you make a new shape. Fill in a new page in your book for each new shape you create."
- 15 minutes: partner work time

Synthesis

- Display the chart paper labelled with "trapezoids" and "rhombuses".
- "Pick your favorite page in your book. How many blue rhombus pattern blocks and how many red trapezoid pattern blocks did you use to create the shape on your favorite page?"
- Share and record all student responses as equations on a chart. Record the responses systematically, as in:
 - \circ 10 = 1 + 9
 - \circ 10 = 2 + 8
 - \circ 10 = 3 + 7
 - \circ 10 = 4 + 6
 - \circ 10 = 5 + 5
 - \circ 10 = 6 + 4

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$$\circ$$
 10 = 7 + 3

$$\circ$$
 10 = 8 + 2

$$\circ$$
 10 = 9 + 1

- If a student shares a decomposition that was previously shared, point to the decomposition that was already listed.
- "What do you notice?" (Sample responses:
 The numbers in one column go up. The other numbers go down. We didn't write an equation with 4 trapezoids.)
- If not all decompositions of 10 are listed, ask "Are there any ways to make 10 that are missing from our list? What makes you think that?" (There's no 4 under the trapezoid. If we did 6 trapezoids and 4 rhombuses, maybe we could do 4 trapezoids and 6 rhombuses instead.)

Introduce Shake and Spill, Cover (up to 10)

Standards Alignments

Addressing K.OA.A.5

The purpose of this activity is for students to learn stage 4 of the Shake and Spill center. Students use 3, 4, or 5 counters. They see some of the counters and determine how many more counters are under the cup. Students fill in expressions to represent each decomposition. Although determining the missing part of a total is not required by the standards, this activity helps students build fluency with addition and subtraction within 5. In a future variation of this center, students will play with up to 10 counters.

Materials to Gather

Cups, Two-color counters

Materials to Copy

Shake and Spill Stage 4 Recording Sheet Kindergarten (groups of 1)

Launch

- Groups of 2
- Give each group of students a cup, 5 two-color counters, and 2 copies of the Instructional master.
- "We are going to learn a new way to do the Shake and Spill center. It is called Shake and Spill, Cover. Let's play a round together."
- "I am going to put 3 counters in the cup and shake them up. Before I spill the counters, you will close your eyes so I can cover all the yellow counters with the cup. Then you will open your eyes and figure out how many counters are under the cup."
- Put 3 counters in a cup and shake them up.
- "Close your eyes."
- Spill the counters and cover 1 yellow counter.
 Leave 2 red counters on the table.
- "Open your eyes. Look at the counters on the table. How many counters are under the cup? How do you know?" (One because there are 2 on the table and 2 and 1 more makes 3.)
- 30 seconds: partner discussion
- Share responses.
- Pick up the cup showing the 1 counter that was covered.
- "Now we fill in the recording sheet. We had 3 counters total. Then we fill in the expression that matches the parts we broke 3 into. There were 2 counters outside the cup and 1 counter in the cup."
- Demonstrate completing the recording sheet.
- "Take turns with your partner spilling and covering the yellow counters. On each turn you can decide to use 3, 4, or 5 counters.
 Make sure you and your partner agree on how many total counters you are using before you shake, spill, and cover."

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Activity

• 10 minutes: partner work time

Synthesis

- Display 1 + 3.
- "Mai was playing Shake and Spill, Cover. She wrote this expression. What could her counters look like?" (1 yellow and 3 red or 3 red and 1 yellow.)
- If needed, ask "How many counters were under the cup? How many counters were out on the table?"

Lesson Synthesis

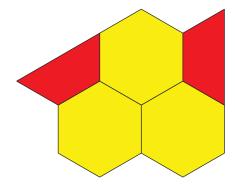
O 5 min

"Tyler made a shape with 10 pattern blocks, some blue rhombuses and some red trapezoids. If he used 4 trapezoids, how many rhombuses did he use?" (He used 6 blue rhombuses. 4 and 6 make 10.)

Student Section Summary

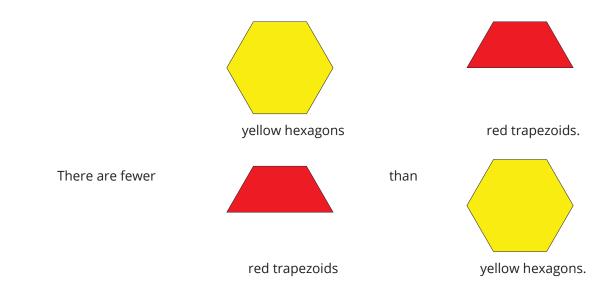
In this section, we put together pattern blocks to fill in puzzles and make shapes.

We wrote numbers to show how many pattern blocks we used and figured out which pattern blocks we used more of.





There are more than



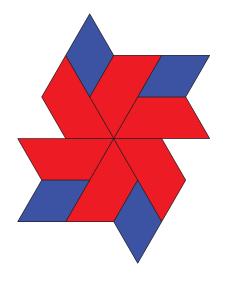
We matched equations to pattern block shapes and to story problems.

Kiran put together 5 pattern blocks to make a shape. Jada put 2 more pattern blocks on Kiran's shape.

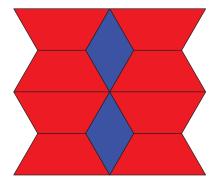
How many pattern blocks are in Kiran and Jada's shape?

We showed many different ways to make 10 using different types of pattern blocks.

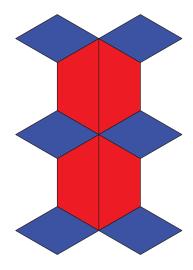
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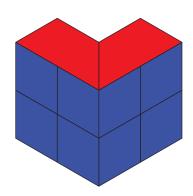




2 + 8 = 10



10 = 6 + 4



10 = 8 + 2

Section B: Describe, Compare, and Create Solid Shapes

Lesson 7: Flat and Solid Shapes

Standards Alignments

Addressing K.G, K.G.A.3, K.G.B.4, K.G.B.5, K.MD.B.3

Teacher-facing Learning Goals

• Distinguish between flat and solid shapes.

Student-facing Learning Goals

Let's build shapes with clay.

Lesson Purpose

The purpose of this lesson is for students to identify shapes as flat (two-dimensional) or solid (three-dimensional) as they build and sort shapes.

In previous lessons, students explored, identified, created, and counted two-dimensional shapes such as circles and squares. In this lesson, students are not expected to use precise vocabulary so they may use words like "lying flat" to describe a two-dimensional shape and words like "solid," "taking up space," "tall," or "sticks up" to describe a three-dimensional shape. Throughout this unit, students will hear and use "flat" and "solid" to describe two-dimensional and three-dimensional shapes. The names of common three-dimensional shapes will be introduced in a future lesson.

Access for:

③ Students with Disabilities

Action and Expression (Activity 2)

English Learners

MLR8 (Activity 2)

Instructional Routines

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

Materials to Gather

Clay: Activity 1

Geoblocks: Activity 2

• Materials from previous centers: Activity 3

Solid shapes: Activity 2

Materials to Copy

Flat Shapes Cards K (groups of 2): Activity 2

Unit 7 Lesson 7

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	20 min
Lesson Synthesis	5 min

Teacher Reflection Question

The standards ask students to "identify shapes as two-dimensional (lying in a plane, 'flat') or three-dimensional ('solid')." How does building shapes out of clay help students distinguish between two-dimensional and three-dimensional shapes?

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

© 0 min

Unit 7, Section B Checkpoint

Standards Alignments

Addressing K.G

Student-facing Task Statement

Lesson observations

Student Responses

- Distinguish between flat and solid shapes.
- Use their own language to describe and compare attributes of solid shapes.
- Build solid shapes from components.

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

Warm-up © 10 min

Which One Doesn't Belong: Flat Shapes

Standards Alignments

Addressing K.G.B.4

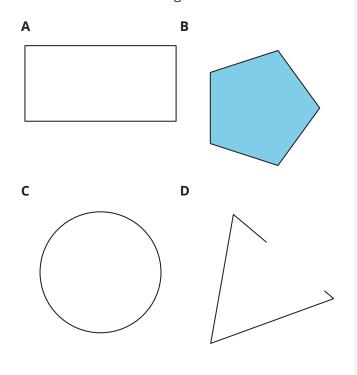
This warm-up prompts students to carefully analyze and compare attributes of flat shapes. In making comparisons, students have a reason to use language precisely (MP6). The activity also enables the teacher to hear the terminologies students know and how they talk about attributes of shapes.

Instructional Routines

Which One Doesn't Belong?

Student-facing Task Statement

Which one doesn't belong?



Student Responses

Sample responses:

- A doesn't belong because it's the only one that is straight on the bottom.
- B doesn't belong because it's the only one that is colored in.
- C doesn't belong because it's the only one that doesn't have straight sides.
- D doesn't belong because it's the only one that doesn't close all the way.

Launch

- Groups of 2
- Display 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
- Share and record responses.

Synthesis

 "Let's find at least one reason why each one doesn't belong."

Unit 7 Lesson 7

Activity 1 © 15 min

Create Shapes with Clay

Standards Alignments

Addressing K.G.A.3, K.G.B.5

The purpose of this activity is for students to build and compare flat and solid shapes. Students are not expected to build precise shapes. Using clay to build the shapes helps students feel the difference between flat and solid shapes. The terms "flat" and "solid" are introduced in the activity synthesis. Students may benefit from getting to hold and see the solid shapes up close as they build them.

Materials to Gather

Clay

Required Preparation

- Each student needs a piece of clay.
- Gather a cone and cylinder to display.

Student Responses

Students create shapes out of clay.

Launch

- Groups of 2
- Give each student a piece of clay.
- "Use your clay to make a shape that you know."
- 1 minute: independent work time
- "Share your shape with your partner. How are they the same? How are they different?" (The shapes are different. I made a circle and my partner made a triangle.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Activity

- Display a cylinder.
- "Make this shape with your clay."
- 2 minutes: independent work time
- Display a cone.
- "Make this shape with your clay."
- 2 minutes: independent work time
- "Describe the shape that you made to your partner. What does it look like?" (It looks like an ice cream cone. It's tall. It has a point on the bottom.)
- 30 seconds: quiet think time
- 2 minutes: partner discussion
- Share responses.

Synthesis

- Display a group of flat shapes and a group of solid shapes that students created.
- "What is different about the shapes that we made first and the rest of the shapes that we made?" (The shapes that we made first are all flat. The other shapes stick up.)
- "The first shapes that we made were flat shapes, like circles and rectangles. Then we built some other shapes. What can we call these shapes?" (solid shapes, big shapes)
- "These shapes are solid shapes."
- "Use your clay to make a flat shape."
- "Use your clay to make a solid shape."

Activity 2

(10 min

Sort Flat and Solid Shapes

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Standards Alignments

Addressing K.G.A.3, K.MD.B.3

The purpose of this activity is for students to identify shapes as flat and solid as they sort shapes into groups. A sorting task gives students opportunities to analyze the structure of the shapes and identify common properties and characteristics (MP7). If the sorting mat provided in the student workbook is too small for students to sort the shapes, consider giving students two pieces of construction paper, or ask students to put the solid shapes on one side of the table and the flat shapes on the other side.

Access for English Learners

MLR8 Discussion Supports. Invite each partner to identify each shape aloud: Flat shape or solid shape. Encourage students to challenge each other when they disagree. *Advances: Conversing*

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a strategy for how they will sort the shapes.

Supports accessibility for: Conceptual Processing, Organization

Materials to Gather

Geoblocks, Solid shapes

Materials to Copy

Flat Shapes Cards K (groups of 2)

Required Preparation

• Each group of 2 needs a set of solid shapes and a set of cards.

Student-facing Task Statement

Launch

- Groups of 2
- Give each group of students a set of solid shapes and a set of flat shapes cards.

Activity

- "Work with your partner to sort the shapes into two groups. Write a number to show how many shapes are in each group."
- 3 minutes: partner work time

- "Pair up with another group. Show them how you sorted your shapes. Did you sort all of the shapes in the same way?"
- 3 minutes: small-group work time
- "What could you call each group of shapes to show why you put those shapes together?"
- Monitor for a group that sorts by flat shapes and solid shapes.

Synthesis

- Invite previously selected students to share the way they sorted the shapes into flat shapes and solid shapes.
- "This group has flat shapes. This group has solid shapes."
- Display a square.
- "Should this shape go with the flat shapes or the solid shapes? Why?" (It is a flat shape. If we put it on our desk, it doesn't stick up.)
- Display a cube.
- "Should this shape go with the flat shapes or the solid shapes? Why?" (It is a solid shape. It sticks up and takes up space.)

Student Responses

Students sort shapes into groups.

Advancing Student Thinking

If students identify a pyramid as flat because "it looks like a triangle," consider asking:

- "What is the same about all of the shapes in this group?"
- Display a pyramid and a triangle next to each other and ask "What do you notice about these shapes? What is different about them?"

Unit 7 Lesson 7

Activity 3 © 20 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Counting Collections
- Match Mine
- Shake and Spill

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:
 - Counting Collections, Stage 1
 - Match Mine, Stage 1
 - Shake and Spill, Stages 1-4

Student-facing Task Statement

Choose a center.

Counting Collections



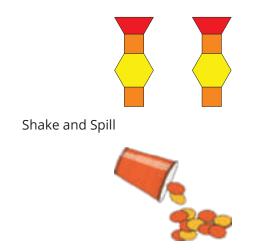
Match Mine

Launch

- "Today we 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

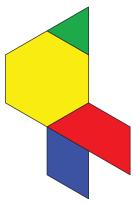


their choice.

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

Synthesis

• Display 4 pattern blocks arranged as pictured.



 "What would you tell your partner about where to put the red trapezoid pattern block?" (It's under the yellow hexagon and over the blue rhombus.)

Lesson Synthesis

③ 5 min

Display a circle and a cylinder.

"How are these shapes the same? How are they different?" (They both have parts that are round. One shape is a circle and the other shape has a circle on the top. One is flat and one is solid.)

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Lesson 8: Compare Weight

Standards Alignments

Addressing K.MD.A, K.MD.A.1, K.MD.A.2

Building Towards K.MD.A.1, K.MD.A.2

Teacher-facing Learning Goals

Compare the weights of two objects.

Student-facing Learning Goals

• Let's figure out which object is heavier and which is lighter.

Lesson Purpose

The purpose of this lesson is to introduce students to the concept and language used to compare weight.

In a previous unit, students described and compared the lengths of objects. In a previous lesson, students explored the difference between flat and solid shapes. In this lesson, students learn about an attribute of solid shapes: weight. Students are introduced to the terms heavy, light, heavier, and lighter to describe and compare the weights of objects (MP6). Students initially describe and compare the weights of objects when the comparison is visually obvious and brainstorm ideas for how to compare the weights of objects when they cannot tell by looking which object is heavier. Then students work in groups to compare the weights of objects and record the comparison. Since students will not be using a scale or a balance, objects to compare should have significantly different weights so that students can feel which object is heavier by holding the objects. In the lesson synthesis, students discuss a comparison of one heavier object and multiple light objects.

Access for:

Students with Disabilities

Representation (Activity 2)

3 English Learners

MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

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	5 min
Cool-down	5 min

Teacher Reflection Question

In tomorrow's lesson, students work together in groups to compare the capacities of cups and containers. What did you learn about how students worked in groups today that can help you prepare for tomorrow's lesson?

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

S min

Compare Weights of Books and Pencils

Standards Alignments

Addressing K.MD.A

Student-facing Task Statement

Which is lighter: your workbook or your pencil?

Circle the one that is lighter.



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Student Responses

Students circle the image of the pencil.

Warm-up © 10 min

Notice and Wonder: Seesaw

Standards Alignments

Building Towards K.MD.A.1, K.MD.A.2

The purpose of this warm-up is to elicit ideas that students have about weight, which will be useful when students compare the weights of objects in a later activity. Consider reading aloud and discussing books that explore weight, such as:

- Mighty Maddie by Stuart J. Murphy
- Just A Little Bit by Ann Tompert
- The Seesaw by Judith Koppens
- Balancing Act by Ellen Stoll Walsh

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 is a seesaw.
- The parent is at the bottom and the kid is at the top.
- They are at the playground.

Students may wonder:

- How is the kid going to get down?
- Can the parent get to the top?
- Who is heavier?

• Share and record responses.

Synthesis

- "What are some things that you think are heavy?"
- Share and record responses.
- "What are some things that you think are light?"
- Share and record responses.

Activity 1 © 15 min

Compare Weights of Boxes and Bags

Standards Alignments

Addressing K.MD.A.1, K.MD.A.2

The purpose of this activity is for students to describe and compare the weights of objects. In the first example, students work with two identical boxes and consider the difference in weight between a box with books in it and one without. In the second example, students discuss ways to compare the weights of objects when it's not clear which object is heavier. Students may only describe the weight of one of the objects when comparing. ("The book is heavier.") The teacher shares the complete comparison statement. ("The book is heavier than the pencil.") To develop their conceptual understanding of weight as an attribute, it is important that all students are able to feel the bags in the second example in this activity. The bags can either be passed around so that each student can feel them, or multiple bags can be made.

Required Preparation

- Prepare 2 boxes, one filled with books, labeled "1," and one empty box, labeled "2."
- Prepare 2 closed bags, one containing a few crayons, labeled "1," and one filled with rocks or other heavy objects, labeled "2."

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Launch

- Groups of 2
- Display box 1 and box 2.
- "What do you notice? What do you wonder?"
 (Students may notice: The empty box is light.
 There is a lot of stuff in the box, so that box must be heavier. Students may wonder: Is the empty box lighter than the box that is filled with books? Is the box with books heavier than the empty box?)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- If no student compares the weights of the boxes, ask: "Which box do you think is heavier? Why do you think that?"
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- "How could we figure out which box is heavier?" (We could pick them up and feel which one is heavier.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- Choose one student to hold each box and share with the class.
- "We use 'heavier than' and 'lighter than' when we compare the weights of objects. Tell your partner about the boxes using 'lighter than.""
- 30 seconds: quiet think time
- 30 seconds: partner discussion
- Monitor for students who say the complete comparison statement. If students only say "The empty box is lighter," prompt by asking "Lighter than what?"
- Share responses

Activity

- Display bags 1 and 2.
- "Here are 2 bags, but we can't see what is inside. Which bag is heavier?"
- 30 seconds: quiet think time
- Share responses.
- "How could we figure out which bag is heavier?" (We could pick them up and feel which one is heavier.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- Pass the bags around so that each student can hold both bags to compare the weights.

Synthesis

- "Now that we have all felt the bags, which bag is heavier?"
- Share responses.
- "Tell your partner about the bags using 'lighter than."
- Share responses.
- "We can hold objects in our hands to figure out which object feels heavier and which feels lighter."

Activity 2 © 10 min

Compare Weights

Standards Alignments

Addressing K.MD.A.1, K.MD.A.2

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The purpose of this activity is for students to practice comparing the weights of two objects by feel and using comparison language. Any classroom objects can be used for this activity such as books, writing utensils, baskets, office supplies, and art supplies. Students can be more comfortable using "heavy" and "heavier" than "light" or "lighter," so vary questions between "Which object is heavier?" and "Which object is lighter?" In the activity synthesis, students practice using comparison language as they share one pair of objects that they compared. While not required, students can write the name of each object or record their comparison with a sentence, such as "The apple is heavier than the book".

Access for English Learners

MLR8 Discussion Supports. Synthesis: At the appropriate time, give students 2–3 minutes to make sure that everyone in their group can explain which object is lighter and which object is heavier. Invite groups to rehearse what they will say when they share with the whole class. *Advances: Speaking, Conversing, Representing*

Access for Students with Disabilities

Representation: Develop Language and Symbols. Synthesis: Make connections between the objects students share and the relationship it has to being lighter or heavier. Invite students to make a connection between the complete comparison statements and the objects they circled. Supports accessibility for: Conceptual Processing

Required Preparation

• Gather assorted classroom objects for students to compare.

Student-facing Task Statement Choose 2 objects. Figure out which object is heavier and which is lighter. Draw a picture of each object. Circle the object that is heavier.

Launch

- Groups of 2–4
- Give each group of students access to objects to compare.

Activity

- "Choose 2 objects with your partner. Figure out and tell your group which object is heavier and which object is lighter. Draw a picture of each object on your recording sheet and circle the object that was heavier."
- 5 minutes: partner work time

Student Responses

Sample response: Students compare and draw a book and a pencil. Students circle the book.

 Monitor for students who use a complete comparison statement such as "The ball is lighter than the book."

Synthesis

 Invite each group to share one set of objects that they compared. Invite students to chorally repeat the complete comparison statements in unison 1–2 times.

Activity 3 © 15 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Counting Collections
- Match Mine
- Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - Counting Collections, Stage 1
 - Match Mine, Stage 1
 - Shake and Spill, Stages 1-4

Unit 7 Lesson 8

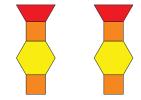
Student-facing Task Statement

Choose a center.

Counting Collections



Match Mine



Shake and Spill



Launch

- "Today we 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

 "We have learned a few different ways to play Shake and Spill. Which way do you like to play Shake and Spill? Why?"

Lesson Synthesis

S min

Display one chair and five pencils.

"Han says that the pencils are heavier than the chair because there are 5 pencils and only 1 chair. What do you think about?" (There are more pencils, but they are small and light. The chair is probably heavier even though there is only one chair.)

"What can Han do to help him figure out if the chair or the pencils are heavier?" (He can hold the chair and the pencils and see which one feels heavier.)

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

Response to Student Thinking

Students circle the student workbook.

Next Day Support

• Launch the next lesson by highlighting key vocabulary from previous lessons.

Lesson 9: Compare Capacity

Standards Alignments

Addressing K.CC.A.1, K.MD.A, K.MD.A.1, K.MD.A.2

Teacher-facing Learning Goals

Student-facing Learning Goals

Compare the capacities of two objects.

 Let's compare objects to see which one holds more.

Lesson Purpose

The purpose of this lesson is to introduce students to the concept and language used to compare capacity.

In previous units and lessons, students compared the lengths and weights of objects. Students learned that three-dimensional shapes are solid. In this lesson, students learn about an attribute of solid shapes: capacity. Initially students compare two containers where it is visually obvious which one holds more. After this initial discussion, the cups or containers that students are comparing should have capacities that are not obviously different. For example, a shorter, wider cup and a taller, thinner cup.

Although this lesson requires some new materials and preparation, it is extremely helpful for students to have the experience of working with liquids in different shaped containers to build a conceptual understanding of comparing capacity.

Access for:

Students with Disabilities

3 English Learners

Engagement (Activity 2)

MLR8 (Activity 1)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- Containers of different sizes: Activity 1, Activity 2
- Materials from previous centers: Activity 3
- Sticky notes: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	15 min
Activity 3	20 min
Lesson Synthesis	5 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 7, Section B Checkpoint

Standards Alignments

Addressing K.MD.A

Student-facing Task Statement

Lesson observations

Student Responses

• Use comparison language to describe the weight or capacity of objects.

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

Warm-up © 10 min

Choral Count: Count by 10

Standards Alignments

Addressing K.CC.A.1

The purpose of this warm-up is for students to count by 10 to 100. Although students see the written

sequence of numbers, they are not required to identify numbers beyond 20 until Grade 1.

Instructional Routines

Choral Count

Student Responses

10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Launch

- Display numbers from 1 to 100.
- "Let's count to 100."
- Point to the numbers as students count to 100.

Activity

- "Now let's count to 100 by 10."
- Demonstrate counting by 10 to 100, pointing to each number as you count.
- "Let's all count to 100 by 10."
- Have students repeat the count multiple times.

Synthesis

 "Take turns counting to 100 by 10 with your partner."

Activity 1 © 10 min

Capacity of Cups

Standards Alignments

Addressing K.MD.A.1, K.MD.A.2

The purpose of this activity is for students to think about and compare the capacities of containers. Students start by comparing two containers where it is visually obvious which one

holds more. They use comparison language such as "The pitcher holds more than the cup." Then, students consider containers that have capacities that are not easy to compare visually and they brainstorm ways to compare the capacities of the containers. Students may need to see the water poured between the two containers multiple times before they determine and can explain which container has more capacity. As students make predictions and then discuss and justify their comparisons, they share a mathematical claim and the thinking behind it (MP3).

Access for English Learners

MLR8 Discussion Supports. Use multimodal examples to clarify what it means for a container to hold liquid. Use verbal descriptions along with gestures or drawings to show the meaning of the word hold in this context.

Advances: Listening, Representing

Materials to Gather

Containers of different sizes, Sticky notes

Required Preparation

- Gather a larger pitcher and a small cup to display during the launch.
- Gather 2 cups with capacities that are not easy to compare visually, such as a tall stemmed glass and a short, wide cup for the activity.

Student Responses

Sample responses:

- We can put water or lemonade in each cup and see which one holds more.
- We can drink the lemonade from each cup and see which one takes longer to drink.
- We can pour the water from one cup into the other cup and see if it fits.

Launch

- Groups of 2
- Display a pitcher and a small cup.
- "Diego's class needs a lot of lemonade for a lemonade sale they are going to have at school. Which container do you think they should use to hold the lemonade? Why do you think that?" (The pitcher holds more lemonade because it is bigger. The cup is small.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- "We think that the pitcher will hold more lemonade."

Activity

- Display 2 cups and give each student a sticky note.
- "Which of these cups do you think would hold more lemonade? Put your sticky note by the cup that you think would hold more lemonade."
- 3 minutes: independent work time
- "People had different answers about which cup would hold more lemonade. What can we do to figure out which cup can hold more lemonade?"
- 1 minute: quiet think time
- 1 minute: partner discussion
- Share and record responses.
- Demonstrate filling one of the cups with water and then slowly pour that water into the other cup.
- "I filled up the red cup and poured the same water into the blue cup, but the blue cup overflowed. Which cup do you think can hold more lemonade?"
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- "The red cup can hold more lemonade than the blue cup."

Synthesis

 "We can use water to help us figure out which cup can hold more lemonade."

Activity 2

① 15 min

Which Cup Can Hold More Water?

Standards Alignments

Addressing K.MD.A.1, K.MD.A.2

The purpose of this task is for students to compare the capacities of two containers where the comparison is not easy to see visually. Students experiment with filling containers with water to determine which has a greater capacity. Each group of students needs two cups or containers that they can compare the capacities of, a container of water, and a plastic or foil tray to catch any water that spills. Students can also use small paper cups to fill up the containers. This activity can also be completed outside or at a water table. There are multiple ways that students can compare the capacities of the containers, including by pouring water from one container to the other and seeing if the water overflows or if there is room left over or by counting how many small cups it takes to fill up each container (MP7).

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Invite students to generate a list of shared expectations for group work. Ask students to share explicit examples of what those expectations would look like in this activity.

Supports accessibility for: Social-Emotional Functioning

Materials to Gather

Containers of different sizes

Required Preparation

- Each group of 4 students needs 2 cups or containers that are not easy to compare the capacity visually, such as a short, wide container and a tall, thin container.
- Each group of 4 students needs 1 small paper cup, a container filled with water, and a plastic or foil tray.

Student Responses

Sample responses:

- I filled the blue cup with water and then poured the water into the red cup. There's still room left in the red cup, so the red cup holds more water than the blue cup.
- I filled the red cup with water and then poured the water into the blue cup. The blue cup overflowed—all of the water

Launch

- Groups of 4
- Give each group of students two cups or containers, a container of water, a small paper cup, and a plastic or foil tray.
- "Elena likes to drink lots of water after dance class. She's trying to figure out which cup to use. Which cup holds more water? Work with your group to figure it out."

- couldn't fit—so the red cup holds more water than the blue cup.
- I used the small paper cups to fill up the red cup and the blue cup. I put 6 cups of water into the red cup and 4 cups of water into the blue cup, so the red cup holds more water than the blue cup.

Activity

- 8 minutes: small-group work time
- Monitor for students who compare the capacities in different ways.

Synthesis

- Invite each group of students to share how they compared the capacities of the cups with the class. As each group shares, ask:
 - "Which cup holds more water?"
 - "Which cup holds less water?"
 - "Tell your partner about the cups using the word 'less."

Activity 3 © 20 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Counting Collections
- Match Mine
- Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - Counting Collections, Stage 1
 - Match Mine, Stage 1

Shake and Spill, Stages 1-4

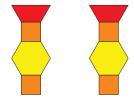
Student-facing Task Statement

Choose a center.

Counting Collections



Match Mine



Shake and Spill



Launch

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

Synthesis

 "Where can you find any materials that you need to play Match Mine? Where do the materials go when you are finished playing?"

Lesson Synthesis

S min

"Today we figured out which container would hold more water."

Display a variety of containers used throughout the lesson.

"Tell your partner about the shapes of the containers." (The glass looks like a cylinder. The cup has a circle on top.)

Lesson 10: Identify and Describe Solid Shapes

Standards Alignments

Addressing K.G, K.G.A.2, K.G.B.4, K.G.B.5, K.OA.A.5

Teacher-facing Learning Goals

 Use their own language to describe solid shapes.

Student-facing Learning Goals

Let's make and describe solid shapes.

Lesson Purpose

The purpose of this lesson is for students to identify and describe solid shapes.

In previous lessons, students learned the difference between flat and solid shapes and compared the weight or capacity of objects. In this lesson, students are introduced to the names for cubes, cones, spheres, and cylinders as they build shapes out of clay. While the mathematical names are introduced in this lesson, students are not expected to use the names of solid shapes. Students continue to use their own language to describe the attributes and parts of solid shapes.

Access for:

Students with Disabilities

Action and Expression (Activity 2)

3 English Learners

MLR8 (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Clay: Activity 1
- Geoblocks: Activity 1, Activity 2
- Materials from a previous lesson: Activity 1
- Materials from previous centers: Activity 3
- Solid shapes: Activity 1, Activity 2

Materials to Copy

 Examples of Flat Shapes Display Cards (groups of 35): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	5 min

Teacher Reflection Question

As students worked with their partners today, whose ideas were heard, valued, and accepted? How can you adjust the group structure tomorrow to ensure each student's ideas are part of the collective learning?

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

© 0 min

Unit 7, Section B Checkpoint

Standards Alignments

Addressing K.G

Student-facing Task Statement

Lesson observations

Student Responses

- Distinguish between flat and solid shapes.
- Use their own language to describe and compare attributes of solid shapes.
- Build solid shapes from components.

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

Warm-up © 10 min

Number Talk: Add within 5

Standards Alignments

Addressing K.OA.A.5

The purpose of this Number Talk is to elicit strategies and understandings students have for adding within 5. In this activity, students have an opportunity to look for and make use of structure (MP7) because all of the expressions are 5 and the first addend is increased by 1 in each expression. Students may represent each addend on their fingers.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression.

- 2+3
- 3+2
- 4+1
- 5+0

Student Responses

- 5: I put up 2 fingers and 3 fingers and counted them.
- 5: I know that 3 and 2 is 5.
- 5: 4 and 1 more is 5.
- 5: If you have 5 and you add 0 more, it is still 5.

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

• "What is the same about all of the expressions?" (They are all 5.)

Activity 1 © 20 min

Make Solid Shapes

Standards Alignments

Addressing K.G.A.2, K.G.B.5

The purpose of this activity is to introduce students to the names of solid shapes as they build shapes with clay. Students create both flat and solid shapes based on objects or images. In the

activity synthesis, students use their own language to describe the shapes they created.

Materials to Gather

Clay, Geoblocks, Materials from a previous lesson, Solid shapes

Materials to Copy

Examples of Flat Shapes Display Cards (groups of 35)

Required Preparation

- Each group of 2 students needs solid shapes and a set of Flat Shapes Cards from a previous lesson.
- Gather a ball, a can, a number cube, and an ice cream cone and cut out 1 set of Examples of Flat Shapes cards to display.

Student Responses

Answers vary.

Launch

- Groups of 2
- Give each group of students the cube, cylinder, cone, and sphere solid shapes and a set of flat shapes cards. Give each student a piece of clay.
- Display a ball for all to see.
- "Pick up the shape that looks like the same shape as this ball." (Students pick up a sphere.)
- 30 seconds: independent work time
- "Use clay to make a shape that looks like this ball."
- 2 minutes: independent work time
- "Is this shape flat or solid? Why do you think that?" (It is solid. It sticks up. You can hold it. It looks a little bit like a circle, but it's not flat.)

Activity

- "Share your shape with your partner. How are they the same? How are they different?" (They are both round and solid. Mine is bigger.)
- "This shape is called a **sphere**. What are

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- some things you know that are shaped like a sphere?" (balls, marbles, ornaments, oranges, light bulbs, egg yolks)
- Repeat the steps with the examples of flat shapes and a can to introduce cylinder, a number cube to introduce cube, and an ice cream cone to introduce cone.
- As you display each object or card, ask:

0	"Pick ι	ip the s	shape	that	looks	like
	this	."				

- "Use clay to make a shape that looks like this
- "Is this shape flat or solid?"
- "What are some other things you know that are shaped like a _____?"

Synthesis

- Display a student-created cone.
- "Tell your partner all about this shape." (It looks like an ice cream cone. It is a cone. It has a circle on the top and a point at the bottom. The sides are round, not flat. It is a solid shape.)
- "In the next activity, you are going to practice describing solid shapes to your partner."

Activity 2 © 10 min

Introduce Geoblocks, Describe and Find

Standards Alignments

Addressing K.G.B.4

The purpose of this activity is for students to learn stage 3 of the Geoblocks center. Students

describe solid shapes using their own language. Students provide clues so that their partner can identify the shape out of a set of 4-6 solid shapes. While students may correctly name the solid shapes, it is not expected in this lesson. Students may describe the shapes in many ways. Monitor for students who:

- reference a familiar object: "This shape looks like a ball."
- describe attributes or parts of the shape, such as point and circle for a cone.
- use the name of the shape: "This shape is a cube."
- use positional words: "This shape is next to the one that looks like a box."

The purpose of the activity synthesis is to highlight the language students use to describe shapes (MP6).

Access for English Learners

MLR8 Discussion Supports. Synthesis: For each response that is shared, invite students to turn to a partner and restate what they heard, using descriptions and gestures. *Advances: Listening, Speaking*

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan how they will describe the shape to their partner.

Supports accessibility for: Organization, Conceptual Processing

Materials to Gather

Geoblocks, Solid shapes

Required Preparation

• Each group of 2 students needs 4–6 different solid shapes.

Launch

- Groups of 2
- Give each group of students 4–6 different solid shapes.
- "We are going to learn a new way to do the Geoblocks center. It is called Geoblocks, Describe and Find."
- "Put the solid shapes in the middle, between you and your partner."

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30 seconds: partner work time

Activity

- "Think of a shape but don't tell your partner.
 Describe one of the shapes to your partner.
 Your partner's job is to guess which shape you are describing. Once your partner figures out which shape you are describing, switch roles."
- 7 minutes: partner work time
- Monitor for students who describe the shapes in the ways described in the activity narrative.

Synthesis

- Invite previously identified students to share.
- "Which clues did your partner give that were helpful to you?" (My partner said their shape was tall and had a circle on the top and bottom.)

Advancing Student Thinking

If students guess a shape that is not being described, consider asking:

- "What clues did your partner give you?"
- If needed, consider prompting students to eliminate some of the shapes. For example, ask "Your partner said that the shape has a round part. Are there any shapes that do not have round parts?"

Activity 3 © 15 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Geoblocks
- Counting Collections
- Match Mine
- Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - Geoblocks, Stages 1-3
 - Counting Collections, Stage 1
 - Match Mine, Stage 1
 - Shake and Spill, Stages 1-4

Student-facing Task Statement

Choose a center.

Geoblocks Counting Collections Match Mine Shake and Spill

Launch

- "Today we 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.
- 12 minutes: center work time

Synthesis

 "Let's practice using clues to find a solid shape in the lesson synthesis."

Lesson Synthesis

© 5 min

Display 4 solid shapes, such as a cylinder, cube, cone, and pyramid.

Describe a shape to students. For example, "I am thinking of a shape that looks the same on all of the sides. It is a solid shape. It has squares on the sides. Which shape am I thinking of?" (Students point to the cube or say "cube.")

Lesson 11: Compare and Sort Solid Shapes

Standards Alignments

Addressing K.G, K.G.A.1, K.G.A.2, K.G.B.4, K.MD.B.3

Teacher-facing Learning Goals

• Use their own language to describe and compare solid shapes.

Student-facing Learning Goals

 Let's figure out how solid shapes are alike and different.

Lesson Purpose

The purpose of this lesson is for students to compare solid shapes.

In previous lessons, students identified, described, and built solid shapes. In this lesson, students describe and compare the attributes of solid shapes. When describing and comparing shapes, students are not required to know or use language such as "faces", "edges", or "vertices". Students may use their own language to describe these attributes, such as "sides," "points," or "corners." If it is unclear what part of a shape a student is referring to, consider asking them to point to which part of the shape they are describing.

Access for:

Students with Disabilities

• Representation (Activity 1)

3 English Learners

MLR8 (Activity 2)

Instructional Routines

What Do You Know About _____? (Warm-up)

Materials to Gather

Bags: Activity 3

• Geoblocks: Activity 1, Activity 3

• Materials from a previous activity: Activity 2

Materials from previous centers: Activity 3

Solid shapes: Activity 1, Activity 3

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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

In grade 1, students distinguish between defining and non-defining attributes of shapes. How does the work of this lesson prepare students for the work of grade 1?

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

© 0 min

Unit 7, Section B Checkpoint

Standards Alignments

Addressing K.G

Student-facing Task Statement

Lesson observations

Student Responses

Use their own language to describe and compare attributes of solid shapes.

----- Begin Lesson ---

Warm-up © 10 min

What Do You Know About Cylinders?

Standards Alignments

Addressing K.G.B.4

The purpose of this What Do You Know About Cylinders is to invite students to share what they know

about cylinders.

Instructional Routines

What Do You Know About ____?

Required Preparation

• Gather a cylinder to display.

Student Responses

Sample responses:

- It is a solid shape.
- It looks like a can.
- It is a cylinder.
- It has circles on the top and bottom.
- It has a round side.
- It can roll.

Launch

- Display a cylinder.
- "What do you know about this shape?"
- 1 minute: quiet think time

Activity

Record responses.

Synthesis

 "One thing that we know about a cylinder is that it can roll. Can you think of other solid shapes that can roll?" (A sphere or a ball.)

Activity 1

Compare Solid Shapes

① 10 min



Standards Alignments

Addressing K.G.B.4

The purpose of this activity is for students to compare solid shapes. In making comparisons, students have a reason to use language precisely (MP6). Students choose 2 solid shapes and describe and record at least one way they are the same and one way they are different. Students may draw pictures or use letters or words to record. Some characteristics students may use to compare the shapes include:

- size
- orientation ("the point is facing down")
- flat and curved surfaces
- square, triangular, or circular faces
- corners
- "points" (pyramids and cones)

The purpose of the activity synthesis is to share attributes students used to compare shapes. Consider making a list of different ways students compared shapes and remind them of some of these attributes during the next activity.

Access for Students with Disabilities

Representation: Access for Perception. Synthesis: Use gestures while students describe the differences between the two cylinders to emphasize that one is shorter and one is thinner. Supports accessibility for: Visual-Spatial Processing

Materials to Gather

Geoblocks, Solid shapes

Required Preparation

- Each group of 2 students needs at least 6-8 solid shapes.
- Gather a cone, a cube, and two different cylinders to display in the activity synthesis.

Student-facing Task Statement

alike	different

Student Responses

Sample responses:

 Prism and pyramid: They both have flat sides or faces. This shape (pyramid) has a sharp point.

Launch

- Groups of 2
- Give each group of students at least 6-8 solid shapes.
- "Choose two shapes. Tell your partner at least one way the shapes are alike, or the same, and one way that they are different. Show your thinking with drawings or words."
- 1 minute: quiet think time
- 2 minutes: partner discussion

 Cube and rectangular prism: They both have shapes with 4 sides. This shape (cube) has all squares on it. This shape (rectangular prism) is taller.

Activity

- "Take turns choosing two shapes and telling your partner at least one way that the shapes are alike and one way that the shapes are different. Show your thinking with drawings or words."
- 5 minutes: partner work time
- Monitor for students who compare shapes based on their size, corners, points, and number of flat faces.

Synthesis

- Display a cone and a cube.
- "What is alike, or the same, about these shapes? What is different?" (Both have a flat side. The cube has many points and this shape only has one point.)
- Display 2 different cylinders, one that is thin and tall and one that is wide and short.
- "Describe these shapes to your partner."
 (They both have circles on them. They are both solid shapes. One is shorter. One is thinner.)
- "These shapes are both cylinders."

Activity 2

(15 min

Sort Solid Shapes

Standards Alignments

Addressing K.G.B.4, K.MD.B.3

The purpose of this activity is for students to sort solid shapes. Different ways students may sort include:

- shapes that roll and shapes that do not roll.
- shapes with a sharp point and shapes that do not have a sharp point.
- shapes with a circular face and shapes that do not have a circular face.
- shapes with a square face and shapes that do not have a square face.
- shapes with all flat faces and shapes that have some faces that are not flat.

If the sorting mat provided in the student workbook is too small for students to sort the shapes, consider giving students two pieces of construction paper, or ask students to keep the two groups separate in their work area.

Access for English Learners

MLR8 Discussion Supports. Students should take turns sorting the shapes and explaining their reasoning to their partner. Display the following sentence frames for all to see: "I noticed ____, so I . . ." Encourage students to challenge each other when they disagree.

Advances: Listening; Speaking

Materials to Gather

Materials from a previous activity

Required Preparation

• Each group of 2 students needs at least 6-8 solid shapes from the previous activity.

Student-facing Task Statement	Launch
	• Groups of 2
	 Give each group of students a collection of at least 6-8 solid shapes.
	 "Work with your partner to sort the shapes into two groups. Write a number to show how many shapes are in each group."
	1 minute: quiet think time
	3 minutes: partner work time
	Activity
	 "Think of a name for each group of shapes that describes why you put those shapes

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together. You can write the name above

each group."

- 1 minute: independent work time
- "Pair up with another group. Explain to them which shapes you put together and why."
- 4 minutes: small-group work time
- "Sort your shapes in a different way."
- 1 minute: quiet think time
- 3 minutes: partner work time
- Monitor for students who sort the shapes based on attributes, as described in the activity narrative.

Synthesis

- Invite selected students to share how they sorted their shapes.
- As students share, ask questions such as:
 - "What is the same about all of the shapes in this group?" (They all have squares on them.)
 - "Why do you think they named this group _____."
 - "Why did you put this pyramid in this group instead of the other group?" (Because it has a square on the bottom.)

Student Responses

Students sort solid shapes into groups.

Activity 3 © 15 min

Introduce Geoblocks, Feel and Guess

Standards Alignments

Addressing K.G.A.1, K.G.A.2, K.G.B.4

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The purpose of this activity is for students to learn stage 4 of the Geoblocks center. Students feel the shape without looking at it and guess the shape. Students may name the same ("It's a cube.") or describe an object that looks like the shape ("This is shaped like a box.").

After they participate in the center, students choose from any stage of previously introduced centers.

- Counting Collections
- Match Mine
- Shake and Spill

Materials to Gather

Bags, Geoblocks, Materials from previous centers, Solid shapes

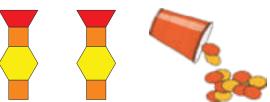
Required Preparation

- Place 4-6 different solid shapes into a bag that is not see-through for each group of 2 students.
- Gather materials from:
 - Counting Collections, Stage 1
 - Match Mine, Stage 1
 - Shake and Spill, Stages 1-4

Student-facing Task Statement

Choose a center.

Geoblocks Counting Collections Match Mine Shake and Spill



Launch

- Groups of 2
- Give each group of students a bag containing 4-6 solid shapes.
- "We are going to learn a new way to do the Geoblocks center. It is called Geoblocks, Feel and Guess."
- "One partner will reach into the bag and feel one shape without looking at it. Feel the shape until you can guess which shape it is. Once you guess, remove the shape and show it to your partner. If your partner agrees, put the shape back into the bag, and switch roles."

Activity

- 5 minutes: center work time
- "Now you can choose another center. You can also continue playing Geoblocks."
- Display the center choices in the student book.
- Invite students to work at the center of their choice.
- 8 minutes: center work time

Synthesis

 "Which do you enjoy more: figuring out which shape it is by feeling it or by listening to clues from your partner?"

Lesson Synthesis

() 10 min

Display 2 sets of shapes, a set of shapes with all flat sides (prisms and pyramids) and a set of shapes with at least one curved side.

"I sorted these shapes into 2 groups. Why do you think that I put all of these shapes together and all of these shapes together?" (All of those shapes have flat sides. All of the other shapes are round in some parts.)

Display a half sphere.

"Which category would you put this shape in? Why?" (I would put it with the shapes with a round side. It has one flat side and the rest is round or curved.)

Display a pyramid.

"Which category would you put this shape in? Why?" (I would put it with the shapes with flat sides. Each side of the pyramid is flat.)

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Lesson 12: Build Solid Shapes

Standards Alignments

Addressing K.G, K.G.B.4, K.G.B.5

Teacher-facing Learning Goals

• Build solid shapes.

Student-facing Learning Goals

Let's create solid shapes.

Lesson Purpose

The purpose of this lesson is for students to build solid shapes from components.

In previous lessons, students created solid shapes out of clay and described, compared, and sorted shapes. In the warm-up, students notice similarities between rectangular prisms and develop their own name for rectangular prisms. Box will be used as the example in this lesson. Students create solid shapes from connecting cubes and sticks and clay.

Access for:

Students with Disabilities

• Representation (Activity 1)

3 English Learners

• MLR7 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

Clay: Activity 2

Connecting cubes: Activity 1

• Geoblocks: Activity 2

• Materials from previous centers: Activity 3

Solid shapes: Activity 2

• Sticks: Activity 2

Lesson Timeline

Warm-up 10 min

Teacher Reflection Question

What did students notice about rectangular

Activity 1	10 min
Activity 2	15 min
Activity 3	20 min
Lesson Synthesis	5 min

prisms in the warm-up? What new things did students notice about rectangular prisms as they built them in the first activity?

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

🕓 0 min

Unit 7, Section B Checkpoint

Standards Alignments

Addressing K.G

Student-facing Task Statement

Lesson observations

Student Responses

- Use their own language to describe and compare attributes of solid shapes.
- Build solid shapes from components.

Warm-up © 10 min

Notice and Wonder: Sorted Shapes

Standards Alignments

Addressing K.G.B.4

The purpose of this warm-up is to elicit the idea that rectangular prisms share certain attributes, which will be useful when students build rectangular prisms from components in a later activity. While students may notice and wonder many things about these shapes, the attributes of rectangular prisms

are the important discussion points. The purpose of the synthesis is for students to develop their own name for rectangular prisms.

Instructional Routines

Notice and Wonder

Required Preparation

• Gather and sort solid shapes in 2 groups to display: 4 rectangular prisms, including a cube, in one group and 4 other solid shapes in another group.

Student Responses

Students may notice:

- They are all solid shapes.
- The shapes in one group look like boxes.
- There are no shapes with round sides in that group.

Students may wonder:

- Why did Andre put the cube in that group?
- What are those shapes called?

Launch

- Groups of 2
- Display shapes sorted into two groups: 4
 rectangular prisms, including a cube, in one
 group and 4 other solid shapes in another
 group. Provide time for students to look at
 the shapes closely.
- "Andre sorted these shapes into two groups.
 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

- Point to the group of rectangular prisms.
- "What is the same about all of the shapes in this group?" (They all have flat sides. They have rectangles and squares. They are all solid.)
- "What is a name that we can call these shapes?" (Boxes, blocks)

Activity 1 © 10 min

Make Boxes

Standards Alignments

Addressing K.G.B.4, K.G.B.5

The purpose of this activity is for students to identify important features of rectangular prisms and then put together connecting cubes to make rectangular prisms.

The purpose of the activity synthesis is to share and compare different rectangular prisms that students built. Students should keep the rectangular prism that they build in the activity synthesis for the next activity.

(iii) Access for Students with Disabilities

Representation: Develop Language and Symbols. Synthesis: Make connections between the rectangular prism and the shape that is not a rectangular prism. For example, hold them side by side so students can visually see the differences.

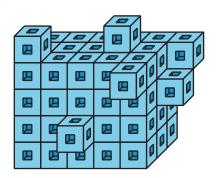
Supports accessibility for: Conceptual Processing

Materials to Gather

Connecting cubes

Required Preparation

- Gather a variety of rectangular prisms, including cubes, to display.
- Use connecting cubes to create a shape that is not a rectangular prism during the activity synthesis, similar to this image:



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Student Responses

Students build rectangular prisms with connecting cubes.

Launch

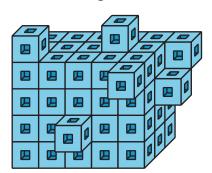
- Groups of 2
- Give students connecting cubes.
- Display a variety of rectangular prisms, including a cube.

Activity

- "We can call these shapes boxes. Now use the connecting cubes to make your own box."
- 3 minutes: independent work time
- Monitor for students who build rectangular prisms of different sizes.

Synthesis

- Invite two students to share their rectangular prisms.
- "How are these two shapes the same? How are they different?" (They both look like boxes and they both have flat sides. They are solid shapes. One of them is taller.)
- Display a student created rectangular prism and a shape made out of connecting cubes that is not a rectangular prism, similar to this image:



- "How are these two shapes the same? How are they different?" (One has a cube missing and a cube sticking out. One is a box and one is not.)
- "Use the connecting cubes to make a different box."

Activity 2 © 15 min

Introduce Build Shapes, Match the Solid Shape

Standards Alignments

Addressing K.G.B.5

The purpose of this activity is for students to learn stage 3 of the Build Shapes center. Students build solid shapes from components. Students work in partners to build a rectangular prism using sticks and clay. Students use the rectangular prism they built in the previous activity synthesis to help them. Then students choose another solid shape to make out of sticks and clay. In this activity, a gallery walk is added to the center so that students can reflect on the shapes made by others.

Students can also be given access to other materials to build shapes during this center, such as paper, cardboard, tape, and connecting cubes.

Access for English Learners

MLR7 Compare and Connect. During the Gallery Walk, invite partners to compare and contrast the different shapes. This gives students an opportunity to produce comparative language.

Advances: Representing, Conversing

Materials to Gather

Clay, Geoblocks, Solid shapes, Sticks

Required Preparation

• Each group of 2 students needs a variety of solid shapes and at least 12 sticks in 2 different lengths.

Student Responses

Answers vary.

Launch

- Groups of 2
- Give each group of 2 students access to solid shapes, clay, and sticks in a variety of sizes.
- "We are going to learn a new way to do the Build Shapes center. It is called Build

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- Shapes, Match the Solid Shape."
- "Use the sticks and clay to build a box like the one you built out of connecting cubes."
- 3 minutes: partner work time

Activity

- "Choose a solid shape. Work with your partner to make the solid shape using sticks and clay."
- 5 minutes: partner work time
- "Walk around and look at the shapes that your classmates made."
- 5 minutes: gallery walk

Synthesis

- Display a sphere and a cylinder.
- "Did you see anybody who made a sphere or a cylinder?" (No, the sticks are straight, so you can't make shapes with round sides like cylinders or spheres.)

Activity 3 © 20 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Build Shapes
- Geoblocks
- Counting Collections
- Match Mine
- Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

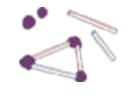
- Gather materials from:
 - Build Shapes, Stages 1-3
 - Geoblocks, Stages 1-4
 - Counting Collections, Stage 1
 - Match Mine, Stage 1
 - Shake and Spill, Stages 1-4

Student-facing Task Statement

Choose a center.

Build Shapes

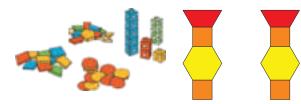
Geoblocks





Counting Collections

Match Mine



Shake and Spill



Launch

- "Today we are going to choose from centers we have already learned. You can also continue playing Build Shapes"
- 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
- "Choose what you would like to do next."
- 8 minutes: center work time

Synthesis

 "When we work in centers, it is important to work together. Did you see another group that worked together well during centers today? What did you notice them doing?"

Lesson Synthesis

© 5 min

"Today we worked with our partners to build solid shapes. What was one thing that your partner did to help you when you were building shapes?"

"What is one thing that you can do to be a good partner next time?"

Lesson 13: Describe Solid Shapes Around Us

Standards Alignments

Addressing K.G, K.G.A.1, K.G.B.5

Teacher-facing Learning Goals

 Recognize, name, describe, and build solid shapes in the environment.

Student-facing Learning Goals

Let's find solid shapes.

Lesson Purpose

The purpose of this lesson is for students to notice and describe the locations of solid shapes in their environment.

Throughout this lesson, students have opportunities to make connections between objects in their environment and solid shapes, such as considering that a block and a tissue box both look like the same solid shape.

Access for:

Students with Disabilities

• Engagement (Activity 1)

English Learners

MLR8 (Activity 1)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

• Clay: Activity 2

Geoblocks: Activity 1, Activity 2

Materials from previous centers: Activity 3

Solid shapes: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min

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

Activity 2	10 min
Activity 3	20 min
Lesson Synthesis	5 min

confusion together as a community of learners?

 $\textbf{Cool-down} \hspace{0.2cm} \text{(to be completed at the end of the lesson)}$

© 0 min

Unit 7, Section B Checkpoint

Standards Alignments

Addressing K.G

Student-facing Task Statement

Lesson observations

Student Responses

- Use positional words to describe the locations of solid shapes.
- Build solid shapes from components.

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

Warm-up © 10 min

Notice and Wonder: At the Market

Standards Alignments

Addressing K.G.A.1

The purpose of this warm-up is to elicit the idea that positional words and names of shapes can be helpful in describing objects, which will be useful when students find and describe solid shapes in their environment in a later activity.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice? What do you wonder?



Student Responses

Students may notice:

- It looks like a market or a grocery store.
- There are a lot of different vegetables.
- The cabbage looks like a ball or a sphere.

Students may wonder:

- Are there any fruits other than apples?
- What is the green vegetable called?

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 kinds of shapes do you see in the picture?"
- "Do you see any objects that look like a sphere? Do you see any objects that look like a cylinder?"
- As students share, prompt them to use positional words to describe the location of the object by asking "Where do you see that?"

Activity 1 © 15 min

Solid Shape Walk

Standards Alignments

Addressing K.G.A.1

The purpose of this activity is for students to identify and describe solid shapes in their environment (MP4, MP6). The shape walk can occur in many locations, such as a classroom, school, gym, playground, or library. Additional objects may need to be added to the environment to ensure that there are examples of a variety of solid shapes. Students may identify objects that are not exact examples of solid shapes. If this happens, consider acknowledging similarities between the shapes ("This shape has a point like a cone, but it is not a cone."). Students use their own language to describe the solid shapes and are not required to use names of solid shapes. As students identify solid shapes, encourage students to describe the location of the object using positional words such as above, below, beside, and next to.

Access for English Learners

MLR8 Discussion Supports. Use gestures to emphasize the meaning of positional words. For example, gesturing to demonstrate the word below.

Advances: Listening, Representing

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Invite students to choose one or two solid shapes they will look for on their shape walk.

Supports accessibility for: Organization, Memory

Materials to Gather

Geoblocks, Solid shapes

Student-facing Task Statement



Launch

- Groups of 2
- Give students access to solid shapes.
- "Choose 2 solid shapes."
- 30 seconds: independent work time

Activity

- "We are going to go for a walk. Your job is to look for objects that look like your solid shapes. Tell your partner about the shapes you find."
- 10 minutes: shape walk
- Monitor for students who use positional words to describe the location of shapes.



Student Responses

Answers vary.

- "Tell your partner about your favorite object. Where did you see it?"
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Synthesis

- Invite students who used positional words to describe the location of shapes to share.
- "___ saw a round light bulb below the lamp shade. It looked like a sphere."
- "____ saw a book on the bookshelf. It looked like a box."
- Display image:



- "Which shape does this clock look like?" (Students say "cylinder" or hold up a cylinder.)
- Display image:



- "Which shape does this party hat look like?" (Students say "cone" or pick up a cone.)
- "In the next activity, we are going to use

clay to make shapes that show the objects we saw."

Activity 2 © 10 min

Make Shapes in the World

Standards Alignments

Addressing K.G.B.5

The purpose of this activity is for students to model objects in the environment using clay (MP4). Students choose a solid shape to represent the object and then make the shape out of clay.

Materials to Gather

Clay, Geoblocks, Solid shapes

Student Responses

Answers vary.

Launch

- Groups of 2
- Give each student a piece of clay. Give students access to solid shapes.

Activity

- "I saw a basketball on our walk. If I made it out of clay, which shape would it look like?" (Students point to the sphere or describe it.)
- 30 seconds: quiet think time
- Share responses.
- "Pick one object that you saw on our shape walk. Choose the shape that the object is."
- 30 seconds: independent work time
- "Use your clay to make the shape."

• 2 minutes: independent work time

Synthesis

- Invite selected students to share the shapes they built.
- As each student shares, ask the class to point to the solid shape that most looks like the object they built.
- "Did anyone else see an object that looked like this shape?"

Activity 3 © 20 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Build Shapes
- Geoblocks
- Counting Collections
- Match Mine
- Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - o Build Shapes, Stages 1-3
 - Geoblocks, Stages 1-4
 - Counting Collections, Stage 1

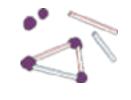
- Match Mine, Stage 1
- Shake and Spill, Stages 1-4

Student-facing Task Statement

Choose a center.

Build Shapes

Geoblocks





Counting Collections

Match Mine







Shake and Spill



Launch

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

Synthesis

- Display a cylinder.
- "Do you think you could build a rocket ship with this cylinder? Which other shapes would you need?"

Lesson Synthesis

3 5 min

"Today we looked around us for objects that look like solid shapes."

"What are some solid shapes that you can find at home?" (Sample responses: pieces of fruit like oranges or grapes, balls, boxes, cans)

Share and record responses.

Display a cube.

"What are some objects that look like cubes that you can find at home?" (Sample responses: tissue box, number cube, box)

Share and record responses.

Lesson 14: Compose with Solid Shapes

Standards Alignments

Addressing K.G, K.G.A.1, K.G.B.6

Building Towards K.OA.A.5

Teacher-facing Learning Goals

• Compose solid shapes to build new shapes.

Student-facing Learning Goals

Let's build with solid shapes.

Lesson Purpose

The purpose of this lesson is for students to compose solid shapes to build new shapes.

In previous lessons, students described and built solid shapes from components. They used positional words to describe the relative location of shapes. In this lesson, students use solid shapes to compose shapes. Students may notice attributes of solid shapes in the context of building such as that a sphere is round and rolls. The focus is on listening to the language that students use to describe the shapes that they put together and their relative location (MP6).

Access for:

Students with Disabilities

S English Learners

• Engagement (Activity 2)

MLR2 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

Folders: Activity 3

Geoblocks: Activity 1, Activity 2, Activity 3

Materials from previous centers: Activity 3

Solid shapes: Activity 1, Activity 2, Activity 3

Lesson Timeline

Warm-up 10 min

Teacher Reflection Question

How did students use positional words to describe what they built during this lesson?

Activity 1	10 min
Activity 2	10 min
Activity 3	25 min
Lesson Synthesis	5 min

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

① 0 min

Unit 7, Section B Checkpoint

Standards Alignments

Addressing K.G

Student-facing Task Statement

Lesson observations

Student Responses

- Use positional words to describe the locations of shapes.
- Put solid shapes together to compose new shapes.

Warm-up © 10 min

Number Talk: Subtract 1 and 2

Standards Alignments

Building Towards K.OA.A.5

The purpose of this Number Talk is to elicit strategies and understandings students have for adding within 5. These understandings help students develop fluency with adding and subtracting within 5.

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Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression.

- **●** 3 **–** 1
- 3 − 2
- 4 − 2
- 5 − 1

Student Responses

- 2: I know that if there are 3 and you take away 1, there are 2.
- 1: 3 1 was 2. If you take away 1 more, there will be 1.
- 2: I put up 4 fingers and put down 2 of them. There were 2 left.
- 4: 4 is one less than 5.

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 do you like to subtract 2?"

Activity 1 © 10 min

Build with Solid Shapes

Standards Alignments

Addressing K.G.A.1, K.G.B.6

The purpose of this activity is for students to explore building with solid shapes. Students use the solid shapes that they have been working with in previous lessons. Students may use the shapes to create representations of objects, such as building a house, or they may experiment with putting shapes together. The purpose of the activity synthesis is to highlight using names of shapes and positional words to describe what they built (MP6).

Access for English Learners

MLR2 Collect and Display. Circulate, listen for and collect the positional words students use as they describe shapes. On a visible display, record words and phrases such as: "The cube is below the cylinder", underlining the positional word with a drawing. Invite students to borrow language from the display as needed, and update it throughout the lesson.

Advances: Conversing, Reading

Materials to Gather

Geoblocks, Solid shapes

Student Responses

Sample responses:

- I made a house. These blocks are the walls and the ones on top are the roof.
- I put a cube on top of a cylinder.
- I tried to put something on top of the sphere but it would not stay.

Launch

- Groups of 2
- Give students access to solid shapes and geoblocks.
- "Use the solid shapes to build anything you want."

Activity

- 5 minutes: independent work time
- "Describe what you built to your partner."
- 30 seconds: quiet think time
- 2 minutes: partner discussion
- Monitor for students who use the names of shapes and positional language to describe what they built.

Synthesis

- Invite selected students to share what they built and the shapes that they used.
- As students share, ask questions involving positional words, such as:
 - "Where is the cylinder in _____'s creation?"
 - "Which shape is on top of the cube?"

Unit 7 Lesson 14 149

Activity 2 © 10 min

Build My Shape

Standards Alignments

Addressing K.G.A.1, K.G.B.6

The purpose of this activity is for students to build with solid shapes. Students practice using names of solid shapes and positional words as they try to recreate a building (MP6). Initially, students recreate what their partner built. Then students work together to build.

Access for Students with Disabilities

Engagement: Internalize Self-Regulation. Provide students an opportunity to self-assess and reflect on the shapes they used to build their partner's design. For example, I used the cone to create the pointy part of the design.

Supports accessibility for: Memory, Organization

Materials to Gather

Geoblocks, Solid shapes

Required Preparation

Create a building with 6-8 solid shapes to display and have a way to hide it from students' view.

Student Responses

Answers vary.

Launch

- Groups of 2
- Give students access to solid shapes and geoblocks.
- "Choose who will build first. The first partner will use the solid shapes to build something. Watch as your partner builds."
- 2 minutes: independent work time
- "Use the solid shapes to build the same thing as your partner."
- 1 minute: independent work time

 Repeat the steps above, with students switching roles.

Activity

- "This time I am going to show you something that I built, and you and your partner will work together to try to make the same thing. But you will only get to look at what I built for one minute, so look closely and try to remember where the shapes go."
- Display the building, built with 6–8 solid shapes. Allow students to look at the building closely. Then cover the building.
- "Work with your partner to build the same thing that I built."
- 3 minutes: partner work time

Synthesis

- Invite one partner from each group up to look at the building again.
- "Now that you have seen what I built again, tell your partner where to put the shapes to revise what you built."
- 2 minutes: partner work time
- Invite students to share how they changed their building using positional words and names of shapes.

Activity 3 © 25 min

Introduce Match Mine, Solid Shapes

Standards Alignments

Addressing K.G

Unit 7 Lesson 14 151

The purpose of this activity is for students to learn stage 2 of the Match Mine center. Students use positional words as they build with solid shapes and describe what they have built. Folders or other objects can be used to keep students' work hidden.

After they participate in the center, students choose from any stage of previously introduced centers.

- Build Shapes
- Geoblocks
- Counting Collections
- Shake and Spill

Materials to Gather

Folders, Geoblocks, Materials from previous centers, Solid shapes

Required Preparation

- Gather materials from:
 - Build Shapes, Stages 1-3
 - Geoblocks, Stages 1-4
 - Counting Collections, Stage 1
 - Shake and Spill, Stages 1-4

Student-facing Task Statement

Choose a center.

Build Shapes



Counting Collections

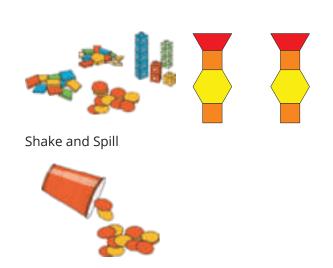




Match Mine

Launch

- Groups of 2
- Give each group of students a folder and at least 8 solid shapes or geoblocks, with at least 2 of each type of shape.
- "We are going to learn a new way to play the Match Mine center. It is called Match Mine, Solid Shapes."
- "One partner will choose 4 solid shapes and build something behind the folder. Then they will describe what they built and their partner will try to create the same thing without looking at it. When you're both finished, remove the folder and



- compare. Was your partner able to build the exact same thing? What information would have helped them?"
- If needed, play one round as a class.
- "Take turns playing Match Mine with your partner."

Activity

- 7 minutes: center work time
- "Now you can choose another center. You can also continue playing Match Mine."
- Display the center choices in the student book.
- Invite students to work at the center of their choice.
- 10 minutes: center work time
- If time, invite students to choose another center.

Synthesis

 "Which clues did your partner give you that were most helpful? Why were they helpful?"

Lesson Synthesis

(5) 5 min

"Today we built with solid shapes."

Display a cylinder.

"What is the name of this shape?" (cylinder)

"Think of something that you could use a cylinder to build." (A castle, a tower, a microphone, legs)

Unit 7 Lesson 14 153

Lesson 15: Build and Count with Solid Shapes

Standards Alignments

Addressing K.CC.B.5, K.G, K.G.B.4, K.G.B.6

Building Towards K.NBT.A.1

Teacher-facing Learning Goals

- Compose solid shapes to build new shapes.
- Count to answer "how many" questions about groups of up to 20 objects.

Student-facing Learning Goals

• Let's build with and count solid shapes.

Lesson Purpose

The purpose of this lesson is for students to build with solid shapes to reinforce counting and comparing concepts.

In previous lessons, students built with solid shapes and described what they built. In this lesson, students create towers, which requires them to consider the attributes of shapes as they determine which shapes stack easily.

Access for:

Students with Disabilities

• Engagement (Activity 2)

3 English Learners

MLR8 (Activity 1)

Instructional Routines

Estimation Exploration (Warm-up)

Materials to Gather

10-frames: Warm-up

Connecting cubes: Warm-up

Geoblocks: Activity 1, Activity 2

Materials from previous centers: Activity 3

Solid shapes: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	15 min
Activity 3	20 min
Lesson Synthesis	5 min

Teacher Reflection Question

How are students working together during centers? Are all students getting the opportunity to participate in the mathematics?

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

© 0 min

Unit 7, Section B Checkpoint

Standards Alignments

Addressing K.G

Student-facing Task Statement

Lesson observations

Student Responses

- Put solid shapes together to compose new shapes.
- Use positional words to describe the locations of solid shapes.

Warm-up © 10 min

Estimation Exploration: How Many Cubes?

Standards Alignments

Building Towards K.NBT.A.1

The purpose of an Estimation Exploration is to practice the skill of estimating a reasonable answer based on experience and known information. Encourage students to make an estimate without counting each cube.

Instructional Routines

Estimation Exploration

Materials to Gather

10-frames, Connecting cubes

Required Preparation

• Make a tower with 16 connecting cubes.

Student-facing Task Statement

1. Record an estimate that is:

too low	about right	too high

2. Record an estimate that is:

too low	about right	too high

Student Responses

1. Sample responses:

a. Too low: 2-7

b. About right: 12-20

c. Too high: 5-100

2. Sample responses

a. Too low: 10-14

b. About right: 15-17

c. Too high: 20-50

Launch

- Groups of 2
- Display a tower of 16 connecting cubes.
- "What is an estimate that's too high?" "Too low?" "About right?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.
- "Let's look at the same connecting cubes in a different way."
- Break apart the tower, fill a 10-frame with connecting cubes, and put the rest of the cubes in a pile.
- "Based on this, do you want to revise, or change, your estimates?"
- 1 minute: quiet think time
- 1 minute: partner discussion
- Record responses.

Synthesis

"Let's look at our revised estimates. Why were

these estimates more accurate the second time?" (We could see there were 10 cubes and some more.)

"There are 16 connecting cubes."

Activity 1 © 10 min

A Tall Tower

Standards Alignments

Addressing K.CC.B.5, K.G.B.6

The purpose of this activity is to build towers with solid shapes and count how many solid shapes are in the tower. Students will need to think strategically about which shapes to use and their properties. For stacking shapes, it is important to have flat faces. Students may notice that spheres can not be used to build towers. Pyramids and cones can be used as the top of the tower, but nothing can be stacked on top of them. The purpose of the activity synthesis is to discuss the attributes of shapes and why students chose the shapes they did to build their towers.

Access for English Learners

MLR8 Discussion Supports. During group work, invite students to take turns sharing their responses. Ask students to restate what they heard using precise mathematical language and their own words. Original speakers can agree or clarify for their partner.

Advances: Listening, Speaking

Materials to Gather

Geoblocks, Solid shapes

Student-facing Task Statement

How many solid shapes did you use in your tower?

Launch

- Groups of 2
- Give students access to solid shapes and geoblocks.
- "Use solid shapes to make the tallest tower you can."
- 3 minutes: independent work time

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Activity

- "Compare with your partner. How are your towers the same? How are they different?" (Sample response: We both used a lot of cubes. My tower has a point on top. My partner's tower is taller.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- "Write a number to show how many solid shapes you used in your tower."
- 2 minutes: independent work time
- "Did you or your partner use more solid shapes in their tower?"
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Synthesis

- Invite students to share their towers.
- "What shapes did ____ use?" (There are some cubes and a pyramid on top.)
- "How many shapes did ___ use?" (4)
- "Did you use a sphere in your tower? Why?"
 (No. I could not put anything on top of it because it's round. It rolled away because it's round.)
- "Did you use a cone in your tower?" (It worked at the very top but I could not put anything on top of the cone.)

Activity 2 © 15 min

What Can You Make With These Shapes?

Standards Alignments

Addressing K.CC.B.5, K.G.B.4, K.G.B.6

The purpose of this activity is for students to build with a given number of solid shapes. Students practice counting out objects as they count out specific numbers of solid shapes. After they build with the shapes, students determine how many shapes they used altogether, which may require rearranging what they built in order to count accurately. Students describe and compare what they built with their partner.

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Invite students to generate a list of shared expectations for group work. Ask students to share explicit examples of what those expectations would look like in this activity.

Supports accessibility for: Social-Emotional Functioning

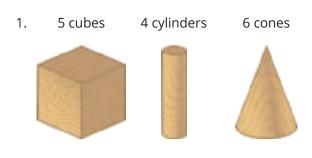
Materials to Gather

Geoblocks, Solid shapes

Required Preparation

• Each group of 4 students needs 6 cubes, 6 cylinders, and 6 cones.

Student-facing Task Statement



How many shapes did you use all together?

2. 3 cones 4 cubes 5 cylinders

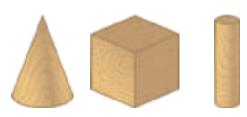
Launch

- Groups of 2
- Give students access to solid shapes.
- "Work with your partner and use 5 cubes, 4 cylinders, and 6 cones to build. Make sure that what you build has at least one tower."
- 3 minutes: independent work time

Activity

- "How many shapes did you use? Write a number to show how many shapes you used."
- 2 minutes: independent work time
- "Pair up with another group and describe what you made. How are they the same?

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How many shapes did you use all together?

Student Responses

- 1. 15 shapes
- 2. 12 shapes

How are they different?"

- 30 seconds: quiet think time
- 2 minutes: partner discussion
- Monitor for students who use comparison language such as more or taller when they compare their creations.
- Repeat the steps for the second problem.

Synthesis

 Invite previously identified groups of students to share what they built. (I made a house with cubes and pyramids that has 2 towers. My towers are taller than their towers.)

Advancing Student Thinking

If students count the solid shapes while they are in a tower and count some of the shapes more than one time or do not count all of the shapes, consider asking:

- "How did you figure out how many solid shapes were in the tower?"
- "How could you rearrange the solid shapes to make them easier to count?"

Activity 3 © 20 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Build Shapes
- Geoblocks
- Counting Collections
- Match Mine

Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - Build Shapes, Stages 1-3
 - Geoblocks, Stages 1-4
 - Counting Collections, Stage 1
 - Match Mine, Stages 1 and 2
 - Shake and Spill, Stages 1-4

Student-facing Task Statement

Choose a center.



Geoblocks





Counting Collections

Match Mine







Shake and Spill



Launch

- "Today we are going to choose from centers we have already learned."
- Display the center choices in the student
- "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
- "Choose what you would like to do next."
- 8 minutes: center work time

Synthesis

 "Choose one of the centers that you played today. Tell your partner how you would explain the rules of the center to a new student. What tips would you give them?"

Lesson Synthesis

© 5 min

"Today we built with and counted solid shapes."

Display a tower created out of a variety of solid shapes.

"What 'how many' questions can you ask about this tower?" (How many shapes are there? How many cubes are there? How many cones are there?)

"These are ideas of questions that you can ask when you build with shapes in centers."

Lesson 16: Represent the Classroom with Shapes

Standards Alignments

Addressing K.CC.A.1, K.G, K.G.B.5

Teacher-facing Learning Goals

Compose solid shapes to represent the environment.

Student-facing Learning Goals

 Let's use shapes to make a model of our classroom.

Lesson Purpose

The purpose of this lesson is for students to use solid shapes to make a model of the classroom.

In previous lessons, students described and built with solid shapes. Students used positional words to describe the location of shapes and have identified solid shapes in the environment. After creating their model of the classroom with a classmate, students take a gallery walk to look at different models and practice describing their model. Then they return to their model and make changes or additions based on what they have observed in the other classroom models. The purpose of the lesson synthesis is for students to reflect on how they have improved throughout the unit.

This lesson has a Student Section Summary.

Access for:

③ Students with Disabilities

Action and Expression (Activity 1)

S English Learners

• MLR8 (Activity 2)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

Geoblocks: Activity 1, Activity 2

Materials from previous centers: Activity 3

Solid shapes: Activity 1, Activity 2

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Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	5 min

Teacher Reflection Question

As you finish up this unit, reflect on the norms and activities that have supported each student in learning math. List ways you have seen each student grow as a young mathematician throughout this work. List ways you have seen yourself grow as a teacher. What will you continue to do and what will you improve upon in the next unit?

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

(0 min

Unit 7, Section B Checkpoint

Standards Alignments

Addressing K.G

Student-facing Task Statement

Lesson observations

Student Responses

- Put solid shapes together to compose new shapes.
- Use positional words to describe the locations of solid shapes.

Warm-up © 10 min

Choral Count: Count by 10

Standards Alignments

Addressing K.CC.A.1

The purpose of this warm-up is for students to count by 10 to 100. Although students see the written sequence of numbers, they are not required to identify numbers beyond 20 until Grade 1.

Instructional Routines

Choral Count

Student Responses

10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Launch

- Display numbers from 1 to 100.
- "Let's count to 100."
- Point to the numbers as students count to 100.

Activity

- "Now let's count to 100 by 10."
- Demonstrate counting by 10 to 100, pointing to each number as you count.
- "Let's all count to 100 by 10."
- Have students repeat the count multiple times

Synthesis

• "Take turns counting to 100 by 10 with your partner."

Activity 1

(15 min

Make a Model of the Classroom

Standards Alignments

Addressing K.G.B.5

The purpose of this activity is to make a model of the classroom using solid shapes (MP4). To do

this, students need to:

- choose important objects to represent.
- decide which shapes to use to represent the objects.
- place the shapes appropriately to represent where things are in the classroom.

The purpose of the activity synthesis is to share some of the objects students chose to represent and how they represented them.

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan their model of the classroom. Ask students to think about what objects they are going to represent in their model and what solid shapes they will use to represent those objects.

Supports accessibility for: Organization, Conceptual Processing

Materials to Gather

Geoblocks, Solid shapes

Student Responses

Answers vary.

Launch

- Groups of 2
- Give students access to solid shapes and geoblocks.
- "You are going to use solid shapes to make a model of the classroom."
- "Think about which objects you want to represent and how you will represent them."

Activity

- 10 minutes: independent work time
- As they work, allow students to walk around the classroom so that they can look at objects they want to represent.

Synthesis

Invite selected students to share their classroom models.

- "Which objects in the classroom did ____ represent?"
- "What shape did ____ use to represent a desk?"

Advancing Student Thinking

If students are unsure which objects in the classroom to represent, consider asking:

- "If you had to tell someone about our classroom who has never been here before, what would you tell them?"
- Choose one object and ask "How could you represent _____ with the solid shapes?"

Activity 2 © 15 min

Add to or Change the Classroom Model

Standards Alignments

Addressing K.G.B.5

The purpose of this activity is for students to revise their classroom models. Students go on a gallery walk to see the models of their classmates. Describing their model to their peers and seeing other models helps students develop ideas for how to add to or change their model (MP3).

3 Access for English Learners

MLR8 Discussion Supports. During the Gallery Walk, invite students to ask "Can you tell me about your model? What do the shapes represent?" This gives all students an opportunity to produce language.

Advances: Conversing

Materials to Gather

Geoblocks, Solid shapes

Student Responses

Answers vary.

Launch

 "When a classmate comes to your model, tell them all about your model and what the shapes represent."

Activity

- Invite half of the class to stand by their models while the other half walks around.
- 5 minutes: gallery walk
- Switch groups.
- 5 minutes: gallery walk
- "Were there any things that you saw in your classmates' models that gave you an idea for things you want to add to or change about your model?"
- 1 minute: quiet think time
- 2 minutes: partner discussion
- Share responses.
- "Work on your model."
- 4 minutes: independent work time
- Monitor for changes students make to their models including changing the shapes that they use, changing the relative position of the shapes, or putting in more shapes to represent additional features.

Synthesis

 Invite selected students to share changes that they made to their models and why they made them.

Activity 3

① 15 min

Centers: Choice Time

The purpose of this activity is for students to choose from activities that offer practice with number and shape concepts.

Students choose from any stage of previously introduced centers.

- Build Shapes
- Geoblocks
- Counting Collections
- Match Mine
- Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

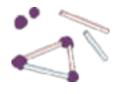
- Gather materials from:
 - Build Shapes, Stages 1-3
 - Geoblocks, Stages 1-4
 - Counting Collections, Stage 1
 - Match Mine, Stages 1 and 2
 - Shake and Spill, Stages 1-4

Student-facing Task Statement

Choose a center.

Build Shapes







Counting Collections

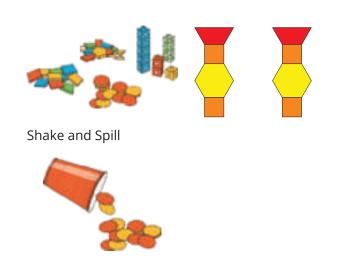
Match Mine

Launch

- "Today we 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

 "Which centers do you want to keep working with in our next unit? Are there other centers that you'd like to try?"

Lesson Synthesis

5 min

"In this unit, we counted, compared, and built with flat and solid shapes."

Display a variety of materials from this unit, such as pattern blocks, flat shape cards, solid shapes, geoblocks, and real-world examples of solid shapes.

"What is something that you got even better at in this unit? What did you do to help yourself get better at it?"

Student Section Summary

In this section, we described, compared, and created solid shapes.

cube cone cone





cylinder sphere





We found examples of solid shapes in our world.









We used solid shapes to build things and described what we made.





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Family Support Materials

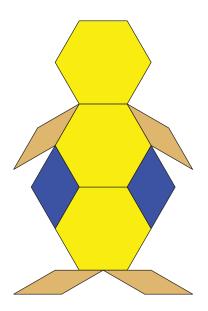
Family Support Materials

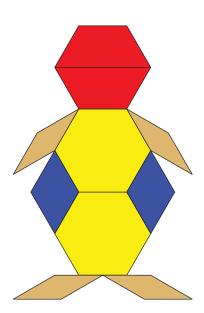
Solid Shapes All Around Us

In this unit, students identify, describe, compare, and create three-dimensional shapes. Students revisit counting, addition, and subtraction while working with familiar two-dimensional shapes. With students, we refer to two-dimensional shapes as flat shapes and three-dimensional shapes as solid shapes.

Section A: Compose and Count with Flat Shapes

In this section, students revisit number concepts while working with pattern blocks. Students practice counting, comparing, and writing numbers as well as solving story problems as they fill in more difficult pattern block puzzles, which can be completed in more than one way, for example:





Section B: Describe, Compare, and Create Solid Shapes

In this section, students are introduced to solid shapes as they distinguish between flat and solid shapes. Students identify examples of solid shapes in their environment and work with geoblocks, including cones, cubes, cylinders, spheres, pyramids, and prisms.



While students are introduced to the formal names of solid shapes, students use their own language to describe and compare these shapes. For example, students may say "ball" to refer to a sphere and may compare the "points" of a pyramid and the "curves" of a cone. Students use a variety of materials to create solid shapes and eventually use solid shapes to build larger creations, such as a tower.

Try it at home!

Near the end of the unit, ask your student to go on a scavenger hunt to find solid shapes around the house.

Questions that may be helpful as they work:

- Can you find a cone, a cube, a sphere, and a cylinder?
- Can you find something else that has the same shape as this can?
- What is the same about these two shapes that you found? What is different about them?
- Can you find something that you can use to create a cone?

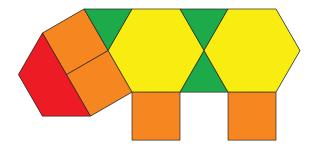
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Unit Assessments

End-of-Unit Assessment

Solid Shapes All Around Us: End-of-Unit Assessment

1.



a. How many squares are in the puzzle?

b. How many triangles are in the puzzle?

c. How many pattern blocks are in the puzzle?

2. a. Circle the object that is heavier.



b. Circle the object that is lighter.





3. Consider the ball and box your teacher has displayed.

How are the shapes the same? How are they different?

Show your thinking with drawings or words.

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Assessment Answer Keys

Check Your Readiness A and B End-of-Unit Assessment

Assessment Answer Keys Assessment: Section A Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Count and compare numbers, and solve story problems involving shapes.
- Compose shapes from smaller shapes.
 - o Count all to determine the total.
 - Write a number to represent a quantity up to 20.
 - Accurately retell a story problem in their own words.
 - Use objects, drawings, or equations to represent a story problem.
 - Explain connections between objects, drawings, story problems, and equations.

Assessment: Section B Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Describe and compare three-dimensional shapes.
- Compare weight and capacity of objects.
- Compose shapes from smaller shapes.
 - Distinguish between flat and solid shapes.
 - Use their own language to describe and compare attributes of solid shapes.
 - Use comparison language to describe the weight or capacity of objects.
 - Build solid shapes from components.
 - Put solid shapes together to compose new shapes.
 - Use positional words to describe the locations of solid shapes.

2 Kindergarten

Assessment: End-of-Unit Assessment

Teacher Instructions

The last question requires a ball and a box to be displayed for students to compare. Many of the geometry standards related to three-dimensional shapes cannot be assessed in written questions. To assess students on those standards, please see the Section B checklist.

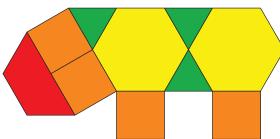
Problem 1

Standards Alignments

Addressing K.CC.B.5, K.G.A.2

Narrative

Students identify and count different pattern block shapes in a puzzle. They also count all of the pattern blocks in the puzzle. Since they cannot move the pieces, they will need to count carefully in order to count each shape once and only once.



a.	How many squares are in the puzzle?		
b.	How many triangles are in the puzzle?		
c.	How many pattern blocks are in the puz	zzle?	

Solution

a. 4

b. 3

c. 10

Problem 2

Standards Alignments

Addressing K.MD.A.2

Narrative

Students compare the weight of objects that are presented with pictures. The objects are common so that students will identify them readily and be able to compare. If a student misses either of these items, it could be that they have misunderstood the question or that they need more practice using the words heavier and lighter. The best way to assess their understanding is to present them with physical objects, like those pictured, and ask them which is heavier or lighter. With the actual objects, they can experiment to compare them.

a. Circle the object that is heavier.





b. Circle the object that is lighter.





4 Kindergarten

Solution

- a. apple
- b. paper clip

Problem 3

Standards Alignments

Addressing K.G.B.4

Narrative

For this problem, display a ball and a box for all students to see.

Students will describe how the two 3-dimensional shapes are the same and how they are different. While students may use the words sphere or box to describe the objects, this is not required. Students should use the language that makes sense to them to describe how the objects are the same and how they are different.

Consider the ball and box your teacher has displayed.

How are the shapes the same? How are they different?

Show your thinking with drawings or words.

Solution

Sample response: They both take up space, they're not flat. The ball is round. The box has corners and has flat surfaces.

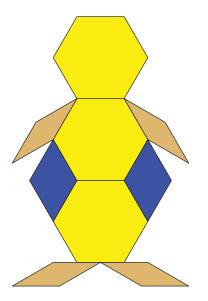
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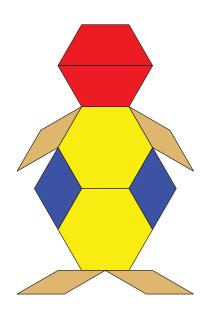
Lesson Cool Downs

Lesson 2: More or Fewer Pattern Blocks

Cool Down: Penguin Compare

Circle the shape that is filled with more pattern blocks.



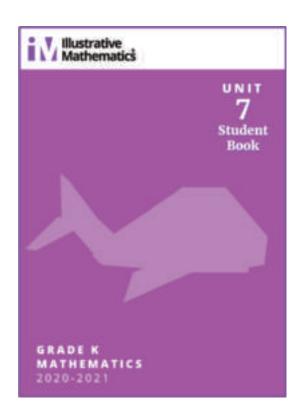


Lesson 8: Compare Weight

Cool Down: Compare Weights of Books and Pencils

Which is lighter: your workbook or your pencil?

Circle the one that is lighter.



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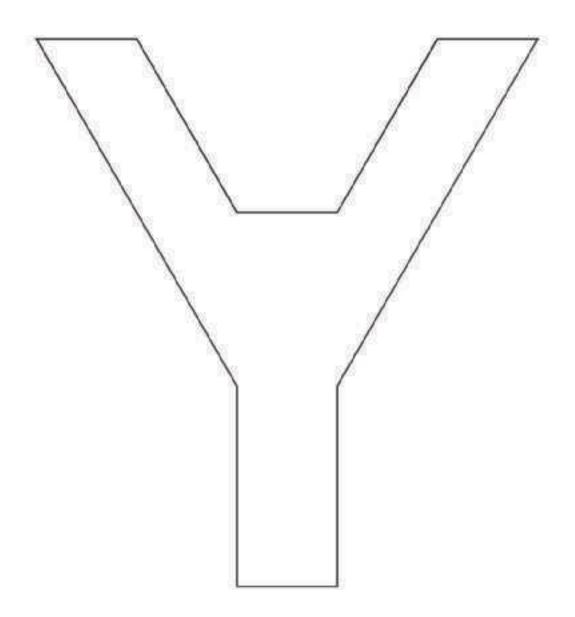
Instructional Masters

Instructional Masters for Solid Shapes All Around Us

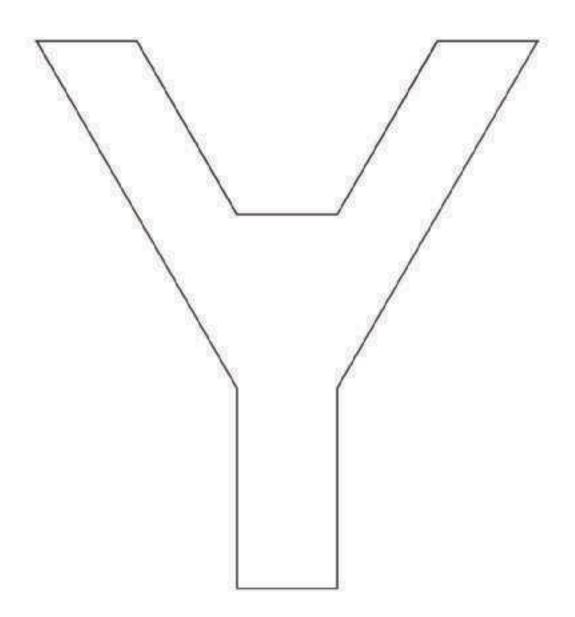
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Activity Kindergarten.7.2.2	Make a Y	1	yes	no	no	no
Assessment Kindergarten.7	Checkpoint	0	yes	ou	no	no
Assessment Kindergarten.7	Checkpoint	0	yes	ou	no	no
Activity Kindergarten.7.2.1	Quack Quack	-1	yes	no	no	no
Activity Kindergarten.7.7.2	Flat Shapes Cards K	2	OU	yes	no	no
Activity Kindergarten.7.3.3	Pattern Blocks Stage 7 Recording Sheet	1	yes	ou	no	no
Center	Pattern Blocks Stage 7 Recording Sheet	1	yes	ou	no	no
Activity Kindergarten.7.1.1	Squares Squares Squares	1	yes	ou	no	no
Activity Kindergarten.7.6.2	Book of 10	1	yes	ou	no	no
Activity Kindergarten.7.6.3	Shake and Spill Stage 4 Recording Sheet Kindergarten	1	yes	00	no	no
Center	Shake and Spill Stage 4 Recording Sheet Kindergarten	1	yes	00	no	no
Activity Kindergarten.7.1.2	Shape Puzzle	2	yes	ou	no	no

no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
no	no	no	no	no	no	no	no	no	no	no	no	ou	no	ou	no
no	no	yes	no	no	no	no	no	no	no	no	no	no	no	no	no
ou	no	no	no	yes	yes	yes	no	no	yes	no	yes	yes	yes	yes	yes
2	2	35	8	1	1	1	2	2	1	2	2	1	1	1	1
Pattern Blocks Stage 6 Mat	Pattern Blocks Stage 6 Mat	Examples of Flat Shapes Display Cards	Geoblocks Stage 2	Find the Pair Stage 1 Recording Sheet	Find the Pair Stage 2 Recording Sheet	Grab and Count Stage 1 Recording Sheet	Pattern Blocks Stage 2 Mat	Pattern Blocks Stage 3 Directions	Pattern Blocks Stage 4 Recording Sheets	Pattern Blocks Stage 5 Mat	Pattern Blocks Stage 5 Recording Sheet	Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)	Counting Collections Stages 1 and 2 Recording Sheet	Shake and Spill Stage 3 Recording Sheet Kindergarten	Shake and Spill Stage 3 Recording Sheet Grade 1
Activity Kindergarten.7.2.3	Center	Activity Kindergarten.7.10.1	Center	Center	Center	Center	Center	Center	Center	Center	Center	Center	Center	Center	Center

no	0U
no	no
yes	yes
no	no
2	2
Build Shapes Stage 1 and 2 Cards	Build Shapes Stage 1 and 2 Cards
Center	Center



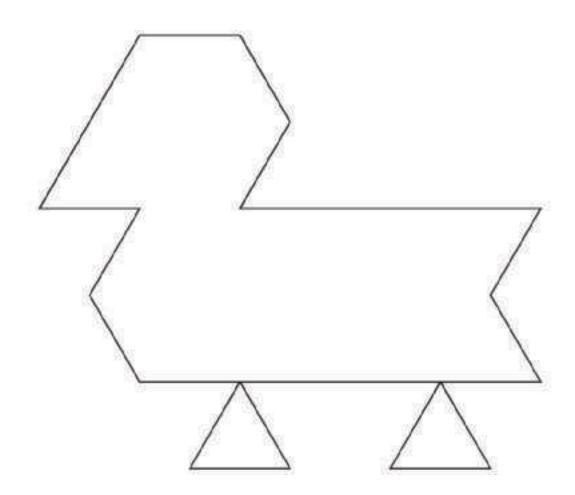
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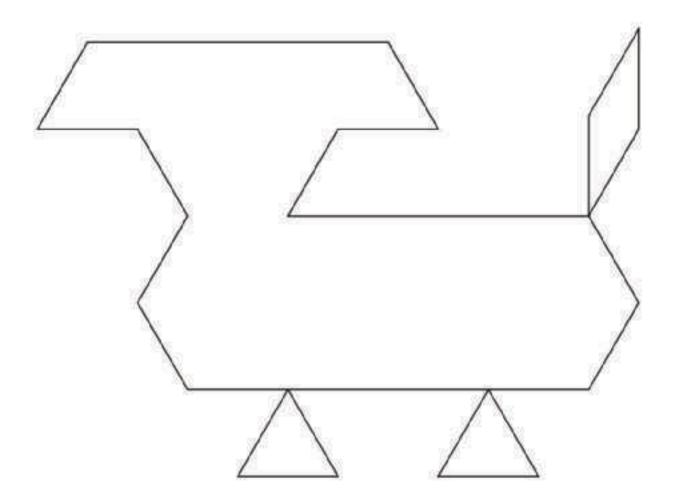
Kindergarten, Unit 7 Section A Checkpoint	Count and comCompose shape	Count and compare numbers, and solv Compose shapes from smaller shapes.	Count and compare numbers, and solve story problems involving shapes. Compose shapes from smaller shapes.	ng shapes.	
	Count all to determine the total.	Write a number to represent a quantity up to 20.	Accurately retell a story problem in their own words.	Use objects, drawings, or equations to represent a story problem.	Explain connections between objects, drawings, story problems, and equations.

Kindergarten, Unit 7 Section B Checkpoint	 Describe a Compare v Compose s Distinguish between flat and solid shapes.	Describe and compare three-dimensional shapes. Compare weight and capacity of objects. Compose shapes from smaller shapes. Use comparison language to describe and compare attributes of solid shapes. Shapes. Shapes.	imensional shapes. of objects. shapes. Use comparison language to describe the weight or capacity of objects.	Build solid shapes from components.	pes ents.

1.



2.



Flat Shapes Cards K

Flat Shapes Cards	Flat Shapes Cards	Flat Shapes Cards
Flat Shapes Cards	Flat Shapes Cards	Flat Shapes Cards

Put together 15 pattern blocks to make a shape.

Put together 9 pattern blocks to make a shape.

Put together 18 pattern blocks to make a shape.

Put together 7 pattern blocks to make a shape.

Put together 20 pattern blocks to make a shape.

Put together 12 pattern blocks to make a shape.

_ pattern blocks to make a shape.

Put together 15 pattern blocks to make a shape.

Put together 9 pattern blocks to make a shape.

Put together 18 pattern blocks to make a shape.

Put together 7 pattern blocks to make a shape.

Put together 20 pattern blocks to make a shape.

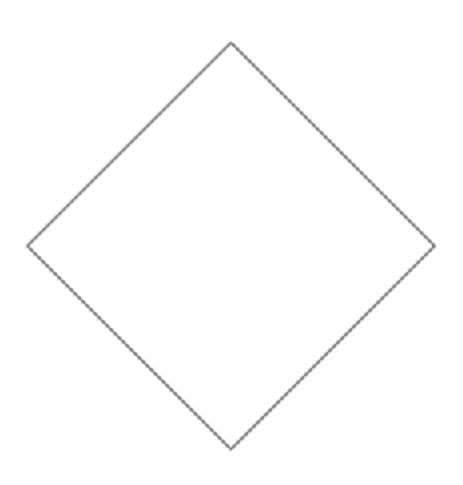
Put together 12 pattern blocks to make a shape.

_ pattern blocks to make a shape.

1.



2.



Squares Squares

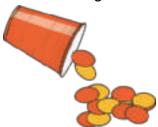
3.

4.

_____′S

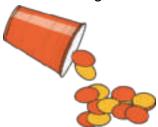
Book of 10

Shake and Spill Stage 4 Recording Sheet Kindergarten



total counters	expression
5	3 2
	+
	+
	+
	+
	+

Shake and Spill Stage 4 Recording Sheet Kindergarten



total counters	expression
5	3 2
	+
	+
	+
	+
	+

1.

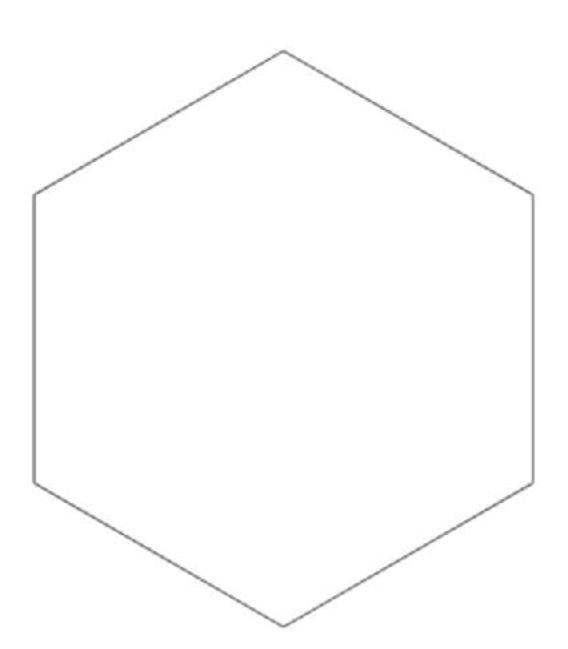


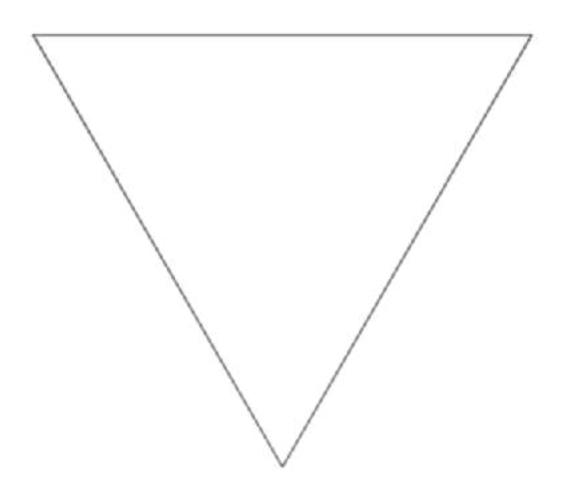
I used _____ pattern blocks.

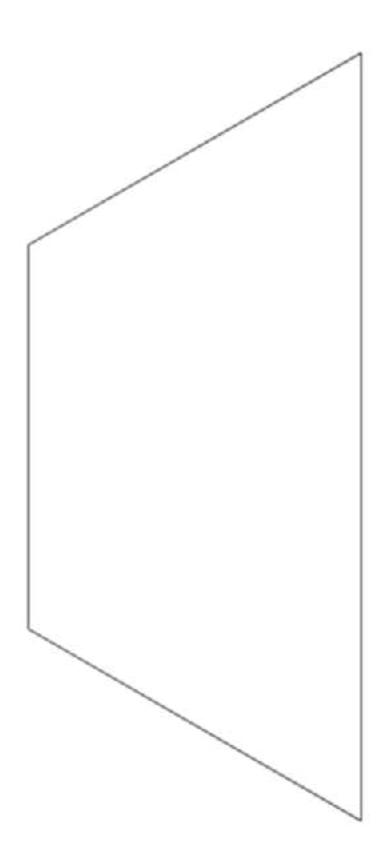
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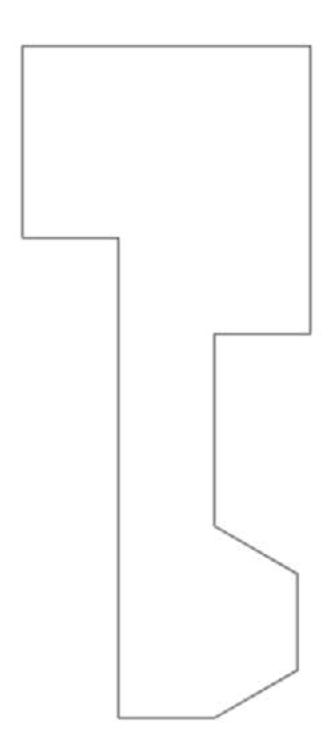


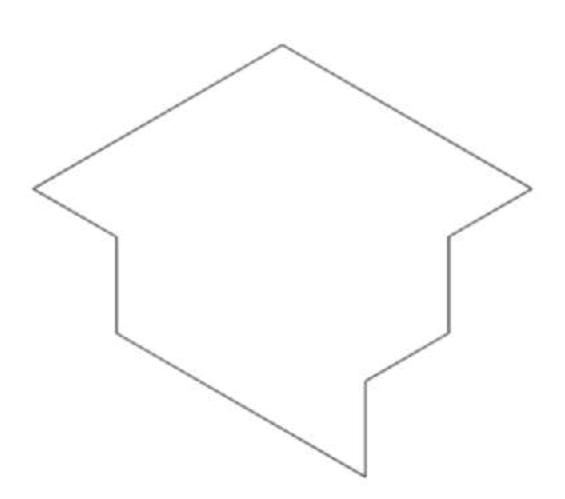
I used _____ pattern blocks.

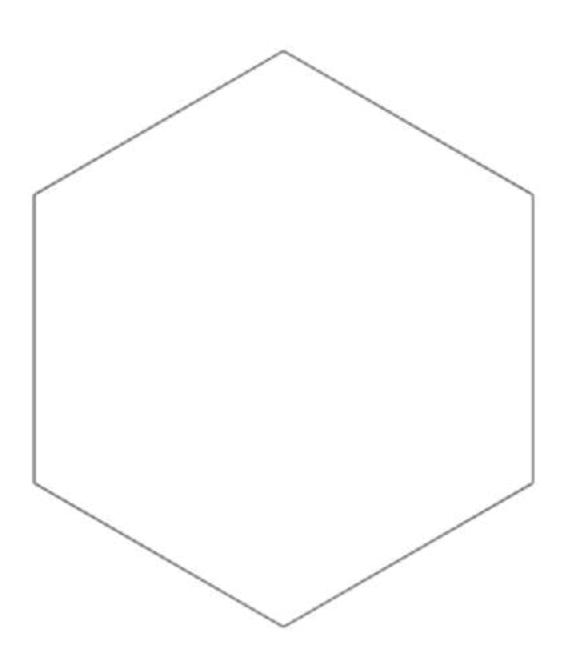


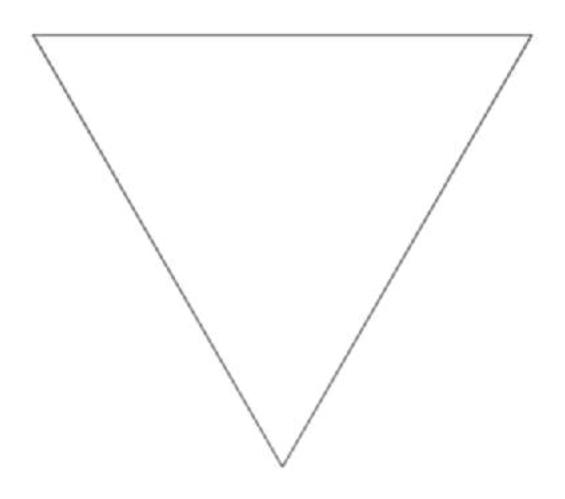


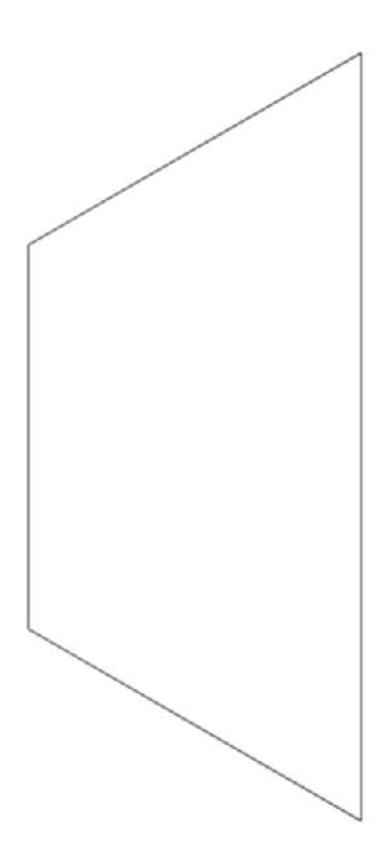


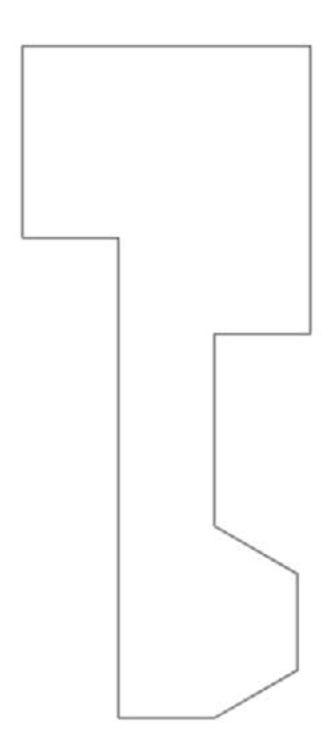


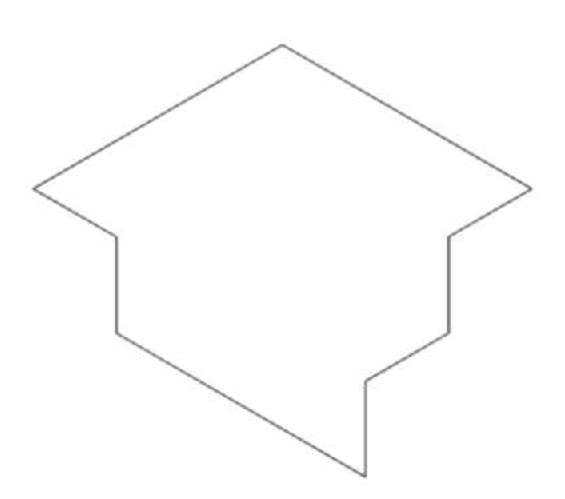




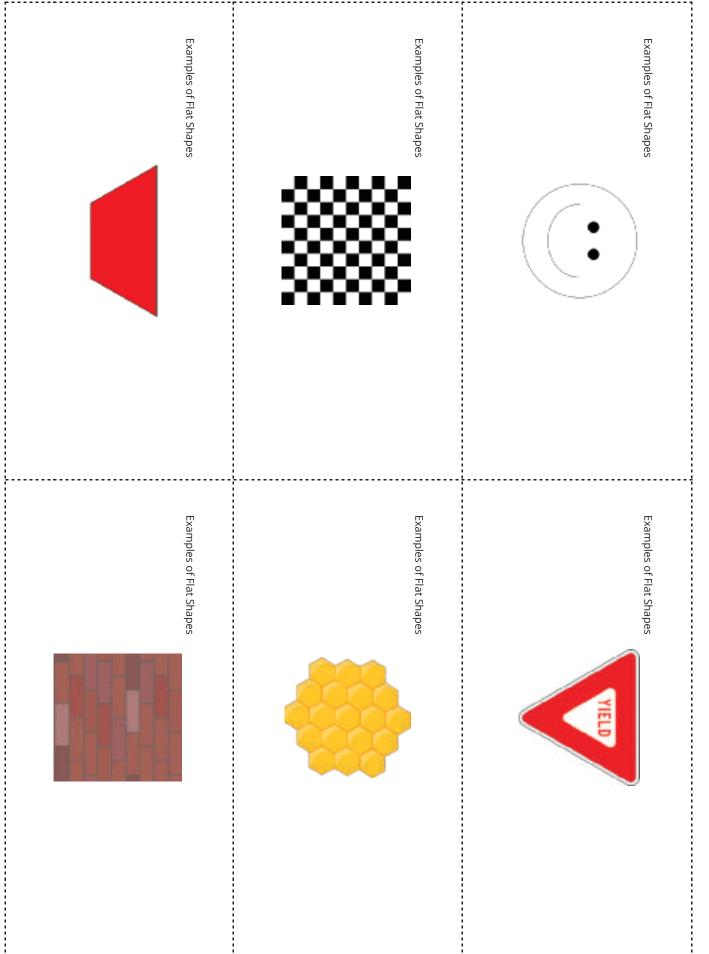


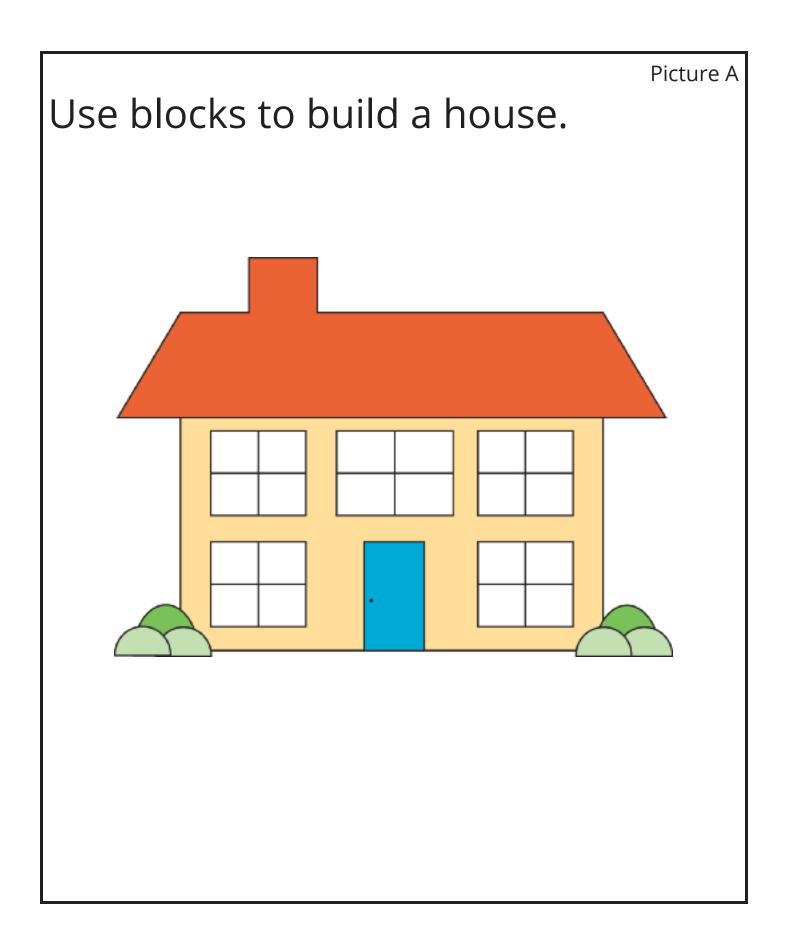






Examples of Flat Shapes Display Cards

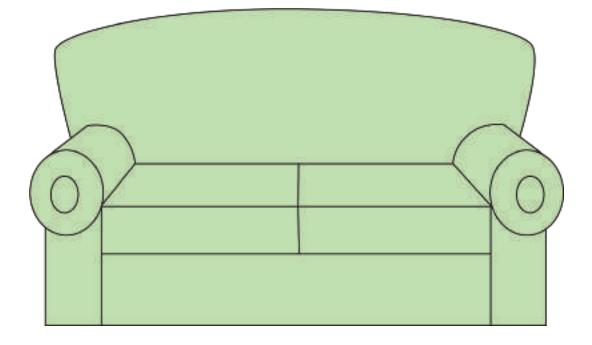




Picture B Use blocks to build a train.

Picture C

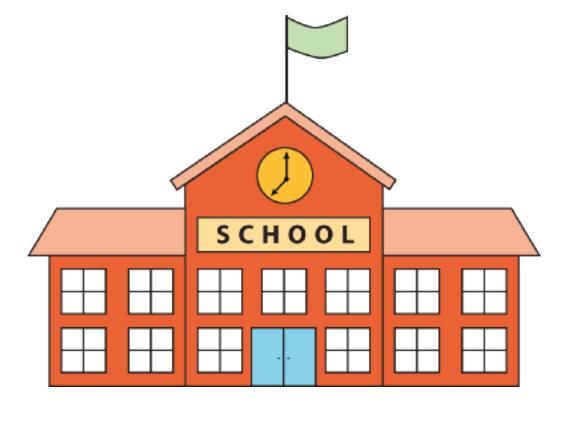
Use blocks to build a couch.



Picture D Use blocks to build a bus. **SCHOOL BUS**

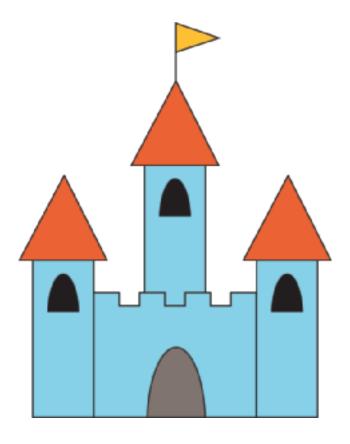
Picture E

Use blocks to build a school.



Picture F

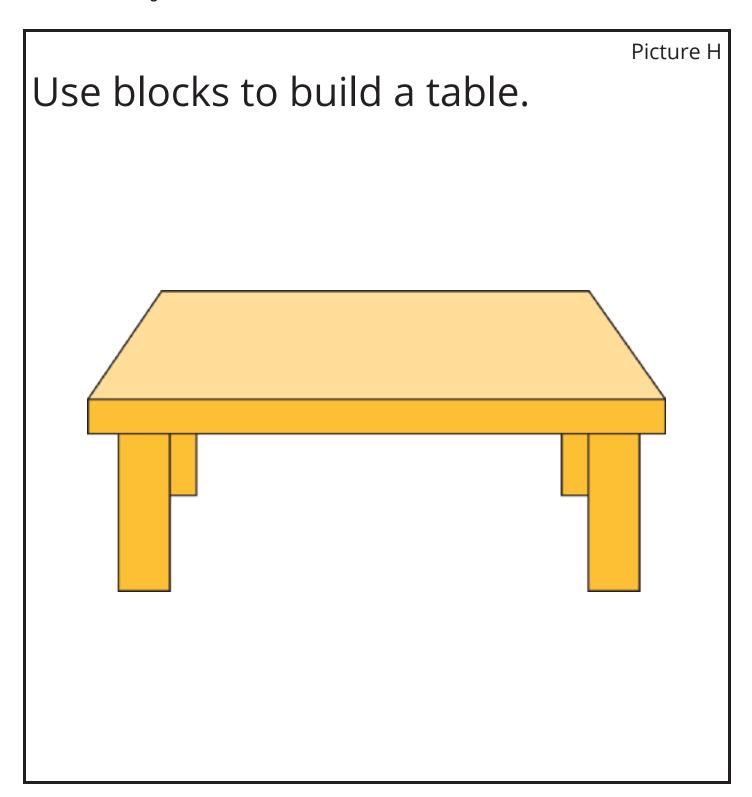
Use blocks to build a castle.

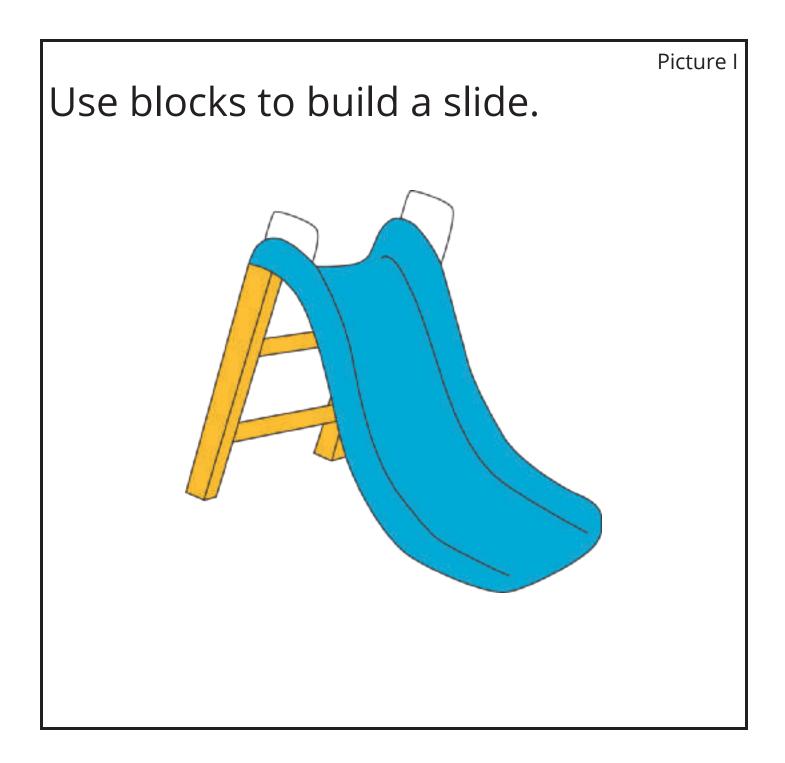


Picture G

Use blocks to build a road.

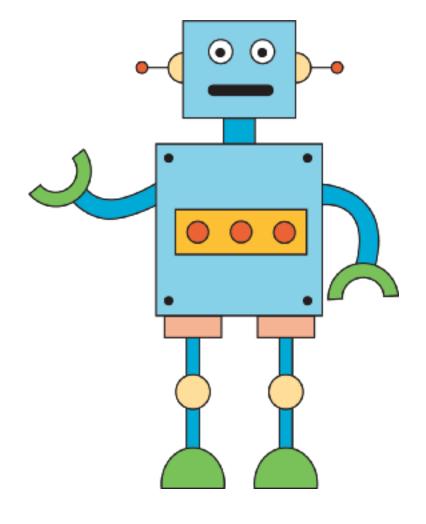






Picture J

Use blocks to build a robot.



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 5.
 - If they have the card, put the pair of cards down and write an expression.
 - o 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.

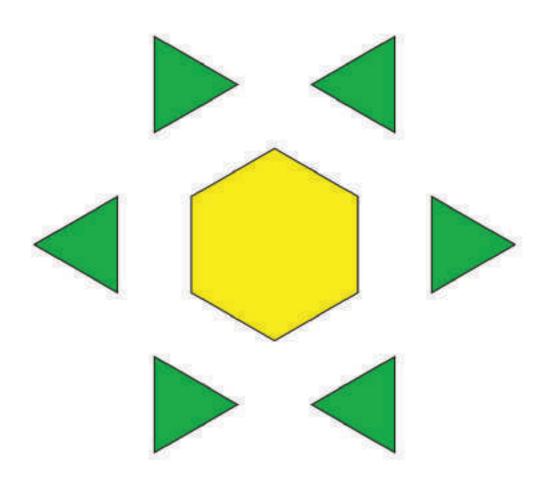
Find the Pair Stage 1 Recording Sheet

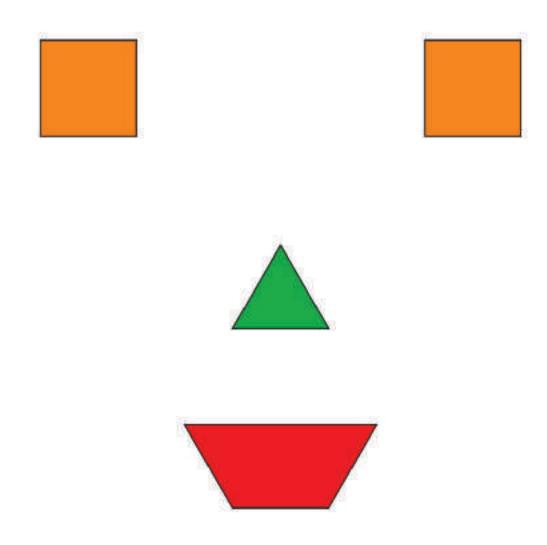
Directions:

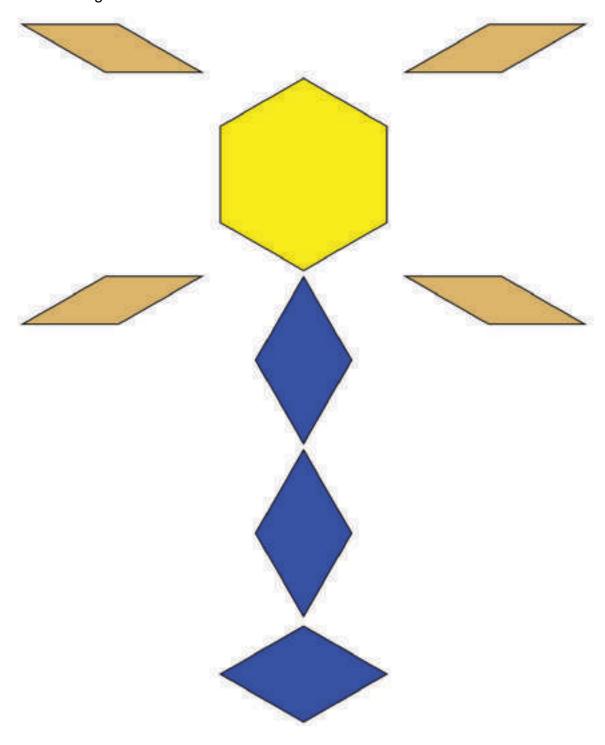
- Take 5 cards each and put the rest in a pile face down.
- Partner A:
 - Ask your partner for a number that can be added to one of your cards to make 10.
 - If they have the card, put the pair of cards down and fill in the equation.
 - o If they don't have that card, pick a card from a pile.
- Take turns asking for cards. The partner with the most pairs at the end of the game wins.

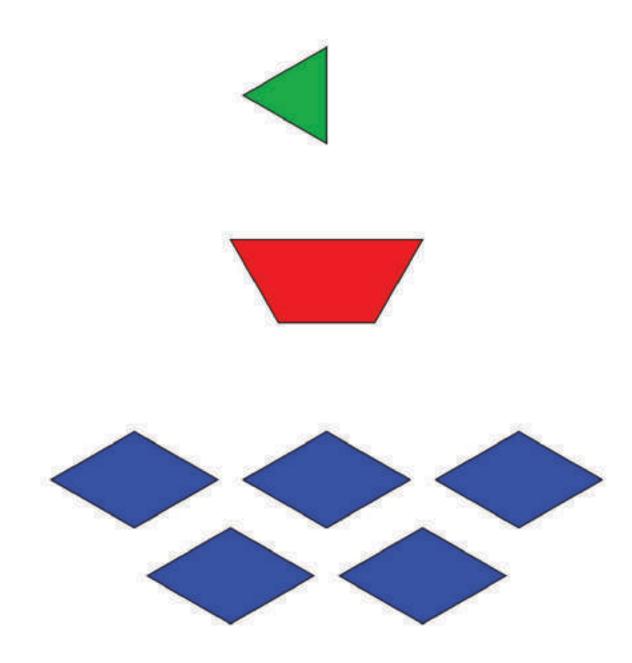
Grab and Count Stage 1 Recording Sheet

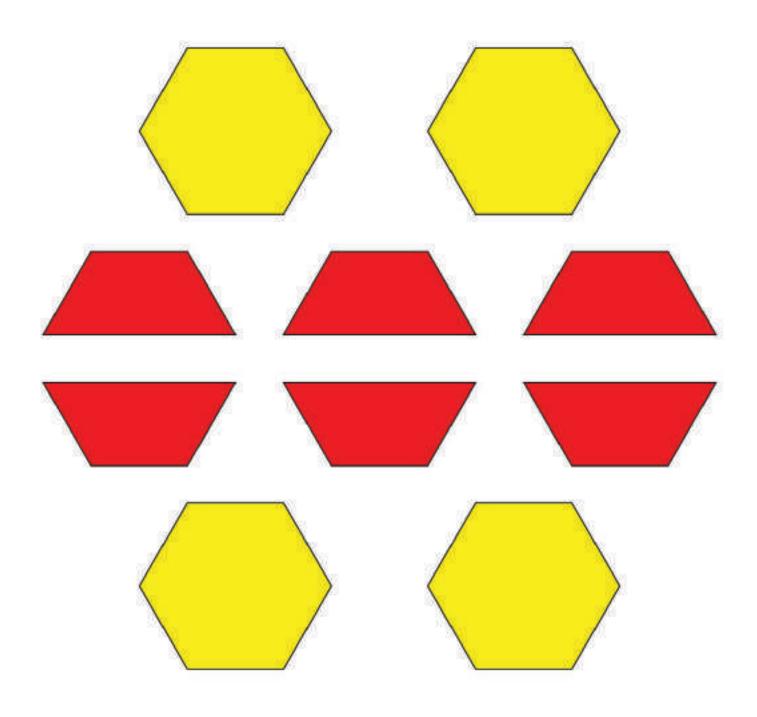
	guess	count
-		
_		
	guess	count
-		
_		
	guess	count
-		
_		
	guess	count
-		
_		
	guess	count
-		
-		

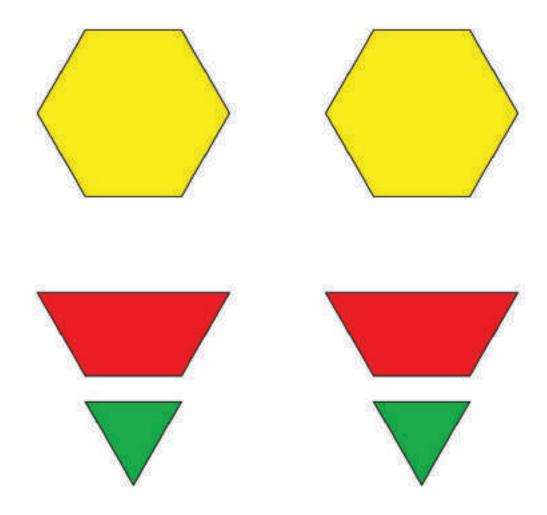


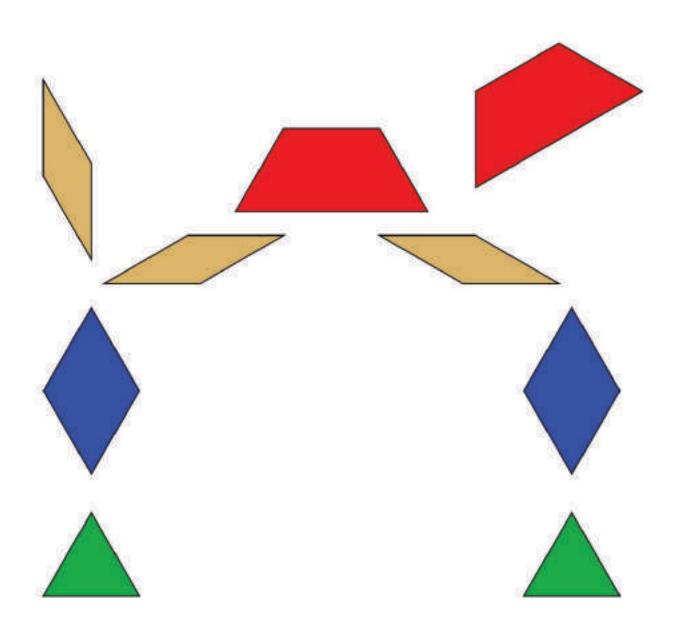


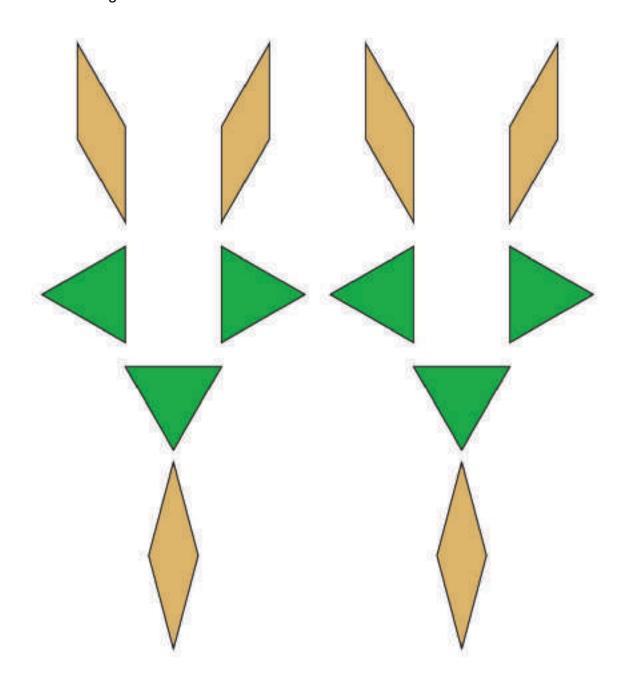


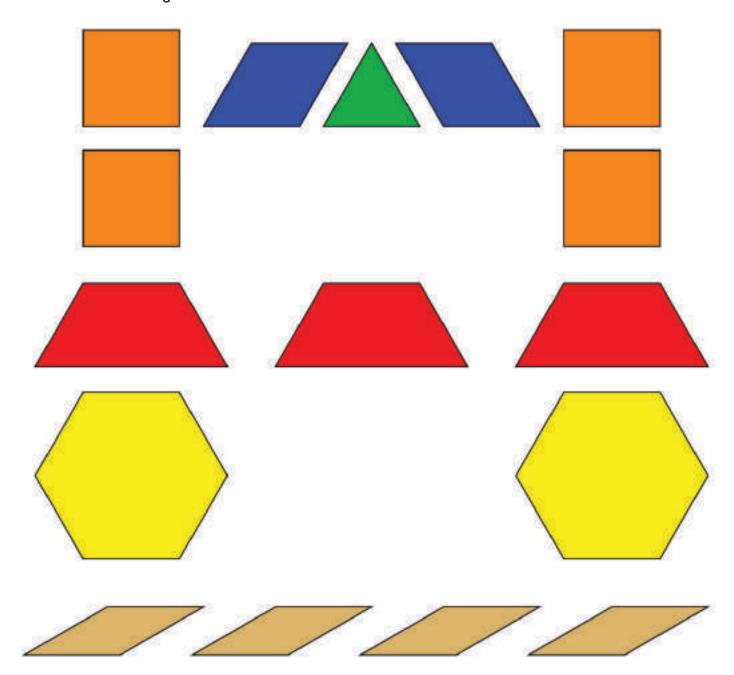




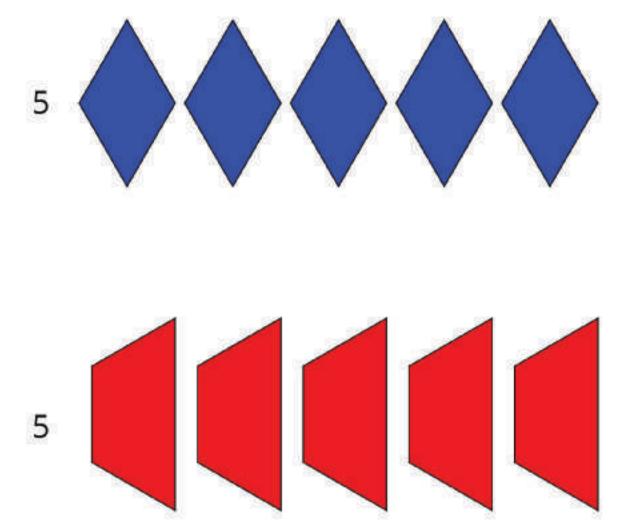


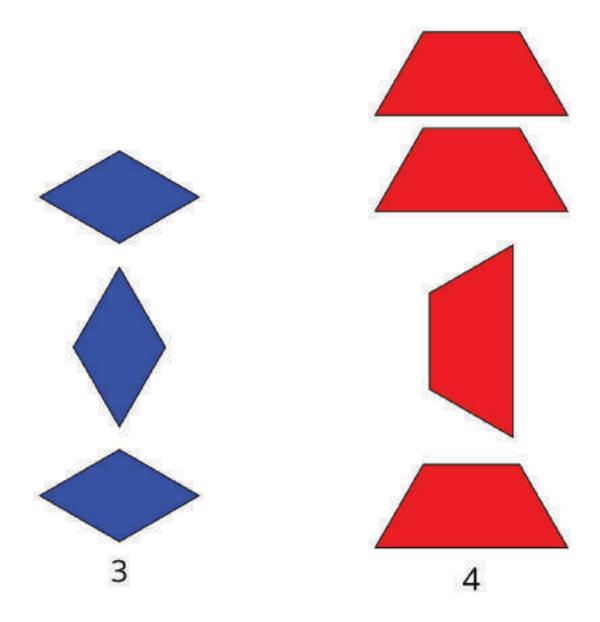


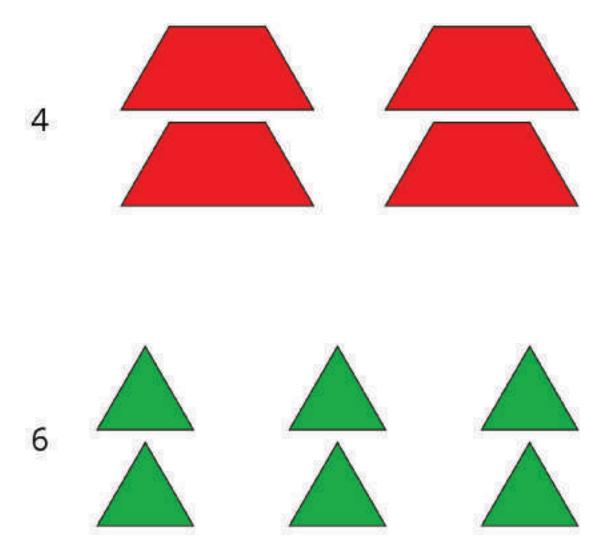


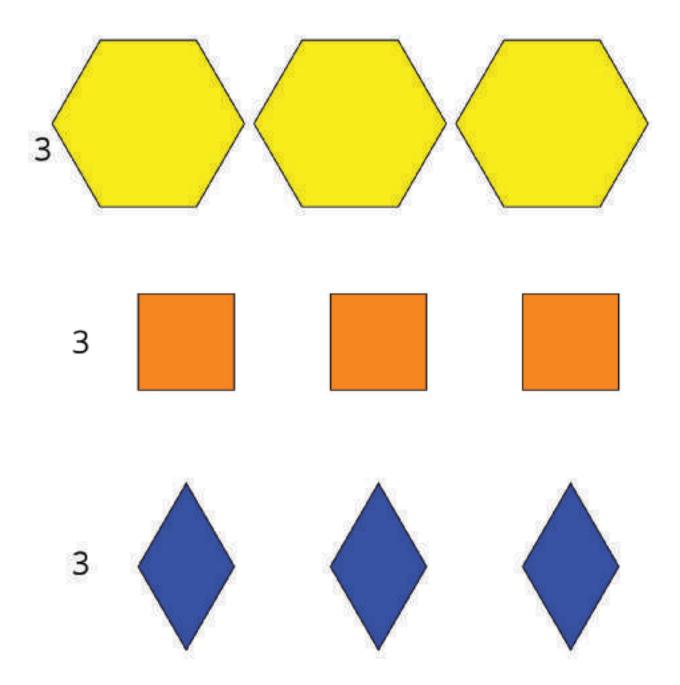


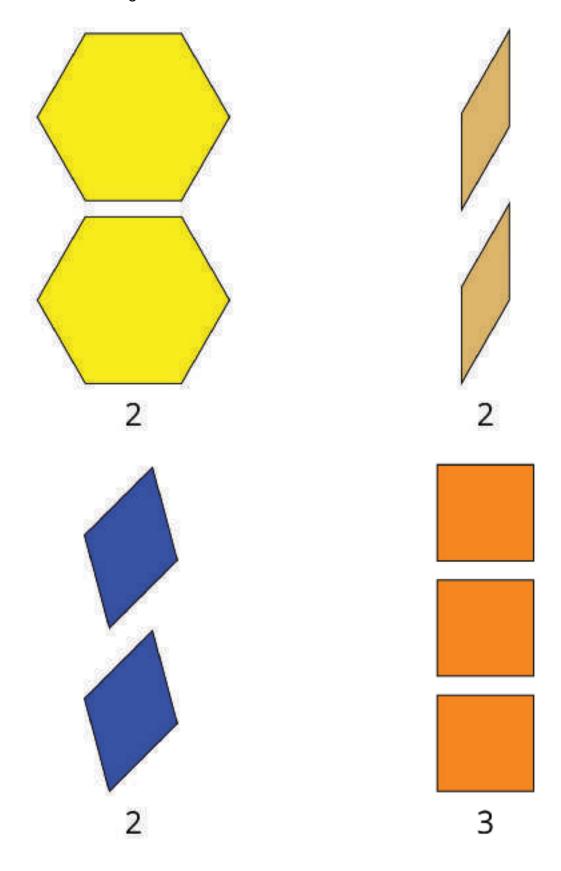


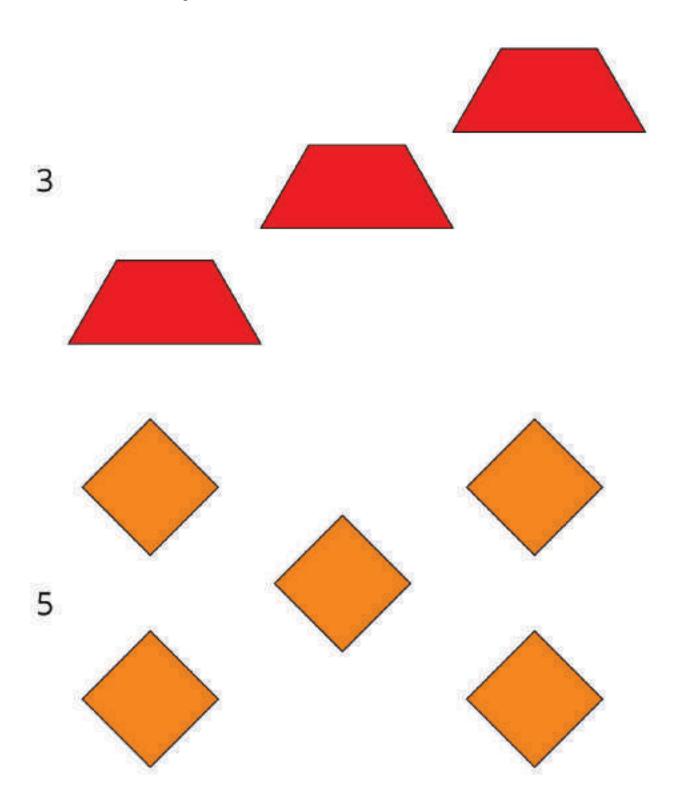


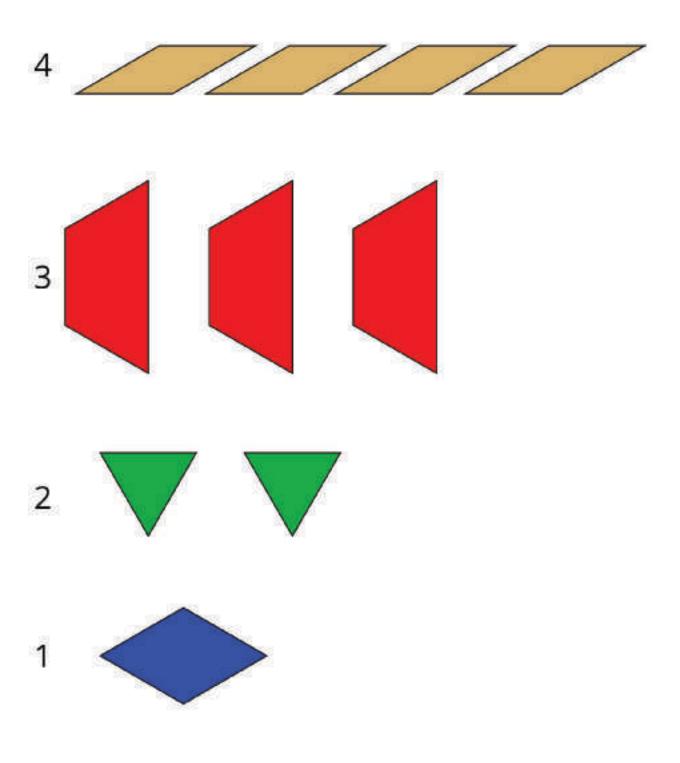


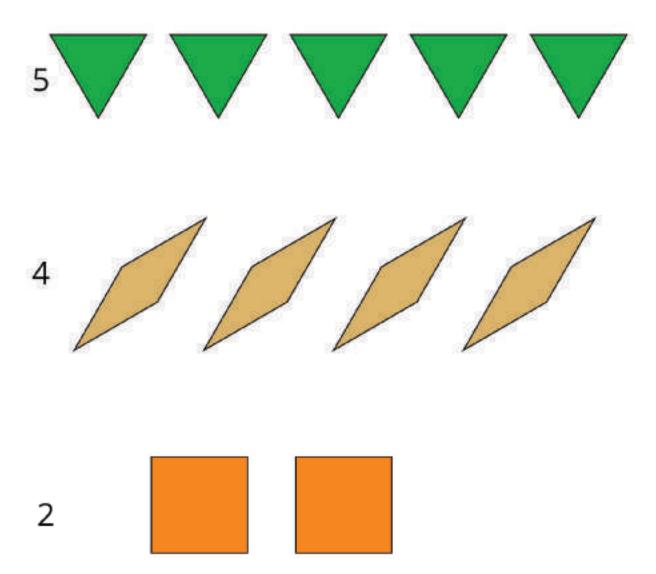


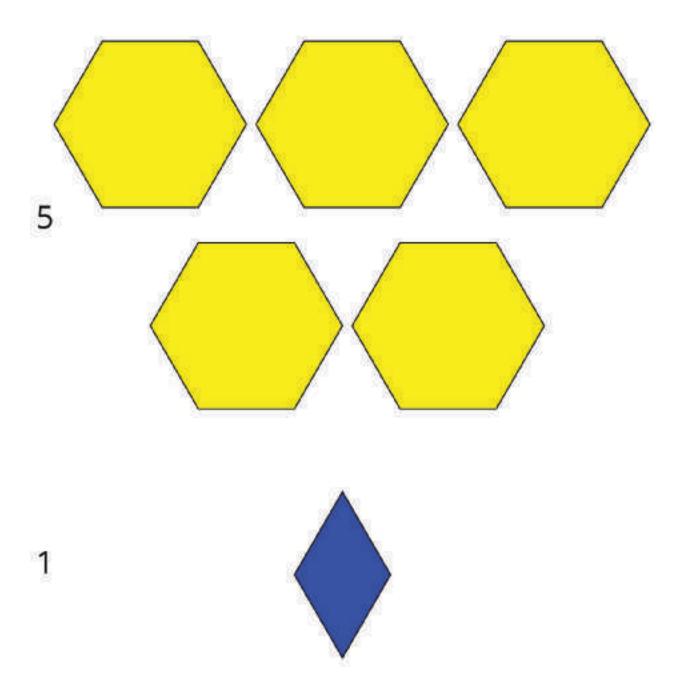


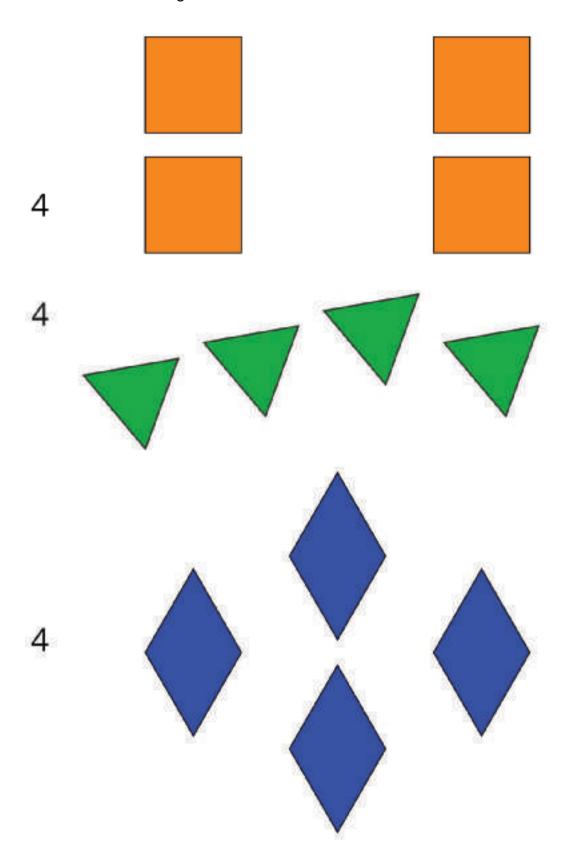




















I used more than .





tan rhombuses

7 \(\rightarrow \) green triangles

I used more _____ than _____.







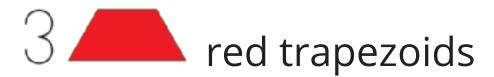


I used more _____ than _____.









I used more ______ than _____.







2 tan rhombuses

I used more ______ than _____.



8 **A** green triangles

5 blue rhombuses

orange squares

I used more ______ than _____.









I used more _____ than _____.

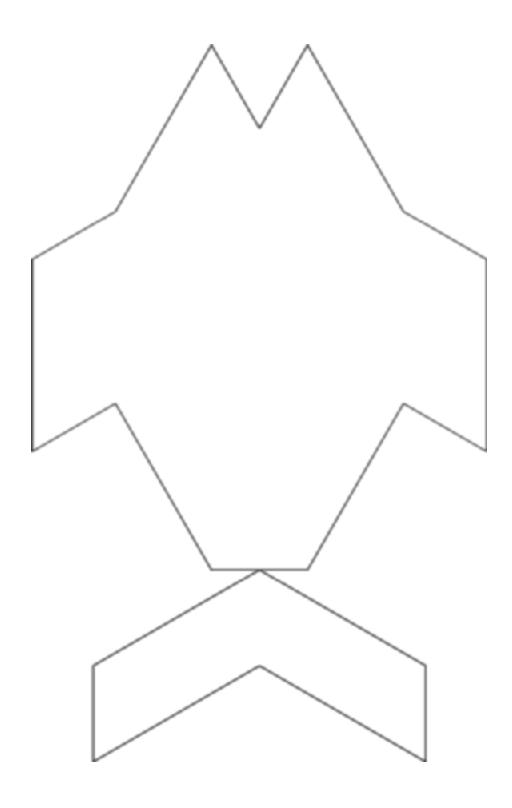


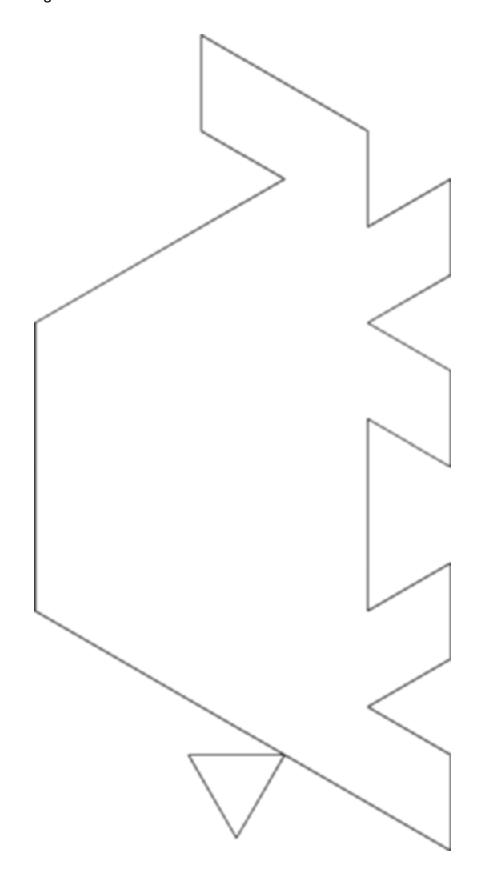
5 blue rhombuses

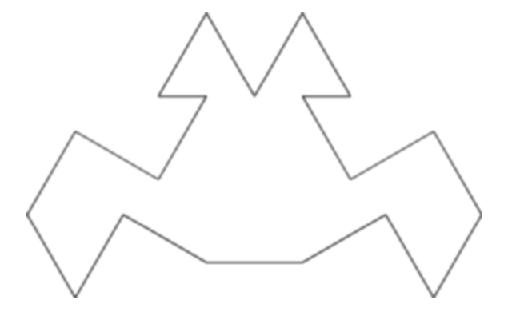
8 **A** green triangles

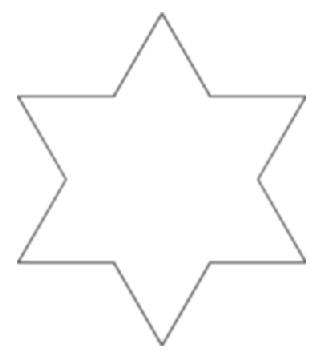
2 yellow hexagons

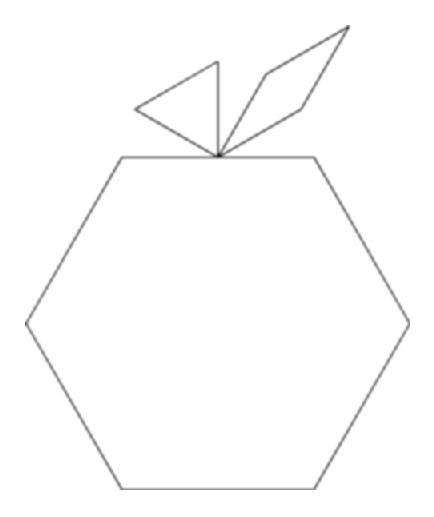
I used more ______ than _____.

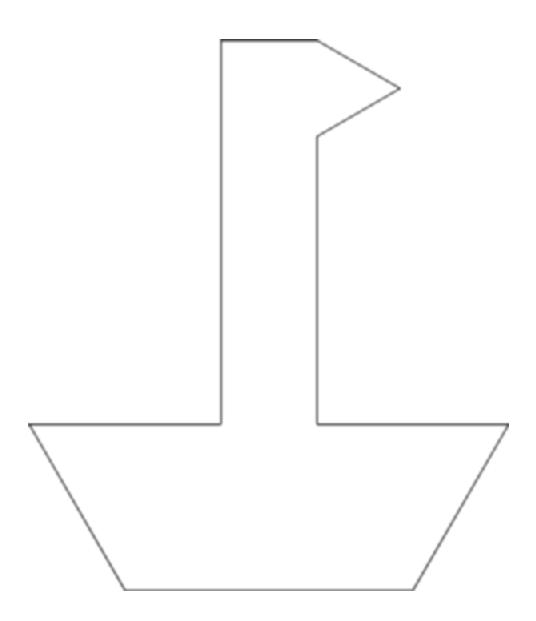


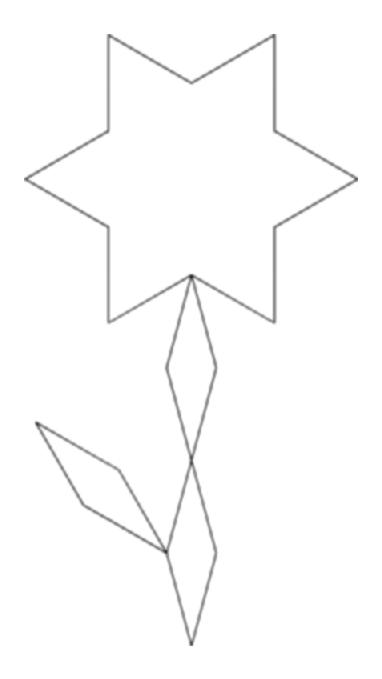


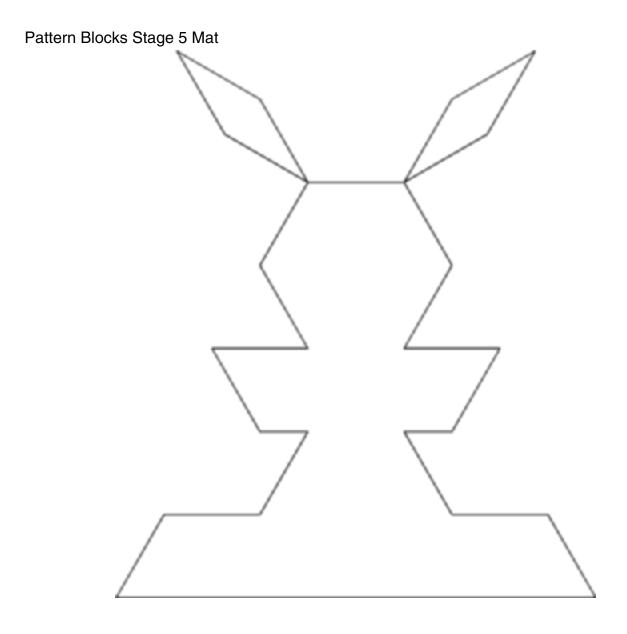


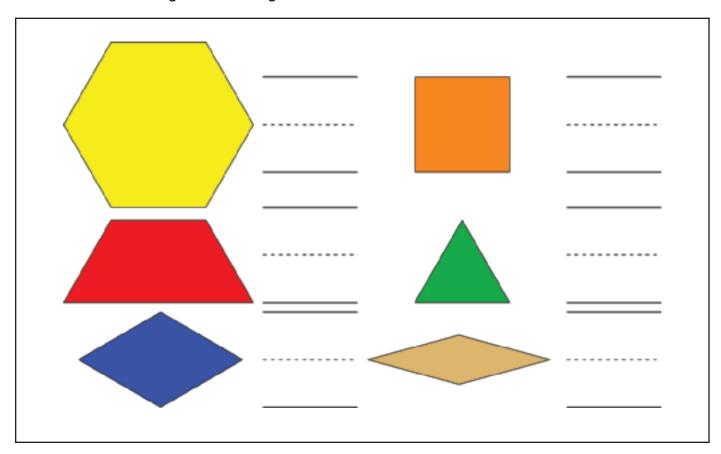


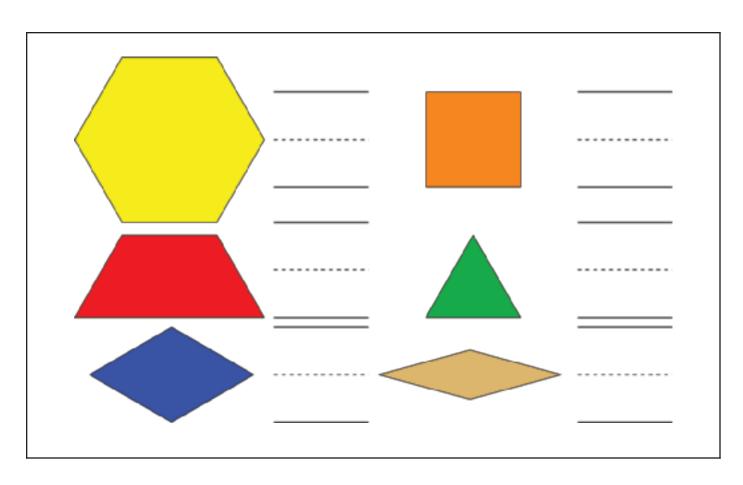


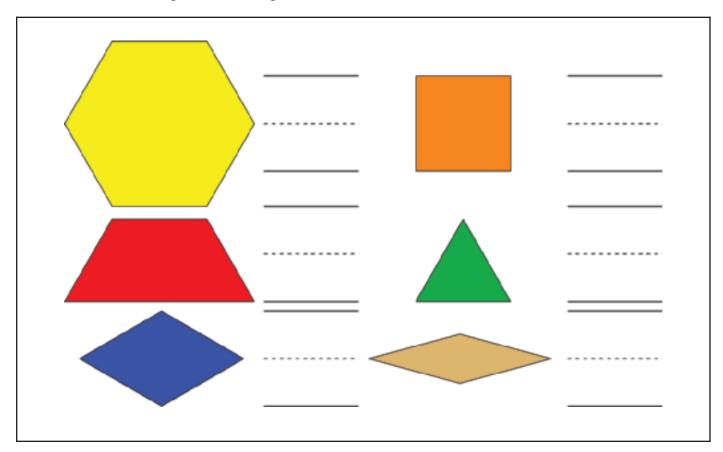


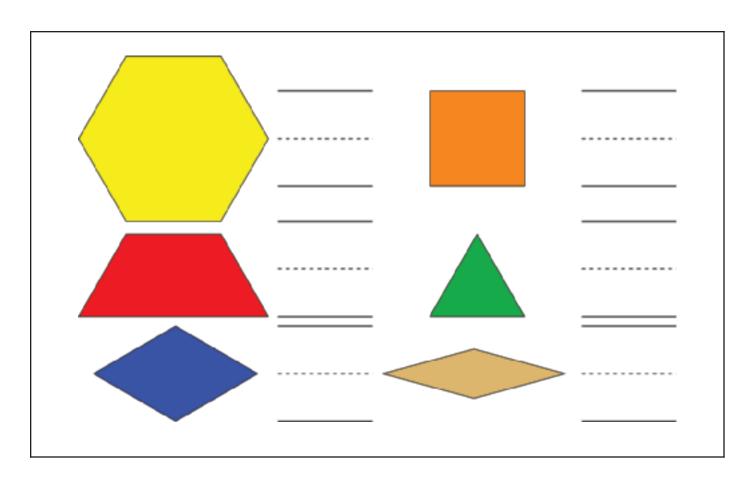


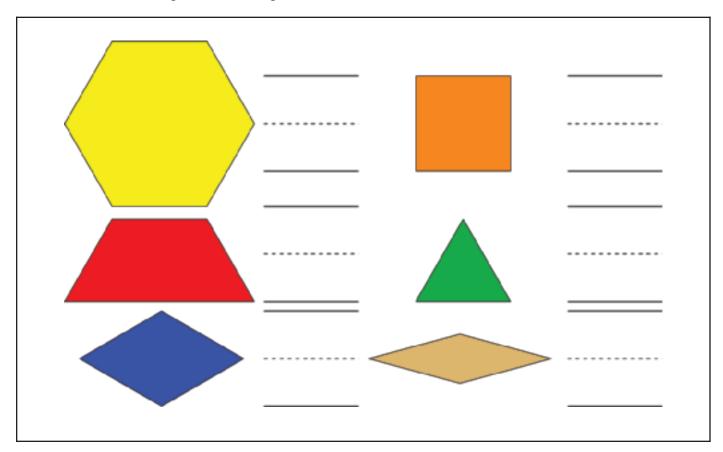


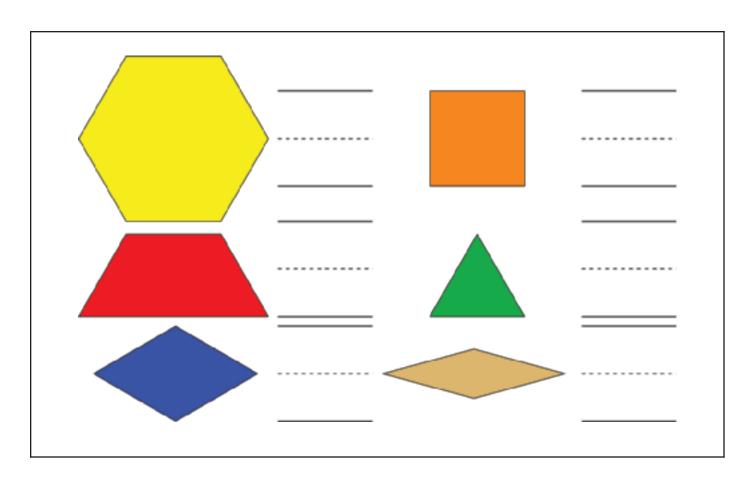


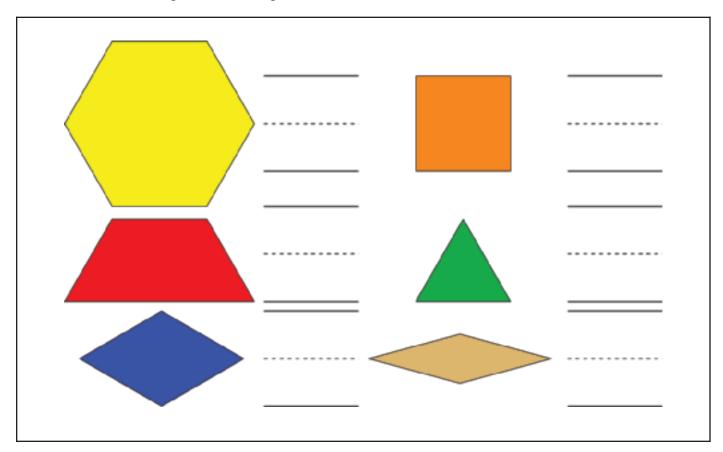


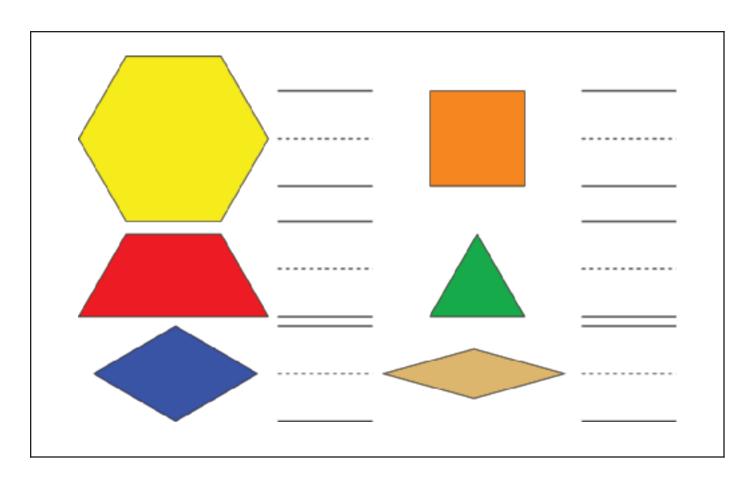








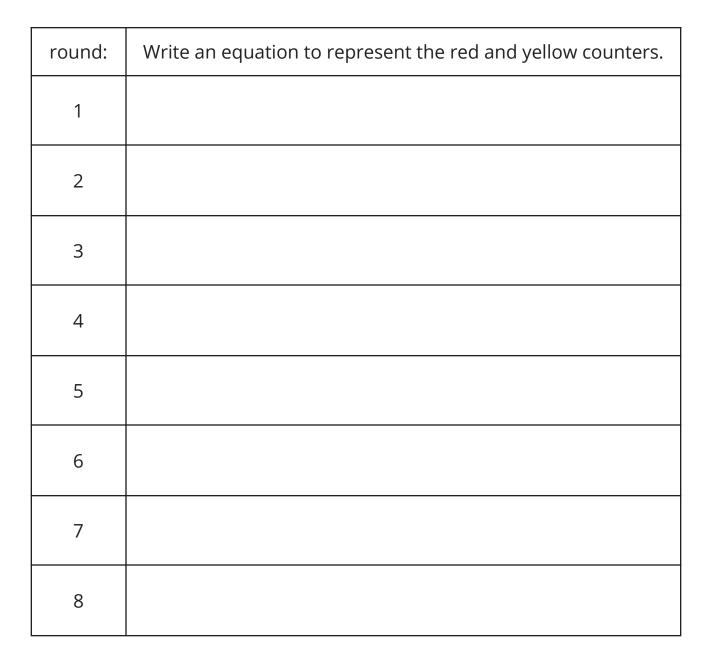




Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)

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.





Counting Collections Stages 1 and 2 Recording Sheet

How many are there? Show how you counted. My count: How many? _____

Shake and Spill Stage 3 Recording Sheet Kindergarten

Draw a picture.



Fill in the expression.		
	+	
Draw a picture.		
Fill in the expression		
Fill in the expression.		
	+	
	 	-
Draw a picture.		
EIII		
Fill in the expression.		
	+	
		-

Shake and Spill Stage 3 Recording Sheet Kindergarten

Draw a picture.			
Fill in the expression.			
	+		
		-	
Draw a picture.			
Fill in the expression.			
	+		
		_	
Draw a picture.			
Fill in the expression.			
	+		
		_	

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	

Build Shapes	Build Shapes	Build Shapes
Build Shapes	Build Shapes	Build Shapes

Build Shapes	Build Shapes	Build Shapes
Build Shapes	Build Shapes	Build Shapes

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