

Student Edition pages, Manipulatives and Presentation Screens support learning in this lesson



# Building Shapes From Flat Shapes

Composing Two-Dimensional Shapes

Let's make shapes using smaller shapes.

### **Key Concepts**

#### Today's Goals

- **1. Goal:** Compose larger two-dimensional shapes using smaller two-dimensional shapes.
- **2. Goal:** Identify the two-dimensional shapes within a larger two-dimensional shape.
- Language Goal: Describe how smaller two-dimensional shapes are used to compose larger two-dimensional shapes. (Listening and Speaking)
   ELPS 1.E, 2.E, 2.F

#### **Connections and Coherence**

Students create and analyze two-dimensional target shapes using pattern blocks. They identify the smaller shapes that they see within larger shapes and describe their attributes. Students have an opportunity to use repeated reasoning to compose new shapes and notice that larger shapes can be built with smaller shapes. (TEKS 1.1.E)

**Note:** The *trapezoid* pattern blocks are used to help students compose twodimensional shapes. Trapezoids are formally introduced in Grade 3.

#### Prior Learning

In Lessons 3 and 4, students identified and described the attributes of circles, triangles, rectangles, squares, rhombuses, and hexagons. In Lesson 5, students created two-dimensional shapes in different ways.

#### Future Learning

In Lessons 7 and 8, students will identify and describe three-dimensional solids including spheres, cones, cylinders, rectangular prisms, and triangular prisms.

### **Integrating Rigor in Student Thinking**

 Students apply their understanding of two-dimensional shapes and their attributes to describe two-dimensional shapes.

### **Vocabulary**

#### **Review Vocabulary**

attribute rhombus hexagon square rectangle triangle



#### **Addressing**

1.6.C

Create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons.

Also Addressing: 1.6.B, 1.6.F

Math Process Standards: 1.1.D, 1.1.E

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

3.E, 3.F

#### **Building Toward**

1.6.E

2.8.D

### **Building Math Identity**

### I am a doer of math.

In math class, how might someone else's mistake help you learn?

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

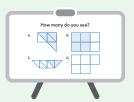
# Lesson at a Glance • 60 min

**( TEKS: 1.1.D, 1.1.E, 1.6.B, 1.6.C, 1.6.F** 

### Warm-Up

Whole Class | • 10 min

Students use the **How Many Do You See?** routine, in which they look at and describe the different ways they see different arrangements of smaller shapes and composite shapes within a larger shape. (TEKS 1.1.D)





### **Activity 1**

Pairs | • 15 min

Students compose a rectangle using 4 triangles and identify the shapes they see within the larger shape. Students describe the attributes of two-dimensional shapes. Then, students compose a rectangle in a different way.

Materials: Activity 1 PDF, straightedges Additional Prep Cut out: Activity 1 PDF











### **Activity 2**

Pairs | • 15 min

Students compose a hexagon with smaller pattern blocks to recognize that a larger two-dimensional shape can be composed of smaller shapes in more than one way.

Manipulative Kit: pattern blocks

Materials: Activity 2 PDF, markers, Words to Describe Flat Shapes chart (from prior lessons)











### **Synthesis**

Whole Class | 🕒 5 min

Students review and reflect on how smaller shapes can be used to compose a larger two-dimensional shape.



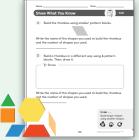


### Show What You Know (optional)

🔓 Independent | 😃 5 min

Students demonstrate their understanding by composing a rhombus in more than 1 way and identifying the smaller two-dimensional shapes.

Manipulative Kit: pattern blocks Materials: Show What You Know PDF









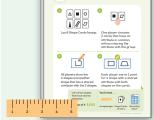
### Center

Small Groups 4 15 min

Students are introduced to the Center, How Are They the Same?, Grade 1 Shapes, in which they develop their understanding of two-dimensional shapes by finding shared attributes.







How Are They the Same?







#### **Math Language Development**

EB Emergent Bilinguals

Consider using the Math Language Development Resources with the Activity 1, Monitor to support math language acquisition.



Sentence frames and word bank

€ ELPS 1.E, 2.C, 2.D, 2.E, 2.F

#### Pre-Production Beginning

Students listen to spoken English and respond using their primary languages and gestures.

Students listen to spoken English and speak using their primary languages, gestures, and single words or short phrases.

Students listen to spoken English and speak using short phrases or simple sentences.

#### ■ Intermediate High Intermediate Advanced

Students listen to spoken English and speak using a variety of sentence types.

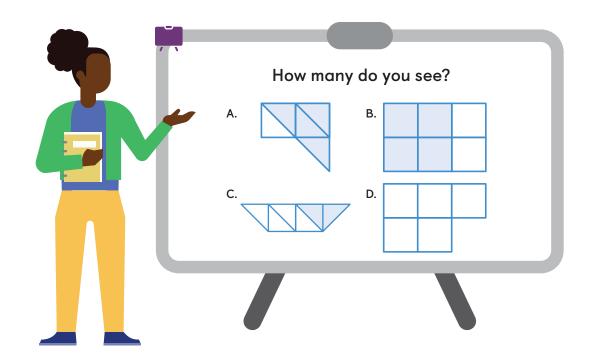
Students listen to spoken English and speak using longer sentences.

Exemplar responses are provided.

# Lesson 6 Warm-Up

## Warm-Up How Many Do You See?

**Purpose:** Students determine the number of shapes they see within composite shapes, including overlapping shapes, to build on their understanding of the defining attributes of two-dimensional shapes.



# 1 Launch



**Display** Shape A, and ask, "How many do you see? How do you see them?"

## 2 Connect

**Record** students' responses as they share, honoring all explanations and keeping responses displayed. Consider outlining the shapes students see using different colors.

**Repeat** for each image, spending the most time discussing Shape D.

Ask, "This monster only eats rectangles that are not squares. How many rectangles do you see that the monster can eat?"

Play the animation. • ELPS 1.F



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

- A: I see 6 triangles. I see 1 big triangle and 5 smaller triangles.
- B: I see 1 big rectangle, 1 big square, and 6 small squares.
- C: I see 6 small triangles and 1 bigger triangle.
- D: I see 5 small squares and 1 bigger square.

# **Activity 1** Transforming Triangles

**Purpose:** Students apply their understanding of the defining attributes of two-dimensional shapes to create a larger two-dimensional shape using triangles and identify smaller shapes within the target shape.

### 1 Launch



**Distribute** two triangles from the Activity 1 PDF to each student.

Arrange students in pairs.

**Say**, "Put all your triangles together to build a new shape." Have groups work for 1–2 minutes.

**Read aloud** Problems 1–4, pausing between each problem to allow students time to work.



Emergent Bilinguals Encourage students to verbalize to their partner, using two-dimensional shape names and their attributes, how their shapes were composed and then draw the shapes. PLPS 1.E, 2.B, 3.E, 3.F

## 2 Monitor



After students have completed **Problem 3**, refer to the **O Differentiation | Teacher Moves** table on the following page.

#### If students need help getting started . . .

- · Ask, "What tools might help you draw the new shape?"
- Ask, "Which part of the shape will you draw first?"

### 3 Connect



**Display** 4 triangles composed in the shape of a square.

Use the Think-Pair-Share routine. Ask, "How many squares do you see?"

**Say**, "Let's count them together." Have students count as you highlight the 2 squares.

**Use the Think-Pair-Share routine.** Ask, "How many rectangles that are not squares do you see?"

**Say**, "Let's count them together." Have students count as you highlight the 1 rectangle that is not a square.



Key Takeaway: Say, "You can use smaller shapes to build larger shapes."



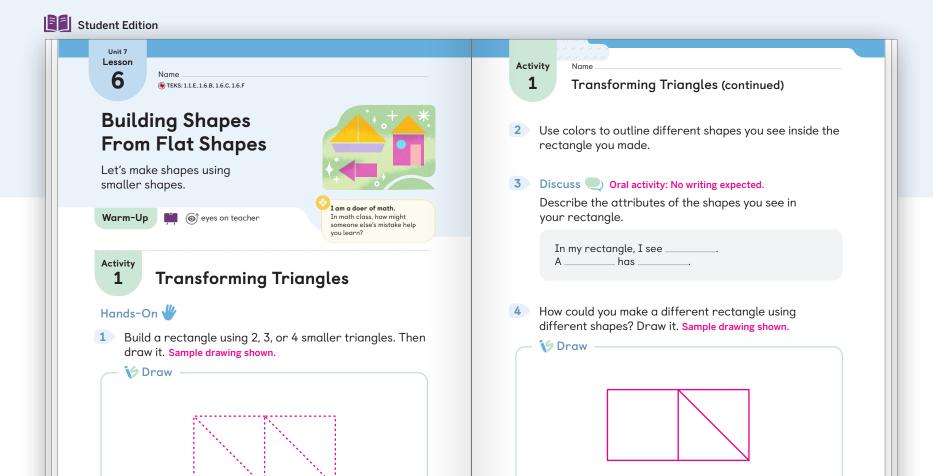
#### **Materials**

#### Lesson Resources:

- Distribute two triangles from the Activity 1 PDF to each student during the Launch.
- Refer to the Activity 1 PDF (answers) during the Connect.

#### Classroom materials:

• Distribute straightedges to students during the Launch.



Warm-Up | Activity 1



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Grade 1 Unit 7 Lesson 6



Activity 1

Look for students who	For example	Provide support
Describe the triangles they used to compose the shape.	I see 4 triangles. There are 4 triangles in 1 row.	Strengthen Ask, "Do you notice any larger shapes that the triangles formed when you put them together?"
Describe $1\mathrm{or}$ more two-dimensional shapes they see within the larger shape.	I see 1 square made of 2 triangles.	S Strengthen Ask, "What other shapes do you see?"
Describe 1 or more two-dimensional shapes that overlap.	I see 2 squares made of 2 smaller triangles each and 1 rectangle made of 4 smaller triangles.	Stretch Ask, "If you had more smaller triangles, what other shapes could you create? What would these shapes look like?"

Grade 1 Unit 7 Lesson 6

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# **Activity 2** Swapping Shapes

**Purpose:** Students replace pattern blocks used to build a target shape to recognize that there is more than one way to use smaller shapes when building a two-dimensional shape.

## 1 Launch



Say, "Pia loved building shapes using pattern blocks. She saw the star on the Texas flag in her classroom and decided to make stars with different numbers of points."

**Use the Think-Pair-Share routine.** Ask, "What shapes could Pia use to build the stars?"

**Display** the hexagon, both rhombuses, and the *trapezoid*. Say, "This shape is a *hexagon*. Both of these shapes are *rhombuses*. This shape is a *trapezoid*." Record these shape names and an example of each shape on the *Words to Describe Flat Shapes* chart.

Presentation Screens

**Materials** 

pair.

Manipulative Kit:

Classroom materials:

Distribute pattern blocks to each

Use markers to add language and examples to the *Words to Describe*Flat Shapes chart during the Launch.

Lesson 6
Activity 2

**Note:** Students may use their own language to describe these shapes, and they should be encouraged to do so throughout the lesson. Students are not expected to know the attributes of a *trapezoid*.

**Read aloud** Problems 5—9, pausing between each problem to allow students time to work.

### 2 Monitor



While students complete **Problem 7**, refer to the **O Differentiation | Teacher Moves** table on the following page.

#### If students need help getting started . . .

- Ask, "Which part of a star do you want to build first?"
- For Problem 6, ask, "Choose a shape to remove. Which smaller shapes would you like to try to use to build a hexagon?

### 3 Connect



Invite pairs to share the shapes they replaced with smaller shapes to compose the hexagon using Rows 2 and 3 in the *Differentiation* table.

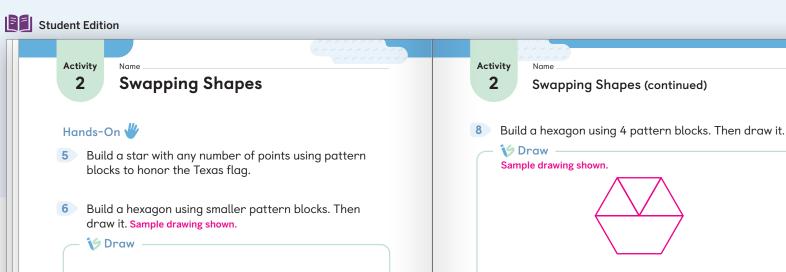


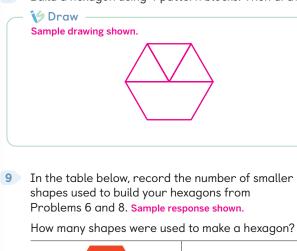
MLR8: Discussion Supports — Revoicing ELPS 1.D, 1.E, 2.B, 2.E As students share their responses, revoice their ideas in the form of a question using mathematical language. For example:

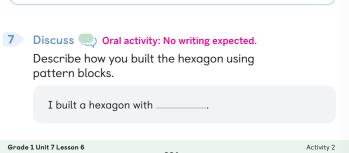
- If a student says, "We used 2 triangles to make the blue shape."
- Revoice their ideas by asking, "You used 2 triangles to make another shape. What is the name of that shape?" Remind students to refer to the *Words to Describe Flat Shapes* chart.
- **Use the Think-Pair-Share routine.** Ask, "How did these pairs build the design with smaller shapes?"



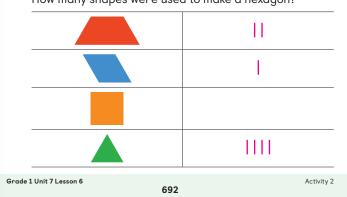
**Key Takeaway:** Say, "You can make larger shapes in more than 1 way with smaller shapes."







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# **Differentiation** | Teacher Moves



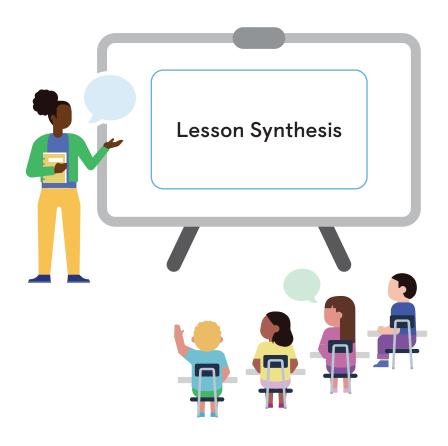
Look for students who	For example	Provide support
Almost there Build the larger shape by replacing the hexagon with 1 shape.	We replaced the hexagon with 6 green pattern blocks.	Support Ask, "What is the name of the green pattern block? Which other shapes could you use to make the hexagon?"
Build the larger shape by replacing the hexagon with 2 different shapes.	We replaced the hexagon with 2 rhombuses and 2 triangles.	Strengthen Ask, "You replaced 2 triangles with 1 rhombus. How could you replace the triangle and rhombus with a bigger shape?"
Build the larger shape by replacing the hexagon with 3 different shapes.	We replaced the hexagon with 1 trapezoid, 1 rhombus, and 1 triangle.	Stretch Ask, "How did you figure out how to build the hexagon with the fewest number of pattern blocks?"



# **Synthesis**

Lesson Takeaway: Two-dimensional shapes can be composed to create larger two-dimensional shapes.





#### Ask:

- "How could this shape be built with 3 pattern blocks?"
- "How could this shape be built with 2 pattern blocks?"

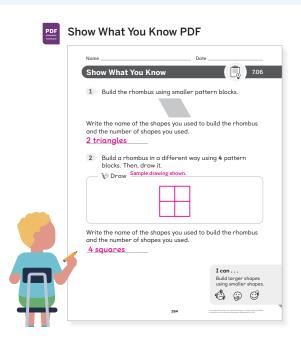
Say, "The shapes used to build the red pattern block can be described as parts of the shape. You will think about parts of shapes in the next lesson."

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

### Show What You Know & Independent | • 5 min



(Optional)



### Today's Goals

- 1. Goal: Compose larger two-dimensional shapes using smaller two-dimensional shapes.
  - In Problems 1 and 2 in the Show What You Know, students composed a rhombus using smaller two-dimensional shapes.
- 2. Goal: Identify the two-dimensional shapes within a larger two-dimensional shape.
  - In Problems 1 and 2 in the Show What You Know, students identified the two-dimensional shapes within a rhombus.
- 3. Language Goal: Describe how smaller two-dimensional shapes are used to compose larger two-dimensional shapes. (Listening and Speaking) ( ELPS 1.E, 2.E, 2.F.

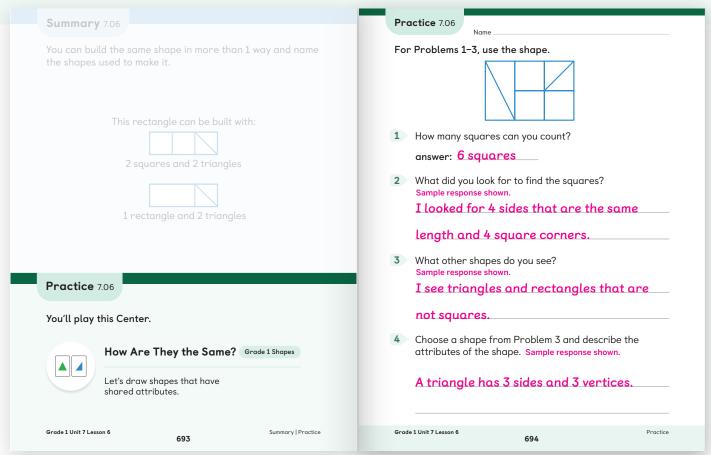


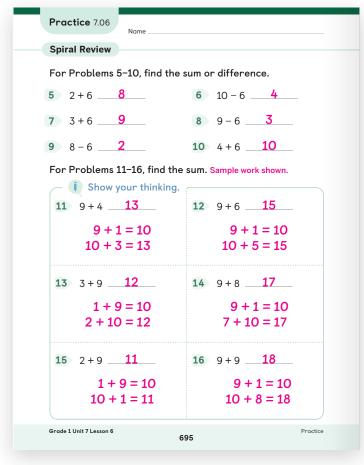
See the last page of the lesson for differentiation and Math Language Development support.

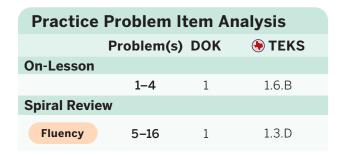
### Practice Independent

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

#### Students using print









# **Introducing the Center** How Are They the Same?, Grade 1 Shapes

**Purpose:** Students develop their understanding of two-dimensional shapes by identifying shared attributes.

### Launch





Display the Center materials, Directions, and Recording Sheet.

Demonstrate how to play How Are They the Same?, Grade 1 Shapes with 2-3 students acting as a small group. While demonstrating: 🙌 ELPS 1.C

- Say, "You will play How Are They the Same? today."
- **Display** Shape Cards A, B, C, D, E, and F faceup.
- Say, "I will choose 2 shapes that have an attribute in common, but I will not tell you what the attribute is that I am thinking of. I pick Shapes E and F." Put away the other 4 cards.
- Say, "We will each draw Shapes E and F on our Recording Sheets."
- Say, "Next, my group members will each think of an attribute that Shapes E and F have in common."
- Use the Think-Pair-Share routine. Ask, "What is an attribute that these shapes have in common?'
- Say (if not yet mentioned during discussion), "Shapes E and F both have 4 sides. They both have corners. Their sides are all straight. They are both closed shapes, which means the sides are all touching."
- Say, "We will each draw a third shape in the My shape drawing column that shares an attribute with Shapes E and F."
- Say, "Now, you will play the Center with a small group. Each player earns 1 point for a shape they draw if it shares an attribute with both shapes on the cards."

# **Monitor**



**Observe** students as they describe the attributes that their shape has in common with the 2 selected shapes. Support students by encouraging them to use the words collected on the Words to Describe Flat Shapes chart.

# Connect



Display Shape Cards L and W.

Use the Think-Pair-Share routine. Ask, "What attribute do these shapes have in

Say (if not yet mentioned during discussion), "They both have 4 corners and they are both shaded white."



**Key Takeaway:** Say, "Shapes can be different and have 1 or more attributes in common."

#### Presentation Screen



#### **Materials**

#### Manipulative Kit:

Distribute straightedges to each small group.

#### Classroom materials:

Display the Words to Describe Flat Shapes chart throughout the activity.

#### **Centers Resources:**

- Display the Directions and Recording Sheet during the Launch.
- Distribute one Recording Sheet to each student.
- Distribute one set of pre-cut Shape Cards (Grade 1) (from prior lessons) to each pair.







Look for students who	For example	Provide support
Almost there  Draw a shape based on how the other shapes look.	I drew a rectangle because it looks like the other shapes.	Support Ask, "How could you use language from the Words to Describe Flat Shapes chart to describe how a rectangle looks like the other shapes?"
Draw one of the selected shapes in a different size.	I drew a small square because it has straight sides, like the big square and the other shape.	Strengthen Ask, "What is a different shape you could draw that has straight sides?"
Draw a new shape that shares a common attribute.	I drew a triangle because it is another shape with corners.	Stretch Ask, "What shapes do you think your group members could be drawing?"

Lesson Goal: Compose larger two-dimensional shapes using smaller two-dimensional shapes.



#### **Support**

Provide targeted intervention for students by using these resources.

**If students** compose a two-dimensional shape that is different than the target shape:

#### Respond:

- Assign the Building Two-Dimensional Shapes Mini-Lesson. | • 15 min
- Revisit Lesson 5.



### Strengthen

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

**If students** compose a rhombus in 1 way and identify triangles as the smaller two-dimensional shapes:

#### Respond:

- Invite students to play these
  Centers. | 15 min
  Match Mine: Pattern Blocks
  Mystery Shapes: Grade K Shapes
  Picture Books: Find and Describe Shapes
- Have students complete Lesson 6
   Practice. | 4 15 min
- Item Bank



### Stretch

Challenge students and extend their learning with these resources.

**If students** compose a rhombus in more than 1 way and identify triangles and squares as the smaller two-dimensional shapes:

#### Respond:

- Invite students to explore the **Sub-Unit 1 Extension Activities.** | 15 min
- Revisit Activity 2 and invite students to respond to the **Stretch** question from the *Differentiation: Teacher Moves* table. | • 5 min





Support, Strengthen, and Stretch learning by assigning these digital resources that adjust to each student's current level of skill and understanding.

• Boost Personalized Learning • Fluency Practice • Math Adventures

### Math Language Development

- Use the Math Language Development Resources for further language support with all your students, including those building English proficiency.
  - English/Spanish Glossary
  - Frayer Model templates
  - Vocabulary routines





#### **Professional Learning**

Reflect on how you can reinforce the work done in this subunit outside of math class. When could you ask students to share the different ways and different places that they see shapes around them?