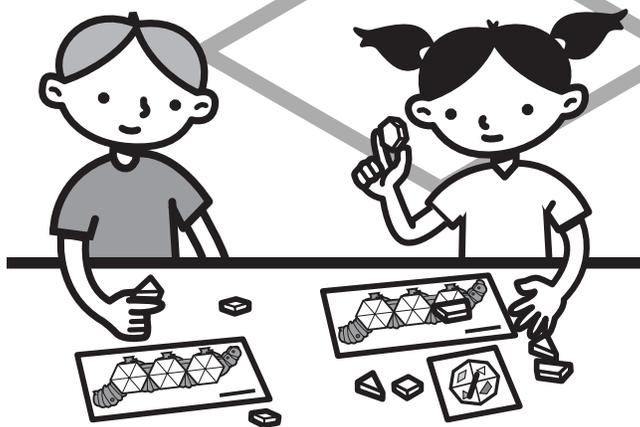


Pattern Block Lessons

to Meet Common Core State Standards

Grades K–2



The MATH LEARNING CENTER

Excerpts From Bridges in Mathematics

PBLCCSSK2

Pattern Block Lessons to Meet Common Core State Standards Grades K–2

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Bridges in Mathematics is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

The Math Learning Center is a nonprofit organization serving the education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based professional development, curriculum, materials, and resources to support learning and teaching. To find out more, visit us at www.mathlearningcenter.org.

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Format: Center	

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Format: Center	

* Pattern Blocks are the only manipulative required for this activity.

Introduction

Pattern Blocks and the Common Core State Standards

Pattern Blocks are a familiar manipulative available in most elementary schools. We've created this Pattern Block Lessons sampler to help you meet the new Common Core State Standards (CCSS) and organized it in two grade level bands, K–2 and 3–5. The lessons are excerpts from the Bridges in Mathematics curriculum, published by The Math Learning Center. We hope you'll find the free resources useful and engaging for your students.

The Common Core State Standards (2010) define what students should understand and be able to do in their study of mathematics. A major goal of the CCSS is building focus and coherence in curriculum materials. The standards strive for greater consistency by stressing conceptual understanding of key ideas and a pacing the progression of topics across grades in a way that aligns with “what is known today about how students' mathematical knowledge, skill, and understanding develop over time.” (CCSSM, p. 4). In addition to the content standards, the CCSSM defines Eight Mathematical Practices that describe the processes—the how teachers will teach, and how students will interact in a mathematics classroom.

Bridges in Mathematics helps teachers meet the challenges of the Content Standards and the Eight Mathematical Practices. During a Bridges lesson, students make sense of mathematics using manipulatives, visual and mental models to reason quantitatively and abstractly. They solve challenging problems daily that develop their stamina to carry out a plan and to present their thinking to their classmates. Students make conjectures and critique the reasoning of others, by asking questions, using tools, drawings, diagrams and mathematical language to communicate precisely. Students develop and use a variety of strategies to become computationally fluent with efficient, flexible and accurate methods that make use of patterns and the structures in operations and properties. They use dimensions, attributes, and transformations to make use of the structures in Number and Geometry. Bridges encourages students to estimate a reasonable answer, and continually evaluate the reasonableness of their solution. This Pattern Block sampler will provide you with examples of lessons from whole group Problems and Investigations and centers called Work Places. In many cases there are suggestions for support and challenge to help you meet the CCSS standards and differentiate your instruction.

Bridges in Mathematics

Bridges in Mathematics is a full K–5 curriculum that provides the tools, strategies, and materials teachers need to meet state and national standards.

Developed with initial support from the National Science Foundation, Bridges offers a unique blend of problem-solving and skill building in a clearly articulated program that moves through each grade level with common models, teaching strategies, and objectives.

A Bridges classroom features a combination of whole-group, small-group, and independent activities. Lessons incorporate increasingly complex visual models—seeing, touching, working with manipulatives, and sketching ideas—to create pictures in the mind’s eye that helps learners invent, understand, and remember mathematical ideas. By encouraging students to explore, test, and justify their reasoning, the curriculum facilitates the development of mathematical thinking for students of all learning styles.

Written and field-tested by teachers, Bridges reflects an intimate understanding of the classroom environment. Designed for use in diverse settings, the curriculum provides multiple access points allowing teachers to adapt to the needs, strengths, and interests of individual students.

Each Bridges grade level provides a year’s worth of mathematics lessons with an emphasis on problem solving. Major mathematical concepts spiral throughout the curriculum, allowing students to revisit topics numerous times in a variety of contexts.

To find out more about Bridges in Mathematics visit www.mathlearningcenter.org

Activity 1



WORK PLACE

Pattern Block Designs

Overview

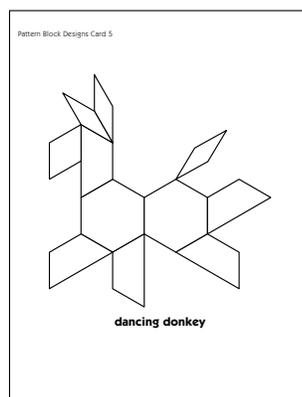
Students use pattern blocks to copy designs from cards, first with real blocks and then if they wish by gluing paper pattern blocks on black construction paper. Students also have the opportunity to create their own designs.

Skills

- ★ Describe objects in the environment using geometric shape names (K.G.1)
- ★ Identify shapes in the environment (K.G.1)
- ★ Identify shapes, regardless of orientation or size (K.G.2)
- ★ Analyze 2-D shapes (K.G.4)
- ★ Use informal language to describe the similarities and differences between different 2-D shapes (K.G.4)
- ★ Compose simple shapes to form larger shapes (e.g., compose triangles to form a rectangle) (K.G.6)

This center will need

- ★ Pattern Block Designs cards (Teacher Masters 1–5, run 1 copy each on cardstock. Color appropriately. Laminate if desired.)
- ★ 3 buckets of pattern blocks
- ★ 6 small containers of paper pattern block shapes
- ★ 20–30 pieces of 6" × 9" black construction paper in a folder or ziplock bag
- ★ 6 small bottles of glue



Work Place Instructions

1. Choose the pattern block design card that you would like to copy.
2. What do you notice about the design? Which shapes will you need? How many? How can you make them fit together?
3. Use your pattern blocks to copy it. Does your design look just the same?
4. If you'd like to make a copy of your work with the paper shapes, find the shape(s) you need. Glue them carefully to the black construction paper to make it look just like the figure you made.
5. Do you want to take your work home to share with your family or leave it at school for others to see?

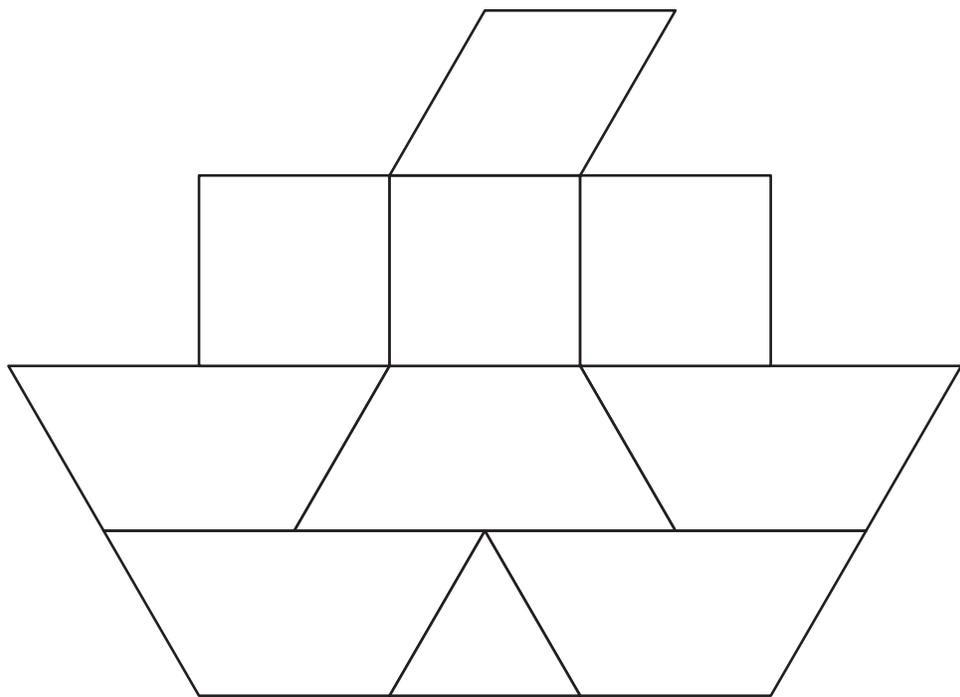
Activity 1 Pattern Block Designs (cont.)

6. Can you use the pattern blocks to create some designs of your own?
7. Would you like to make a copy of one of your original designs?

Instructional Considerations

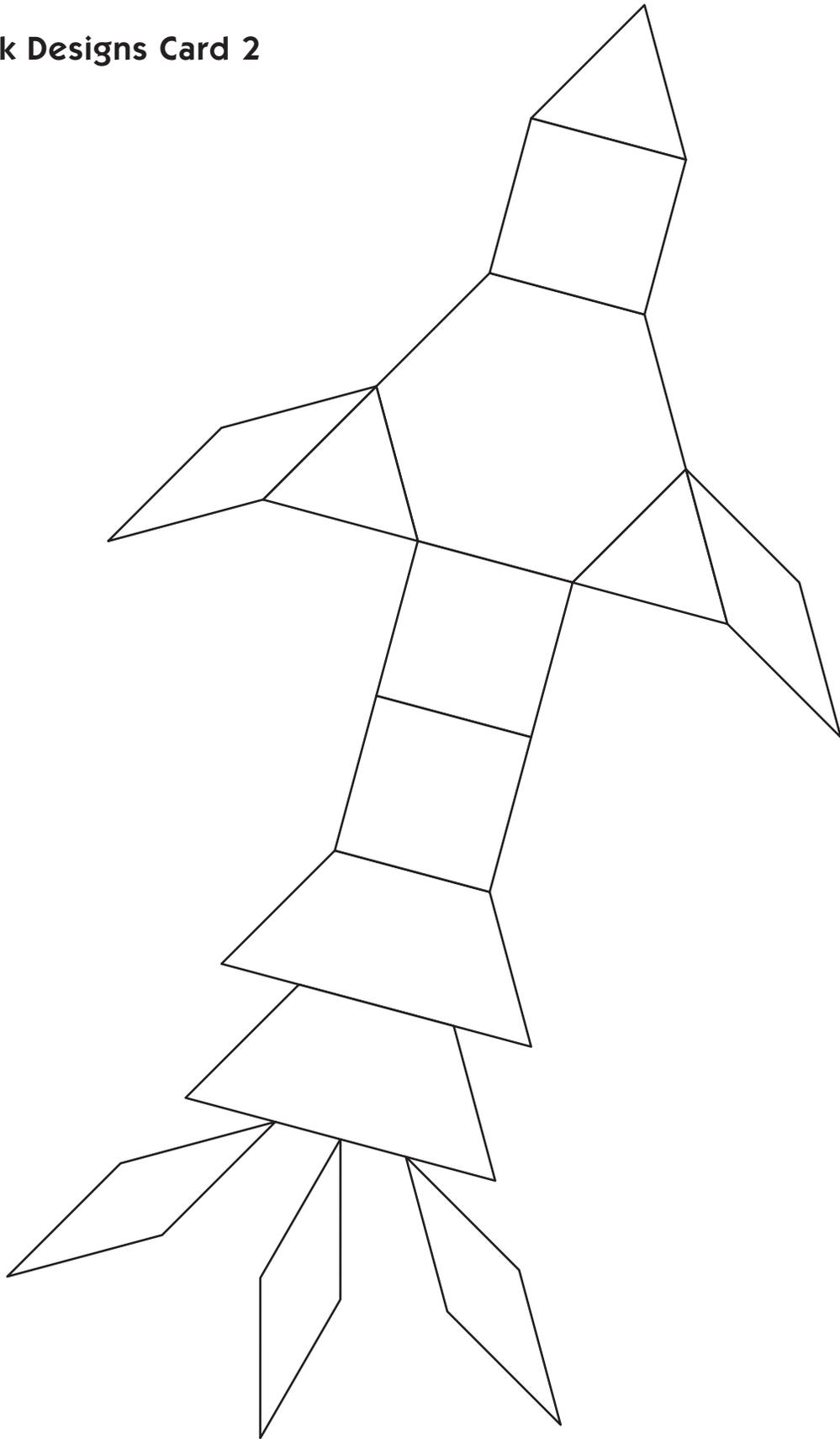
After years of watching five-year-olds work with pattern blocks, we've concluded that some children need a jump start. If your class has been producing magnificent creations with the pattern blocks, you may choose to omit the design cards and see what happens. Can they use the paper shapes to reproduce their own pattern block figures? We've often seen kindergartners joyfully glue the paper shapes on a piece of paper in random fashion, totally unconcerned about relating the work to their actual pattern block creations. Copying a design card with pattern blocks and then reproducing it with the paper shapes helps some children make the connection better. Most are then able to consider the number of blocks, the particular shapes, and the ways the shapes fit together. Some will lack the fine motor skills required to achieve accurate reproductions—you'll need to celebrate all their efforts, and trust that with time their work will improve. Be sure to display their creations on a wall or in a bound class book.

Pattern Block Designs Card I



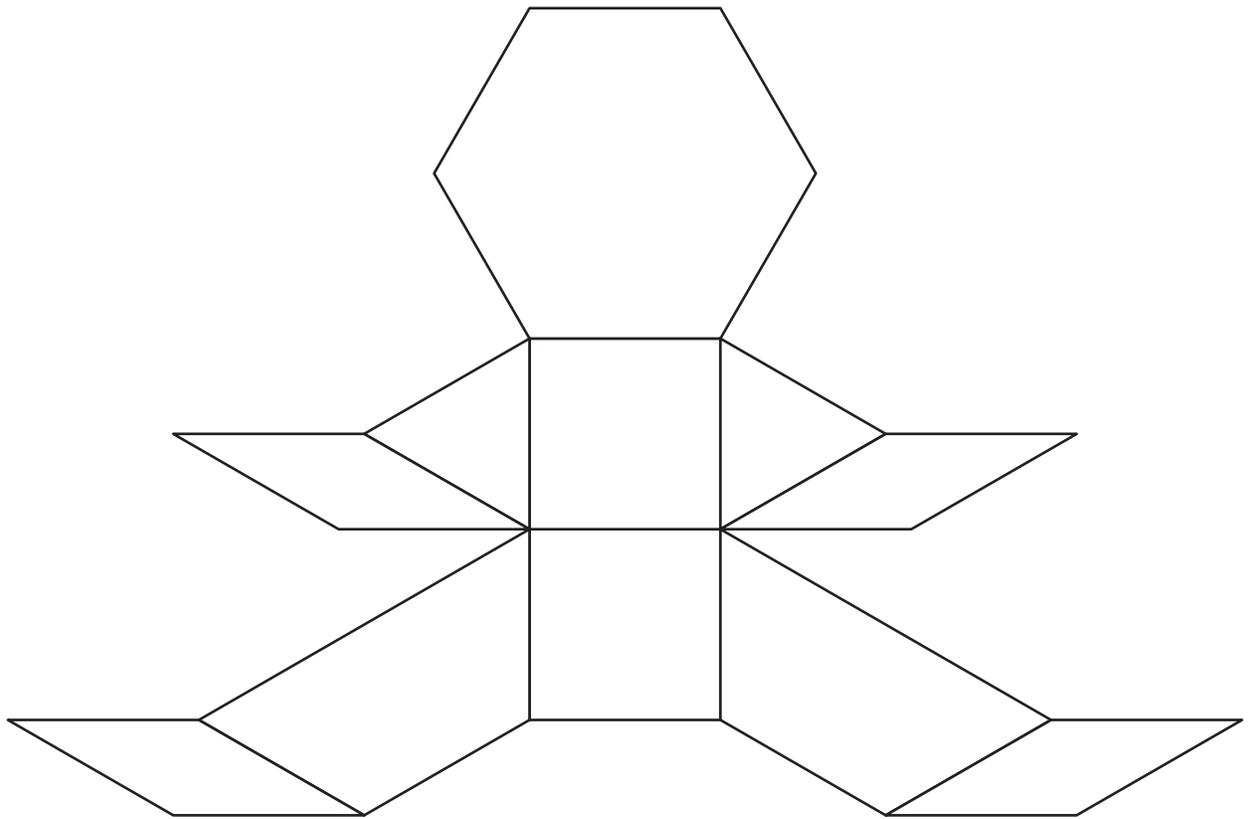
shapely ship

Pattern Block Designs Card 2



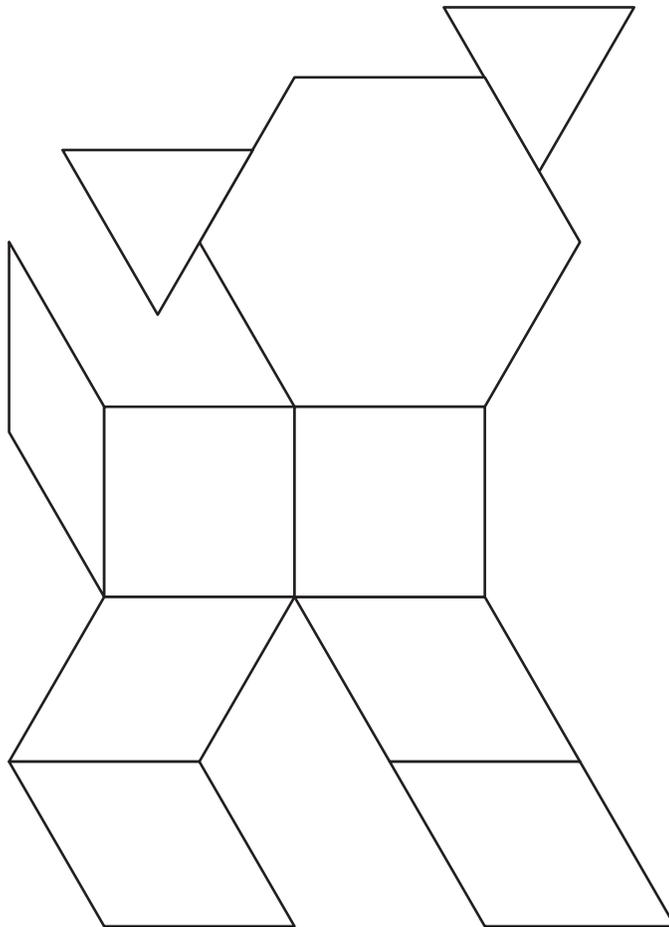
5...4...3...2...1...blast off!

Pattern Block Designs Card 3



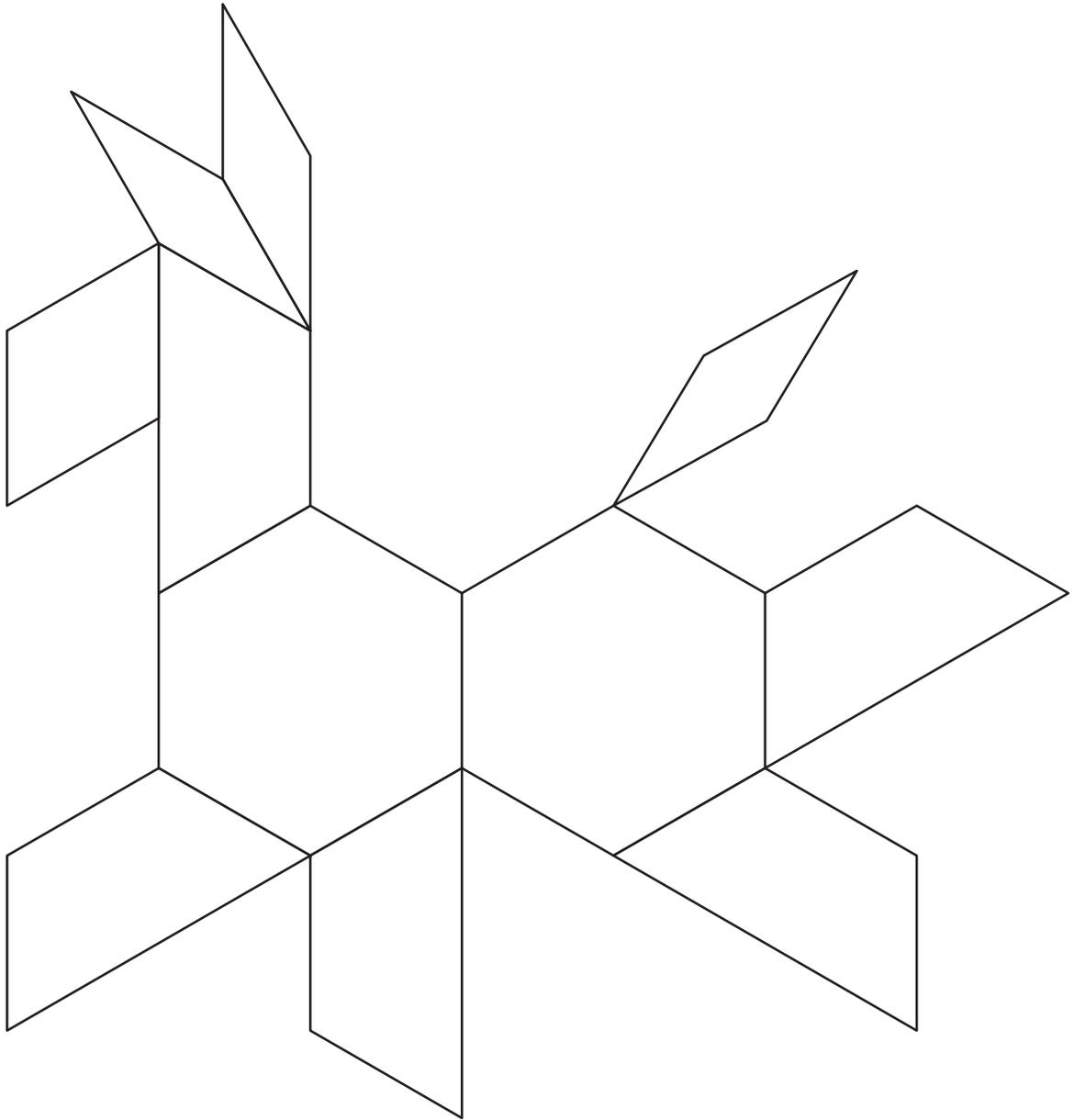
block baby

Pattern Block Designs Card 4



perky pattern puppy

Pattern Block Designs Card 5



dancing donkey

Activity 2



WORK PLACE

Hungry Caterpillars

Overview

Students race to be the first to fill up their triple hexagon caterpillar by placing their pattern blocks in various combinations.

Skills

- ★ Describe objects in the environment using geometric shape names (K.G.1)
- ★ Identify shapes, regardless of orientation or size (K.G.2)
- ★ Compare 2-D shapes (K.G.4)
- ★ Model 2-D shapes in the world by drawing them (K.G.5)
- ★ Compose simple shapes to form larger shapes (e.g., compose triangles to form a rectangle) (K.G.6)

This center will need

- ★ Hungry Caterpillars gameboards (Teacher Master 6 run 3 copies on cardstock. Cut apart on thin lines. Laminate if desired.)
- ★ Hungry Caterpillars spinners (Teacher Master 7, run 1 copy on cardstock. Cut apart on thin lines.)
- ★ 3 single spinner overlays or paper clip spinners
- ★ 3 containers of pattern blocks (Each container should have 20 of each of the following shapes: triangles, blue rhombuses, and trapezoids.)

Work Place Instructions

1. You and your partner will need a spinner and a container of pattern blocks to share. Each of you will need your own caterpillar board.
2. Take turns spinning the spinner. Each time you spin a shape, take a pattern block of the same shape and place it on your caterpillar. (We've noticed that some kindergartners tend to place their shapes at random. This is fine, as long as they fit them into the triangular guidelines.)



3. The first person to fill his or her caterpillar wins. The catch is, you have to fill all the hexagons exactly to go out. If all the space you have left is a rhombus and you spin a trapezoid, you miss your turn and have to try for

Activity 2 Hungry Caterpillars (cont.)

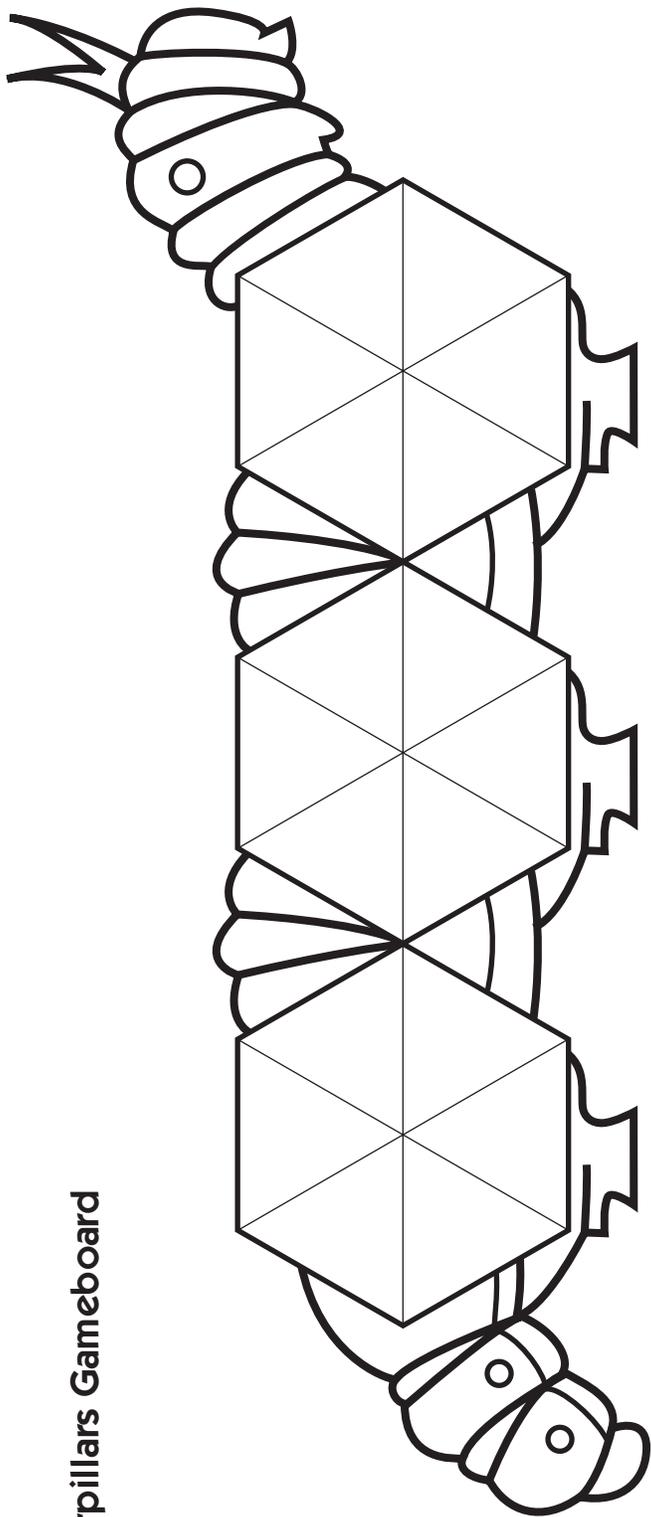
a rhombus or a triangle next time. Continue playing until one person fills his or her caterpillar.

Instructional Considerations

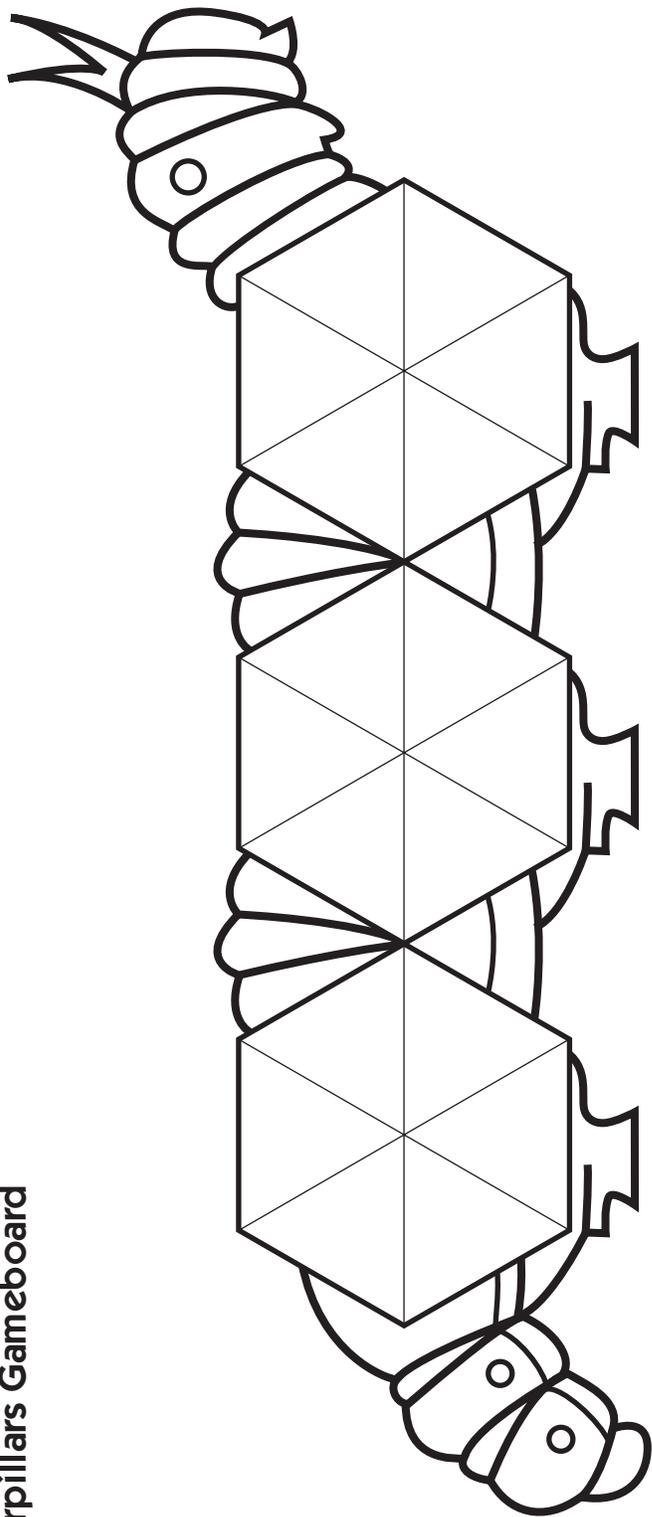
Here are some things you might look for as you watch students play this game and listen to their conversations.

- Do children refer to the shapes by name or by color?
- Do they attempt to fit their shapes into the triangular guidelines of the caterpillar, or do they just set them loosely on the board? If they're attempting to fit the shapes in accurately, can they do so with relative ease?
- Do they seem aware that some shapes fill the hexagonal sections more quickly than others? Are they able to tell how many triangles, rhombuses, and/or trapezoids it takes to fill a hexagon?
- Are they able to take turns and wait patiently as their partner finds his or her blocks and sets them on the gameboard?

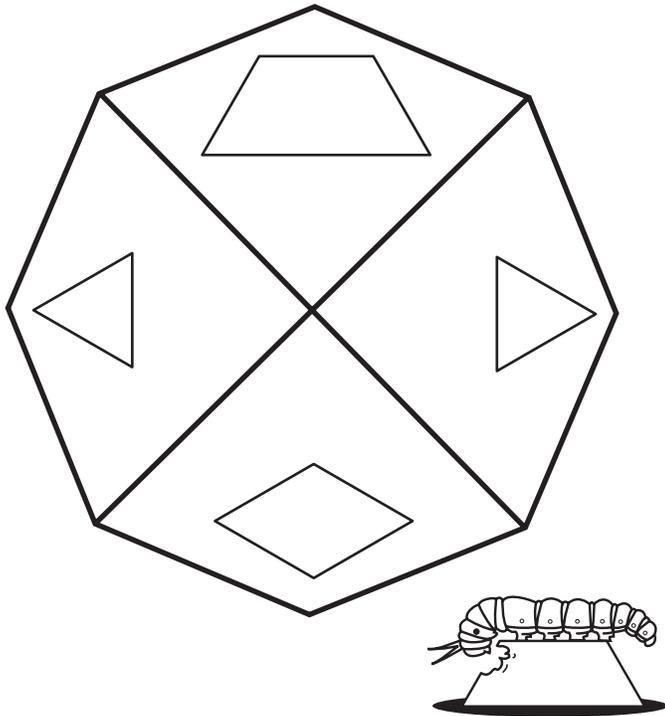
Hungry Caterpillars Gameboard



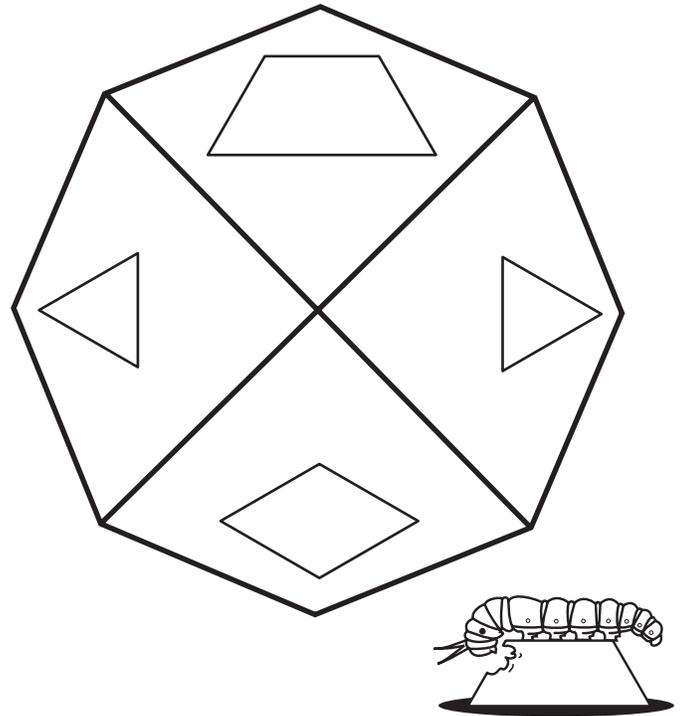
Hungry Caterpillars Gameboard



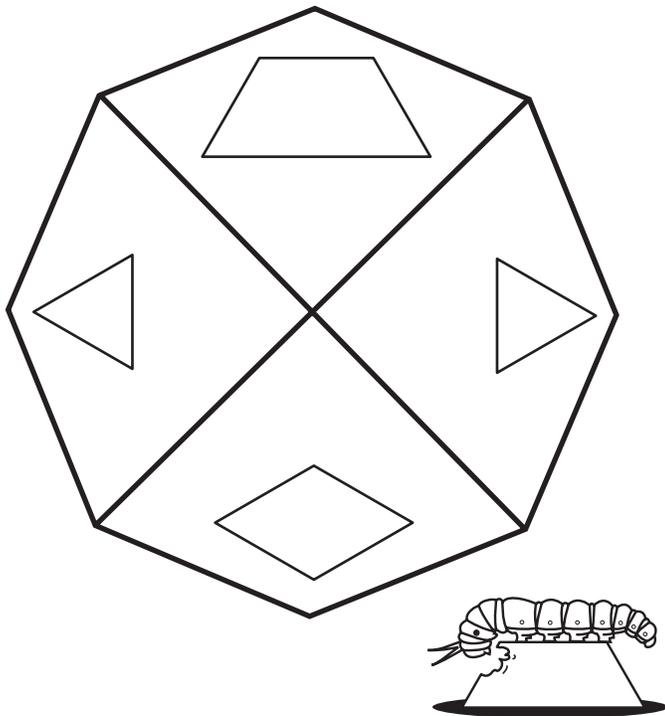
Hungry Caterpillars



Hungry Caterpillars



Hungry Caterpillars



Paper Clip Spinners

Option 1

Insert a pencil into the small loop of a paper clip at the midpoint of the spinner base. Hold the pencil to anchor the paper clip. Spin the paper clip with your free hand or have your partner help you.



Option 2

You will need a brass paper fastener (brad), a paper clip and a $\frac{1}{4}$ " section of straw. Poke a small hole through the midpoint of the spinner base. Poke the brad through the straw and the paper clip and insert it into the hole in the front of the spinner base. Bend each side of the fastener flat against the under side. The section of straw serves as a spacer to ensure the paper clip spins.



Activity 1



WORK PLACE

Pattern Block Reflections

Overview

Students use hinged mirrors and pattern blocks to create and observe the patterns in the reflections. Then they reproduce what they see in the mirror by gluing pattern block shapes on paper.

Skills

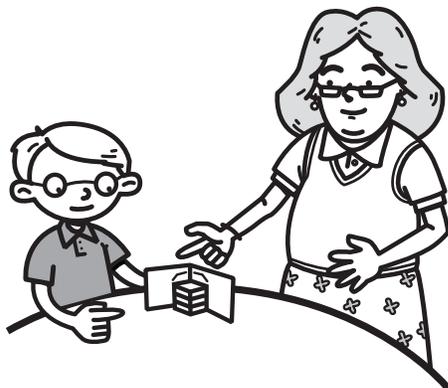
- ★ Demonstrate an understanding of the difference between the defining and non-defining attributes of a 2-D shape (1.G.1)
- ★ Create a composite shape by composing 2-D shapes (rectangles, squares, trapezoids, triangles) (1.G.2)
- ★ Identify lines of symmetry (4.G.3)
- ★ Draw lines of symmetry (4.G.3)
- ★ Identify figures with line symmetry (4.G.3)

This center will need

- ★ pattern blocks
- ★ 8 double-hinged mirrors
- ★ cut paper pattern blocks
- ★ glue
- ★ Pattern Block Reflections record sheets (Teacher Master 1, run 30 copies)

Work Place Instructions

1. Get a hinged mirror, 2 or 3 pattern blocks, a record sheet, some paper pattern blocks, and glue.
2. Tuck one of your pattern blocks into the corner of the hinged mirror and take a peek to see what the reflection looks like. How many of the blocks do you see now? Open the mirror out and then tuck it back up against the block.



Activity 1 Pattern Block Reflections (cont.)

Blackline 5.2
 NAME Jasmine DATE 3/16
Pattern Block Reflections record sheet

3. Copy exactly what you see by gluing down paper pattern block shapes on your record sheet. Create your design in the center of the page so you can add more blocks to it later.
4. Add another block to the one that's already set in the corner of the hinged mirror. Add more paper pattern blocks to your design to match what you see. Your design will grow very quickly. Add another block or two and copy the new reflections each time until you have the pattern block design you want.
5. Set your picture somewhere safe to dry.

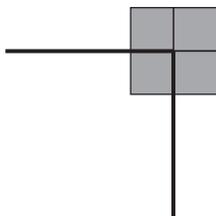
Instructional Considerations

If some children enjoy working with the mirrors and pattern blocks without recording their designs, that's fine. Positioning and gluing the paper shapes may actually get in the way of some students' investigations, although others will adore taking their record sheets home.

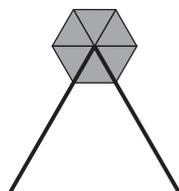
When you're talking to children about their work, there are plenty of opportunities to discuss reflection, symmetry, and number. When you pull a hinged mirror snugly around a green triangle, you see 6 of them in the reflection counting the real one. Does that happen with all of the pattern blocks? (No) Do you see 6 squares including the real one when you pull the mirror

Activity 1 Pattern Block Reflections (cont.)

around the square? (No) How many squares do you see? (4) What about the hexagon (3) or the white rhombus (12)? Is there any way to predict how many of a particular shape you'll see? (The number of shapes you see in a hinged mirror depends on the angle of the shape you've snuggled into the corner. If it's 90° , like the corner of the square block, you'll see 4 blocks (including the real one). If it's 60° , like the corner of the green triangles, you'll see 6 in all—1 real and 5 reflected blocks.

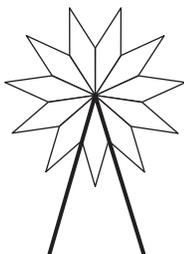


1 real block, 3 reflected blocks



1 real block, 5 reflected blocks

You might notice a pattern to this, which is that the angle of the shape you've snuggled into the corner of the hinged mirror multiplied by the number of blocks (real and reflected) always comes to 360 ($4 \times 90 = 360$, $6 \times 60 = 360$). While this is too abstract for first graders, some might notice that the “skin-nier” the pattern block is, the more times they'll see it reflected in the mirror.



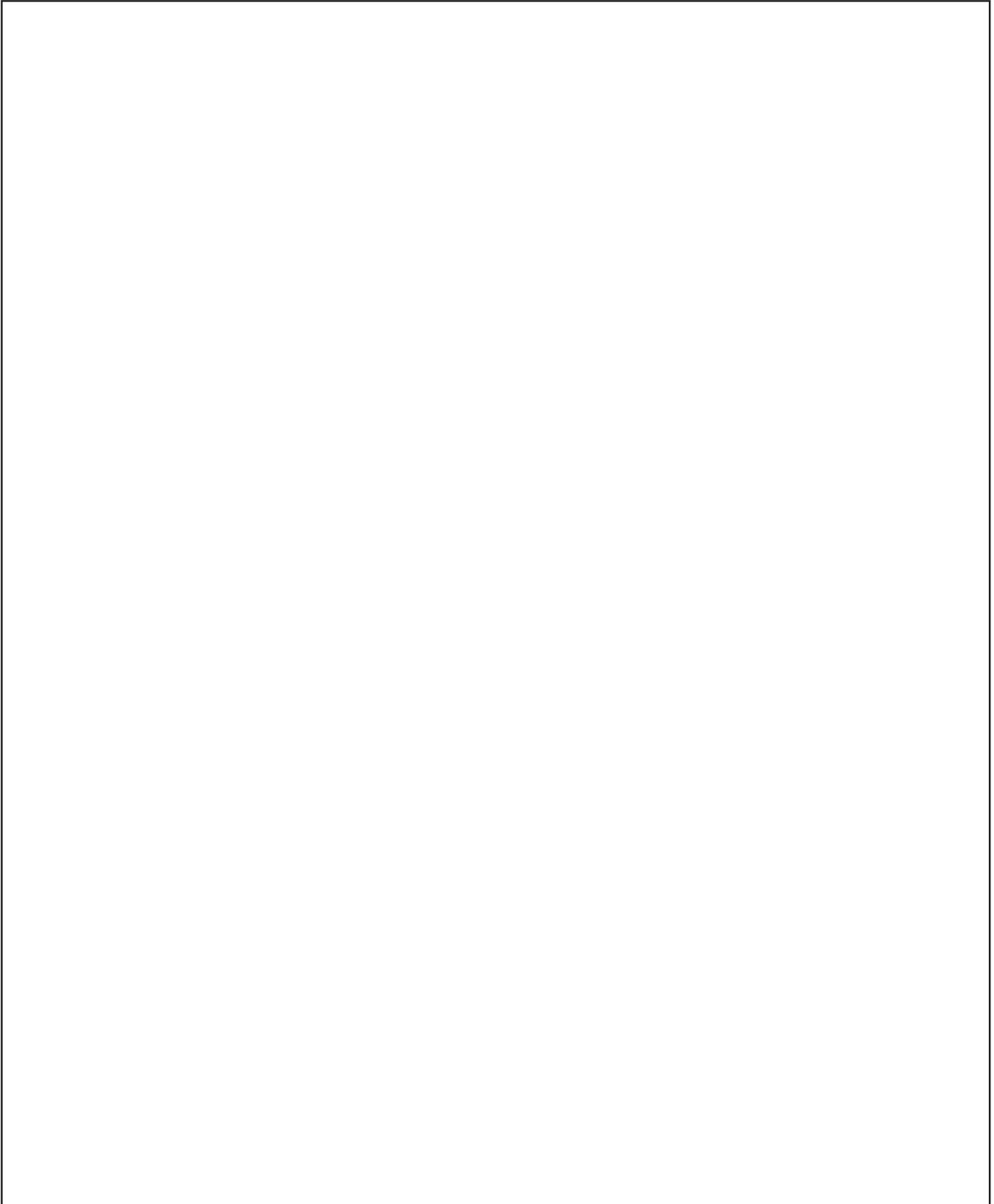
“Wow! When I put the white rhombus in, I can see 12!”

What happens to the number of shapes when you add more blocks to the first block inside the mirror? What happens if you open and close the double-hinged mirror around a shape? (Try it and find out!)

NAME _____

DATE _____

Pattern Block Reflections record sheet



Activity 2



WORK PLACE

Last Shape In Wins

Overview

Students pairs take turns placing one pattern block at a time on a large rhombus shaped gameboard, using the guidelines on the board to position the pieces.

Each new shape needs to touch one of shapes already on the board. The player who places the piece that completes the rhombus wins.

Skills

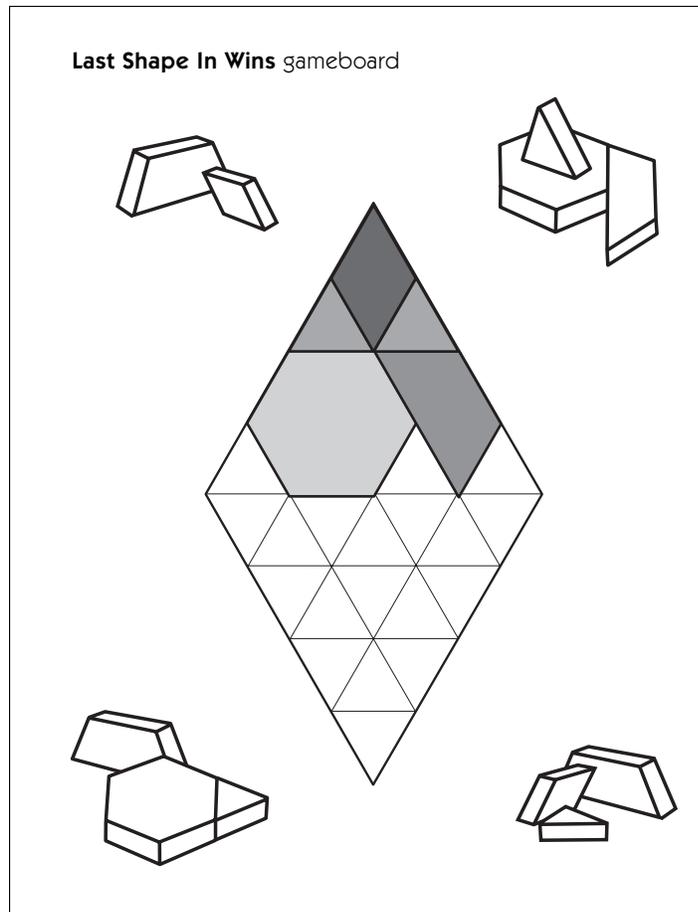
- ★ Demonstrate an understanding of the difference between the defining and non-defining attributes of a 2-D shape (1.G.1)
- ★ Create a composite shape by composing 2-D shapes (rectangles, squares, trapezoids, triangles) (1.G.2)

This center will need

- ★ pattern blocks—hexagons, trapezoids, triangles, and blue rhombuses only (Organize sets of pattern blocks—4 hexagons and 12 each of the other shapes—into 3 ziplock bags so partners can easily get what they need.)
- ★ Last Shape In Wins gameboards (Teacher Master 2, run 3 copies. Laminate if desired.)

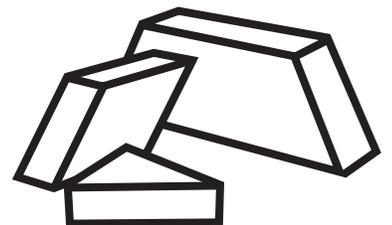
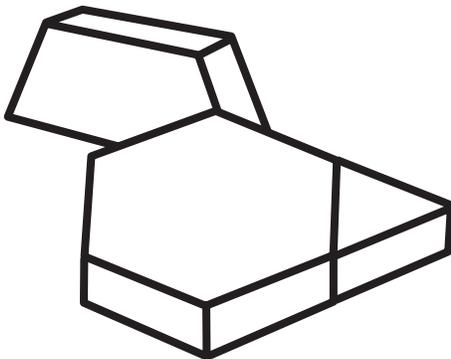
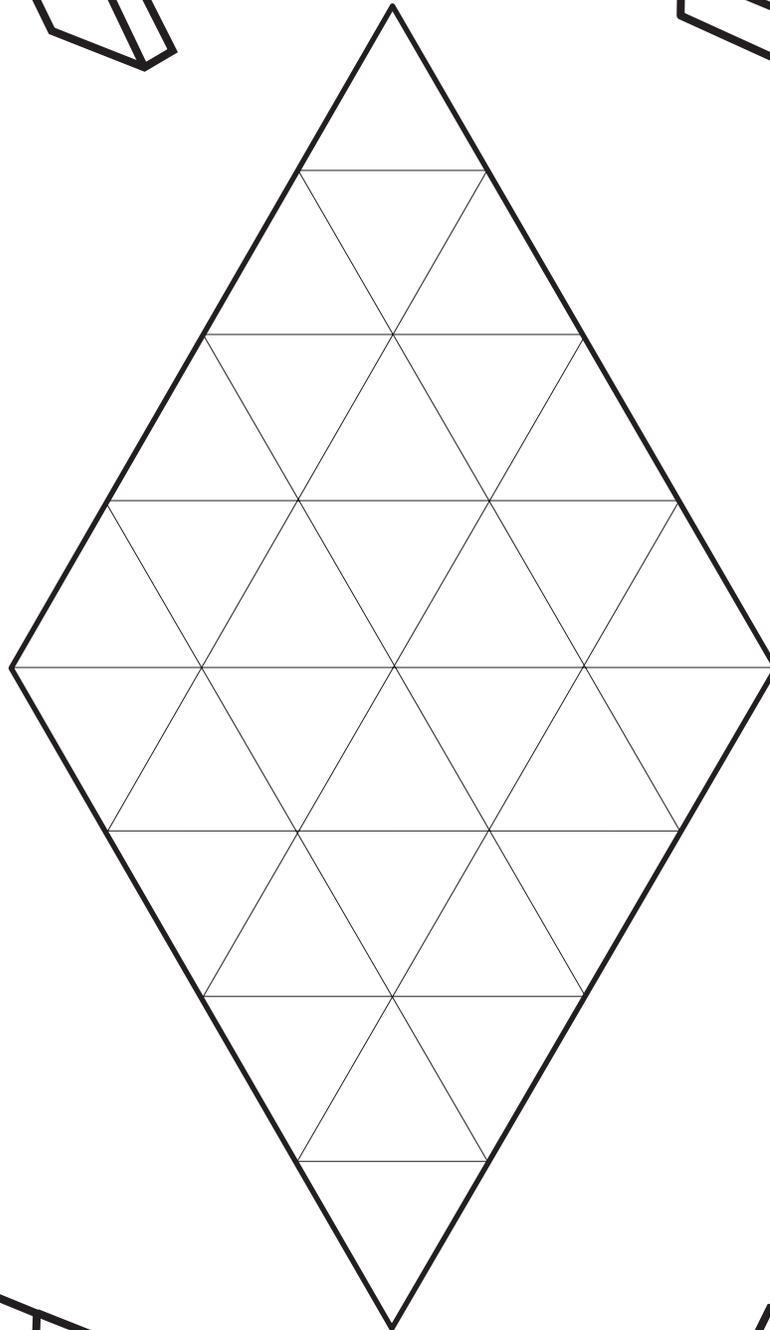
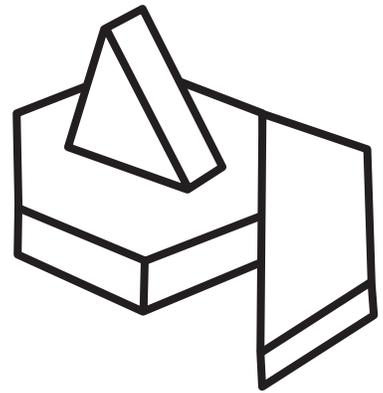
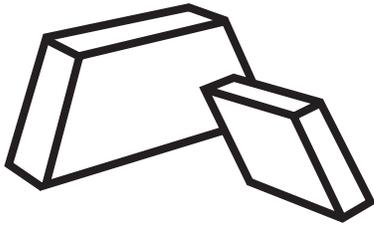
Work Place Instructions

1. Get a partner, some pattern blocks, and a gameboard. Decide who will go first and who will go second.
2. Take turns placing blocks on the gameboard. The first block can be placed anywhere; after that each new block has to touch at least one of the blocks already on the gameboard. You may use any of the 4 shapes. You must take your turn every time, down to the very end. The object of the game is to be the person who gets to complete the big rhombus by fitting in the final shape.

Activity 2 Last Shape In Wins (cont.)**Instructional Considerations**

The strategizing that may go on in the last few moves of this game is similar to chess in that a player needs to envision several different possibilities, imagining what will happen if she places a trapezoid on the board instead of a rhombus, or a triangle instead of a hexagon. Not all of your students will spend a lot of time agonizing over the last few moves, although more might if you continue to challenge them to develop winning strategies.

Last Shape In Wins gameboard



Activity 1



WORK PLACE

Caterpillar Fill & Add

Overview

In this game, students take turns rolling dice and adding the two numbers to determine how many triangles they can fill in on their gameboards. Each triangle is worth 1. A roll of 3 and 5 means the player will be able to fill in 8 triangles (or their equivalent in other shapes) on their board. The first player to fill their caterpillar exactly wins.

Skills

- ★ Recognize shapes having specified attributes (e.g., a certain number of angles or congruent faces) (2.G.1)
- ★ Identify triangles, quadrilaterals and hexagons (2.G.1)
- ★ Partition a hexagon into 2 equal parts (2.G.3)
- ★ Partition a hexagon into 3 equal parts (2.G.3)
- ★ Use the terms halves and half of to talk about the 2 equal parts (2.G.3)
- ★ Use the terms thirds and a third of to talk about the 3 equal parts (2.G.3)
- ★ Fluently add with sums to 20 using mental strategies (2.OA.2)
- ★ Recall from memory all sums of two 1-digit numbers (2.OA.2)

Work Place Instructions

1. Get a partner, two gameboards, one record sheet to share between the two of you, a pair of dice, some pattern blocks, and some crayons.
2. Each of you needs a gameboard and some pattern blocks right in front of you; the record sheet should be placed between you so that you can take turns recording your moves. You will both work on the same record sheet.

This center will need

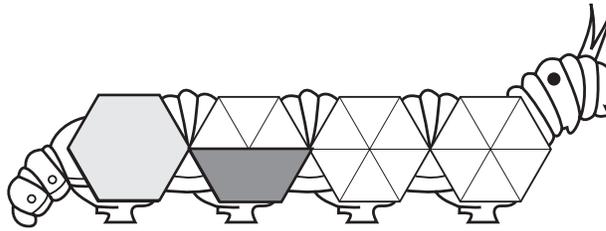
- ★ pattern blocks—hexagons, trapezoids, triangles, and blue rhombuses only (You may want to organize sets of pattern blocks into 3 ziplock bags so partners can reach into the Work Place basket easily and get what they need. Each set should have about 10 hexagons and 20 each of the other shapes.)
- ★ 6 Caterpillar Fill & Add gameboards (Teacher Master 1, run 3 copies on cardstock. Cut apart on thin lines. Laminate if desired)
- ★ Caterpillar Fill & Add record sheet (Teacher Master 2, run 30 copies and place in a folder)
- ★ 3 pairs of dice (1 of each pair should be numbered 0–5, the other 1–6) See note.
- ★ red, green, yellow, and blue crayons

.....
Note 0–5 dice can be made by numbering a blank wooden cube with a narrow-tipped permanent marker.

Activity 1 Caterpillar Fill & Add (cont.)

3. Take turns rolling the dice, adding the two numbers that come up, and taking that many pattern blocks in triangles or their equivalent in other shapes (if you roll $2 + 4$, you can take 6 triangles, 1 hexagon, 3 diamonds, 2 trapezoids, or any combination of blocks equivalent to 6 triangles). Place the blocks on your gameboard, and record your move on the record sheet each time it's your turn. The object of the game is to be the first to fill the caterpillar exactly.

Here's what someone who rolled $5 + 4$ on his or her first turn might do:



Teacher Master 2 Run 50 copies.

NAME Alyssa DATE _____

Caterpillar Fill & Add record sheet

NAME Colby DATE _____

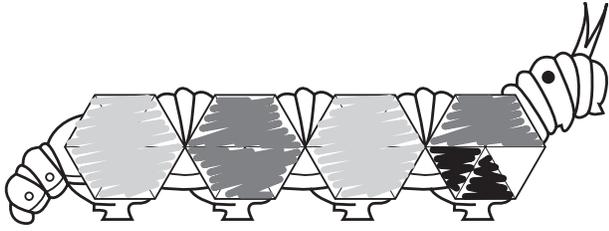
Caterpillar Fill & Add record sheet

"I got $5 + 4$ on my first roll. That's 9. I'm going to take a hexagon—that's 6, and a trapezoid—that's 3. I'll put those blocks on my gameboard, and then color in what I did on the record sheet."

Activity 1 Caterpillar Fill & Add (cont.)

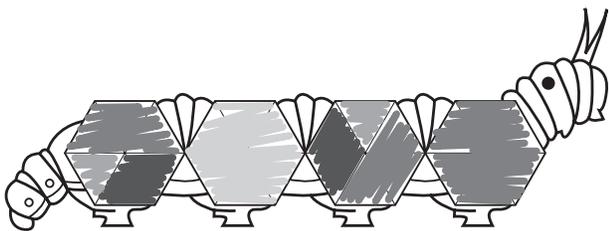
4. Keep playing back and forth until one of you fills the caterpillar exactly. Once you're down to 6 or fewer triangles to fill, you can opt to roll only one die instead of two. If you roll more than the number of triangles you have left to fill, you lose your turn and you don't write anything down. In the end, you may have to trade the dice (or die) back and forth a few times until someone finally gets the number he or she needs. Be sure to record your score each time you can make a play, and total the numbers at the end, even if you don't make it to 24.

Teacher Master 2 Run 50 copies
 NAME Alyssa DATE _____
Caterpillar Fill & Add record sheet



9 + 6 + 8 = 23

NAME Colby DATE _____
Caterpillar Fill & Add record sheet



4 + 10 + 7 + 3 = 24 Colby won

5. When you're finished, dump the pattern blocks off your gameboards and play the game again so that both you and your partner have a record sheet to put in your folders.

Instructional Considerations

Although children will have played this game once at a whole-group level, you may have to model it more than once as a Work Place. This is partly because there are several steps. Players have to roll the dice, figure the total, and take an equivalent amount in pattern blocks. Then they have to set the

Activity 1 Caterpillar Fill & Add (cont.)

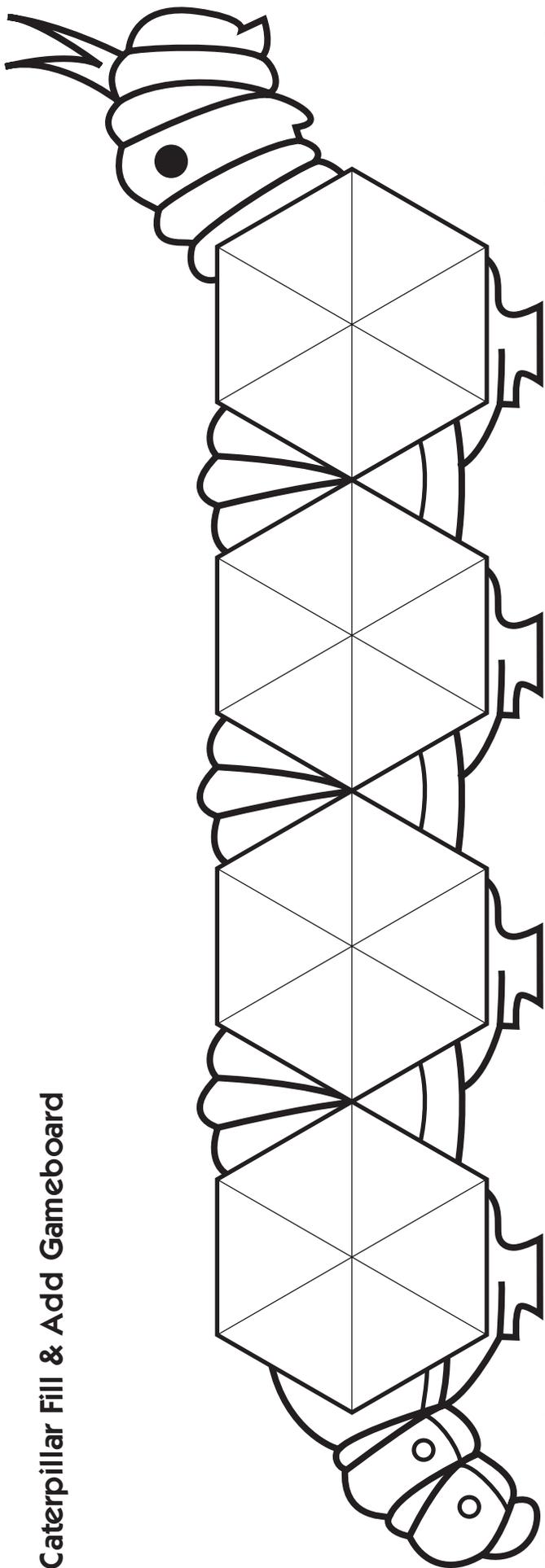
blocks on their gameboards, and finally, color in their record sheets each time it's their turn.

It will be very important for children to understand that they don't have to fill each section of the caterpillar before they move on to the next. If, for instance, they have 5 triangles filled in on the first section of their caterpillar and they roll a 6, they can take the 6 as a hexagon and fill the second section, waiting until their third or fourth turn to go back and fill in the remaining triangle on the first section. Some children, of course, will want to fill their caterpillar sections completely as they go, and may even opt to take all of their scores in triangles each time. You might want to spend some time observing at this Work Place or looking over children's record sheets to see whether they stick with triangles or move into taking equivalent amounts with larger blocks.

**CHALLENGE**

For challenge, students may write multiplication sentences like $(3 \times 2) + (3 \times 6) = 24$ or whatever grouping structures match the area of their shapes.

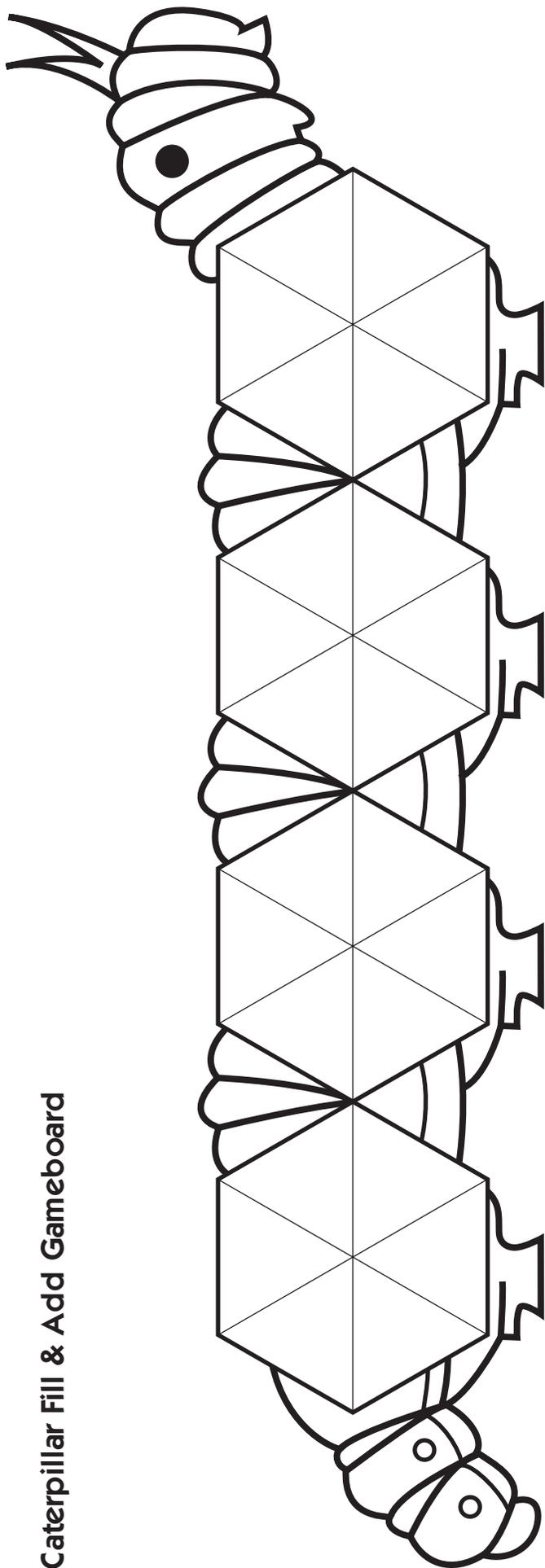
Caterpillar Fill & Add Gameboard



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Caterpillar Fill & Add Gameboard



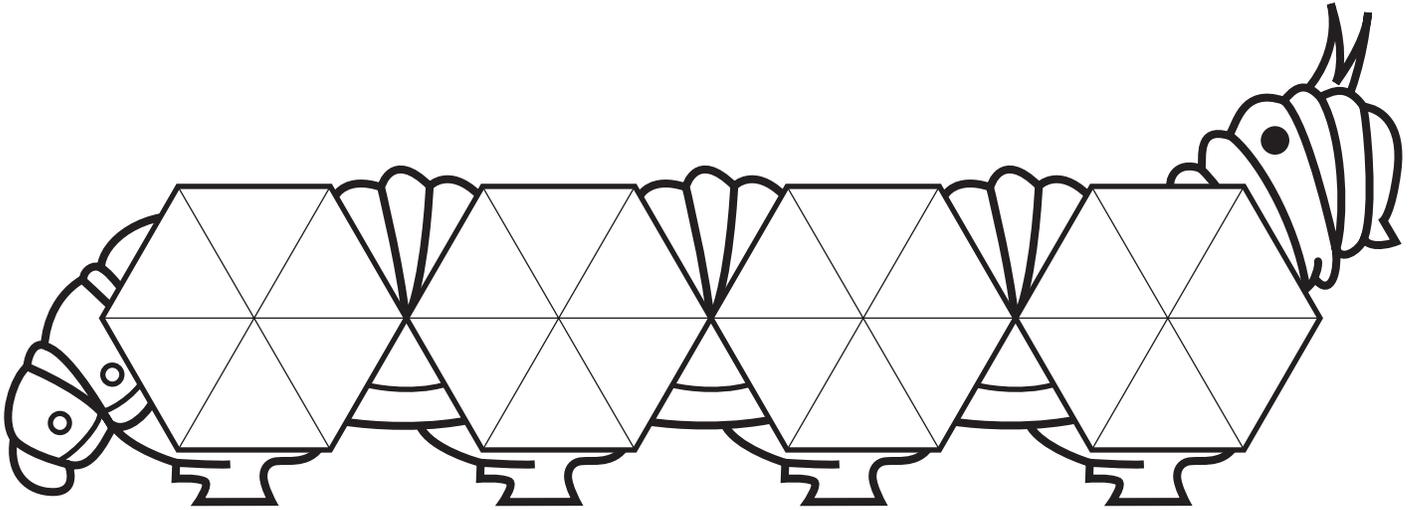
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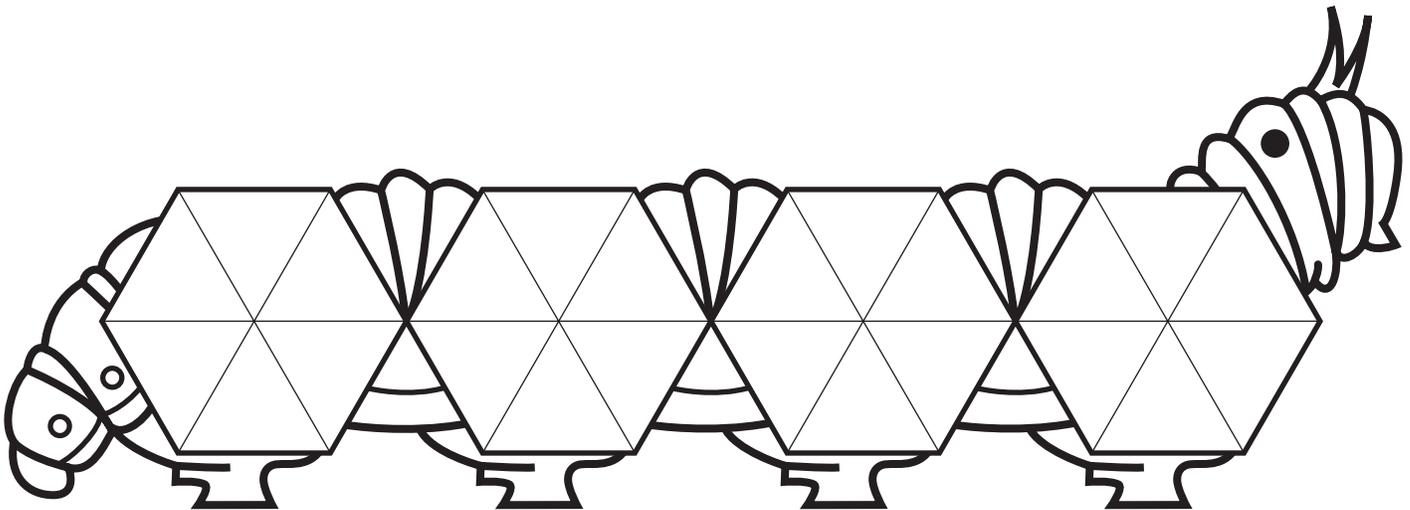
Caterpillar Fill & Add record sheet



NAME _____

DATE _____

Caterpillar Fill & Add record sheet



Activity 2



WORK PLACE

Build-4-Less

Overview

Partners use pattern blocks to figure out how to build shapes shown on a problem sheet using the fewest blocks possible. They record their solutions by coloring the picture on a record sheet.

This center will need

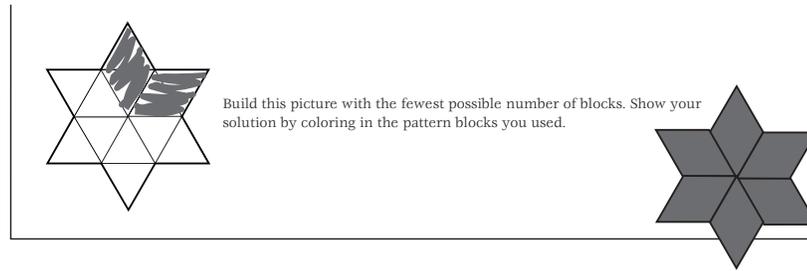
- ★ pattern blocks—hexagons, trapezoids, triangles, and blue rhombuses only
- ★ Build-4-Less sheets 1–6 (Teacher Masters 3–8, run 15 copies of each sheet)
- ★ red, green, yellow, and blue crayons

Skills

- ★ Recognize shapes having specified attributes (e.g., a certain number of angles or congruent faces) (2.G.1)
- ★ Draw shapes having specified attributes (e.g., a certain number of angles or congruent faces) (2.G.1)
- ★ Identify triangles, quadrilaterals, and hexagons (2.G.1)
- ★ Partition a hexagon into 2 equal parts (2.G.3)
- ★ Partition a hexagon into 3 equal parts (2.G.3)
- ★ Use the terms halves and half of to talk about the 2 equal parts (2.G.3)
- ★ Use the terms thirds and a third of to talk about the 3 equal parts (2.G.3)
- ★ Describe a whole as 2, 3, 4 of two, three, four equal parts (2.G.3)
- ★ Demonstrate an understanding that equal parts of identical wholes do not have to be the same shape (2.G.3)
- ★ Fluently add with sums to 20 using mental strategies (2.OA.2)
- ★ Recall from memory all sums of two 1-digit numbers (2.OA.2)

Work Place Instructions

1. Get some pattern blocks and one of the problem sheets from the folder. Work with the blocks until you figure out how to make the shape(s) on the sheet with the fewest blocks possible. You will probably have to experiment for awhile and try several different arrangements until you find the one that uses the fewest blocks. You can build directly on the sheet itself or off to the side. Build this picture with the fewest possible number of blocks. Show your solution by coloring in the pattern blocks you used.

Activity 2 Build-4-Less (cont.)

2. When you think you have found a way to make the shape with the fewest blocks, record your solution by coloring in the picture on the sheet. If you have built directly on the shape, you may remove your blocks one at a time, coloring as you go, so you don't forget your own arrangement. You may also slide your blocks to the side and rearrange them so you can copy from the blocks to the sheet.

Instructional Considerations

There are six sheets in this set, and you'll need to decide how many sheets you want to require for each visit. Some of the sheets are fairly challenging, and each requires a fair amount of work in building and rebuilding, and then coloring to show a solution. Perhaps you'll want to vary the requirement depending on the student. Here is the answer key for the six sheets. Please note that there are two solutions for one of the problems.

ANSWER KEY FOR BUILD-4-LESS SHEETS**Sheet 1**

- The trapezoid: 4 (4 trapezoids)
- The star: 6 (6 rhombuses or 3 trapezoids and 3 triangles)

Sheet 2

- The large rhombus: 5 (4 trapezoids and 1 hexagon)

Sheet 3

- The dog: 9 (5 rhombuses, 2 hexagons, 1 trapezoid, and 1 triangle)

Sheet 4

- The large trapezoid: 7 (2 hexagons and 5 trapezoids)

Sheet 5

- The large hexagon: 12 (6 hexagons and 6 trapezoids)

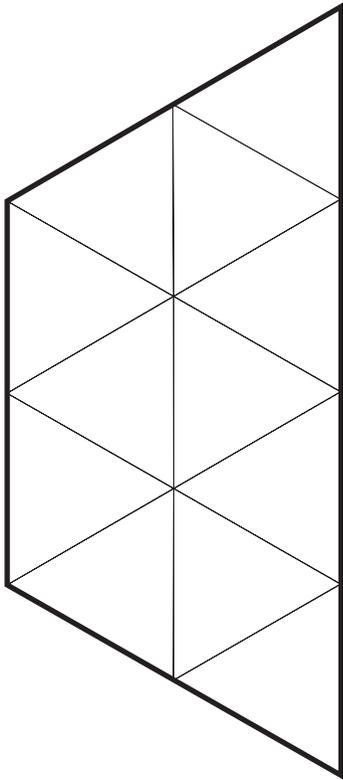
Sheet 6

- The large star: 13 (7 hexagons and 6 triangles)

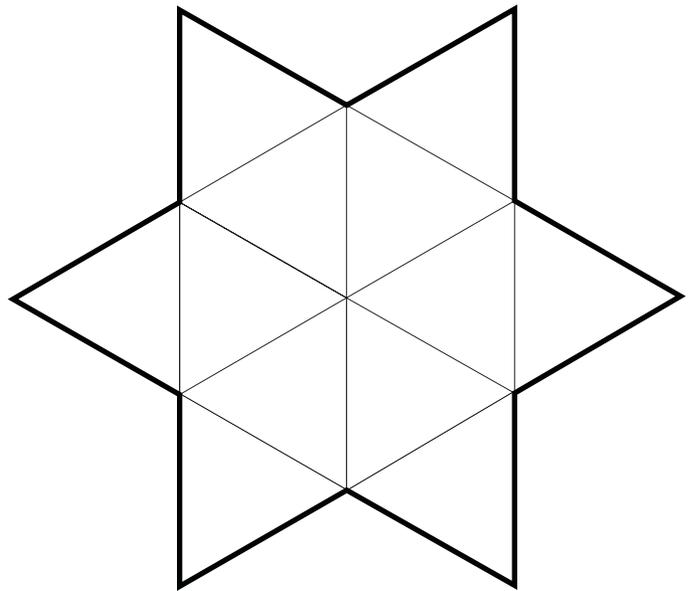
***Note** You might want to post a chart that simply states the minimum number blocks for each shape. We find that some of our students are able to find the solutions above more easily if they know how many total blocks a figure requires, without knowing exactly how many triangles, hexagons, trapezoids, and/or rhombuses are needed for that figure.*

NAME _____ DATE _____

Build-4-Less sheet 1



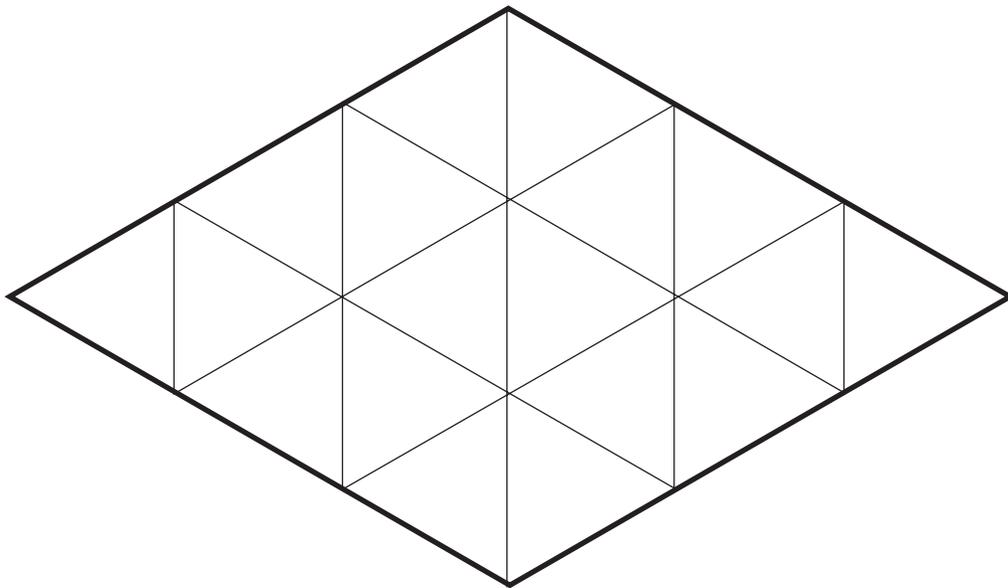
Build this picture with the fewest possible blocks.
Show your solution by coloring in the pattern blocks you used.



Build this picture with the fewest possible blocks. Show your solution by coloring in the pattern blocks you used.

NAME _____ DATE _____

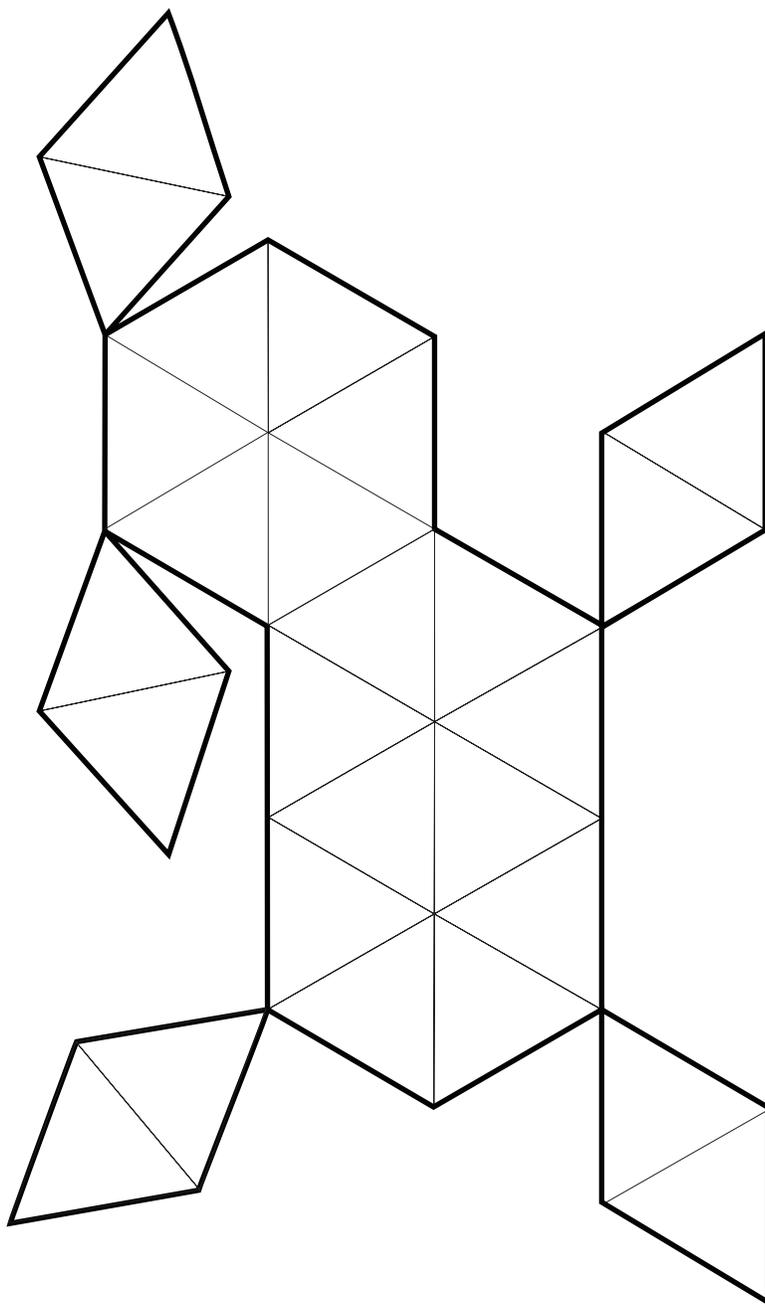
Build-4-Less sheet 2



Build this picture with the fewest possible blocks. Show your solution by coloring in the pattern blocks you used.

NAME _____ DATE _____

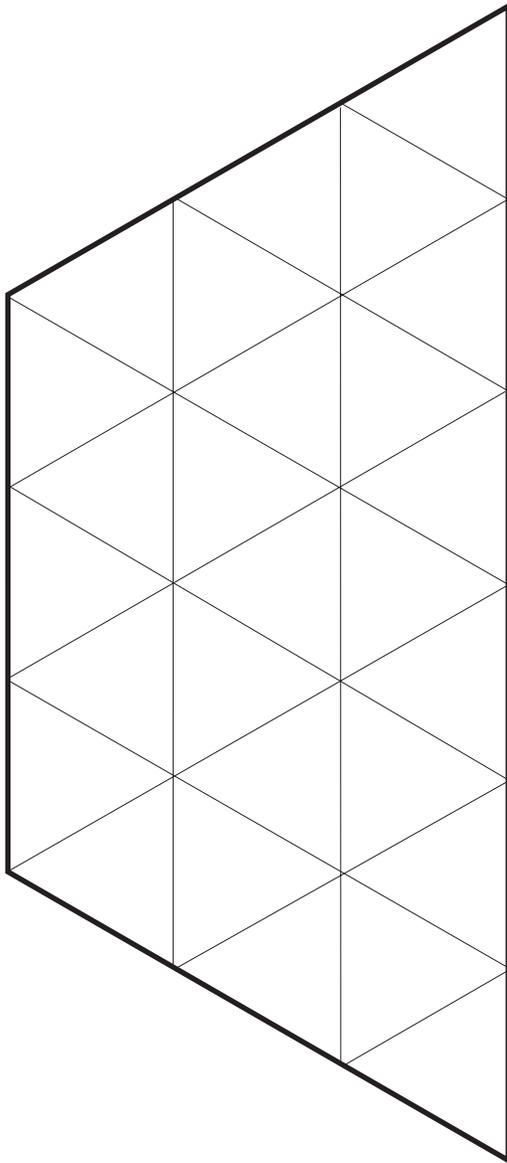
Build-4-Less sheet 3



Build this picture with the fewest possible blocks. Show your solution by coloring in the pattern blocks you used.

NAME _____ DATE _____

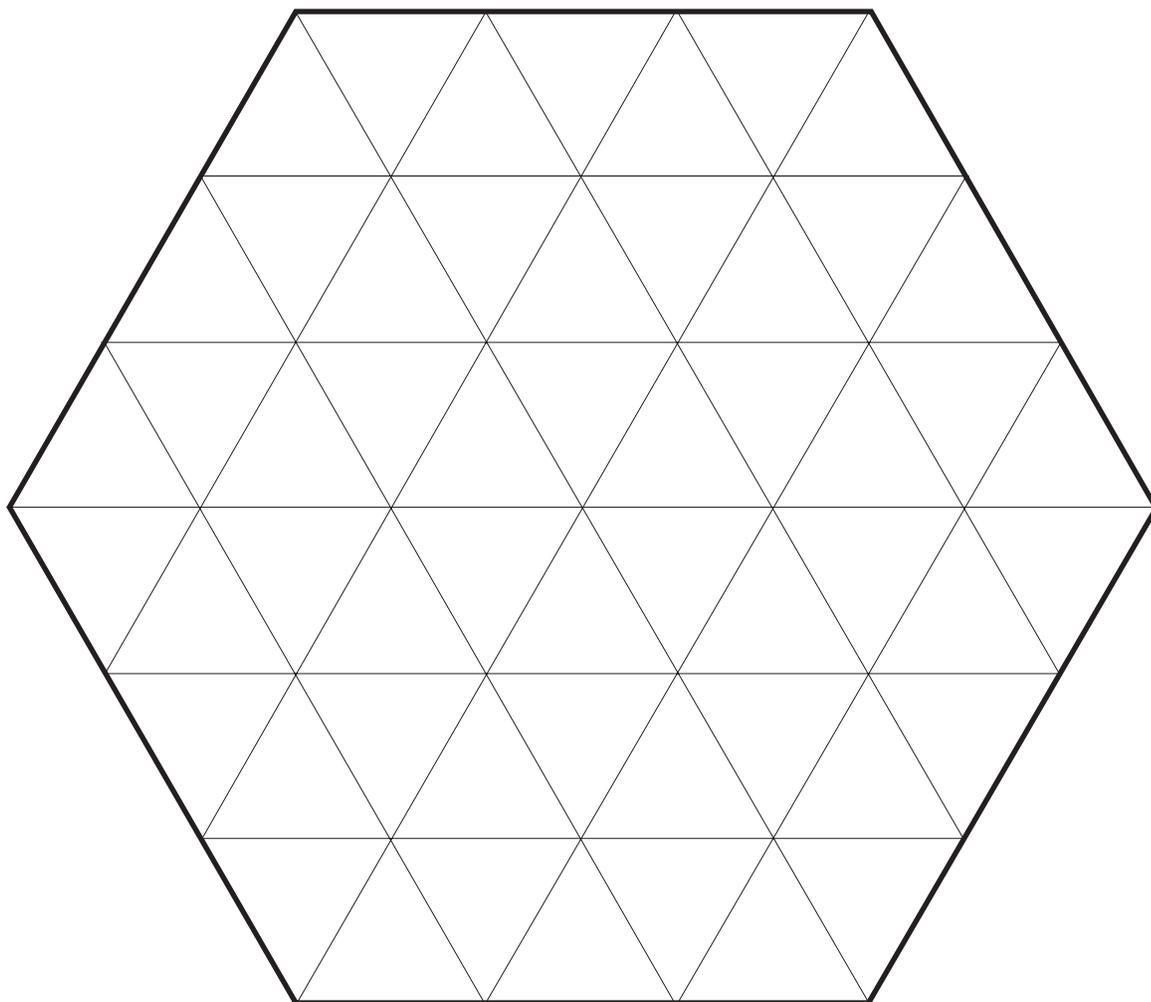
Build-4-Less sheet 4



Build this picture with the fewest possible blocks. Show your solution by coloring in the pattern blocks you used.

NAME _____ DATE _____

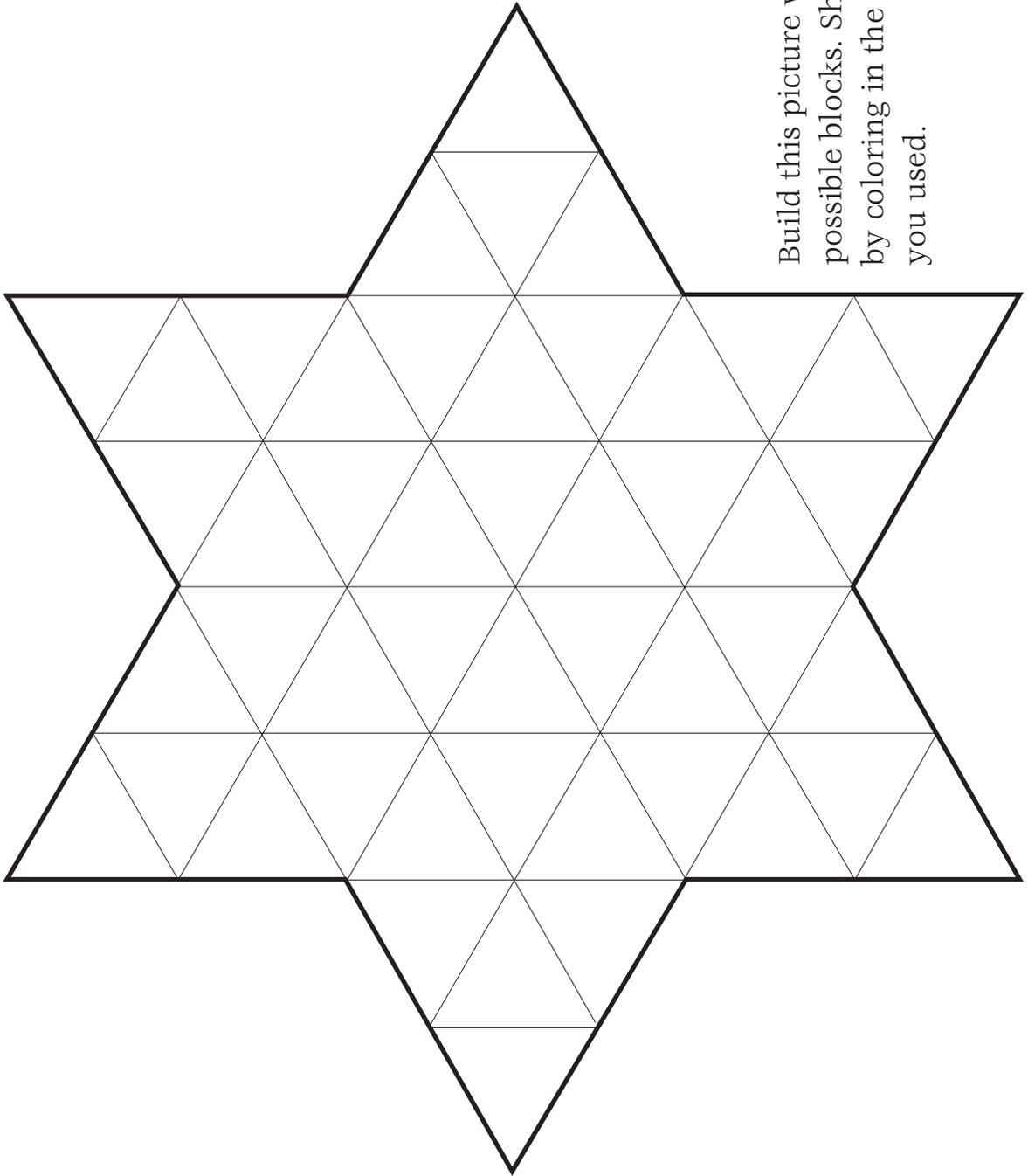
Build-4-Less sheet 5



Build this picture with the fewest possible blocks. Show your solution by coloring in the pattern blocks you used.

NAME _____ DATE _____

Build-4-Less sheet 6



Build this picture with the fewest possible blocks. Show your solution by coloring in the pattern blocks you used.