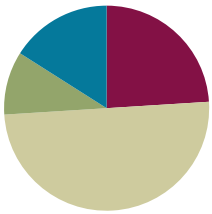
Lesson 7

Objective: Compose simple shapes to form a larger shape described by an outline.

Suggested Lesson Structure



Fluency Practice	(12 minutes)
Application Problem	(5 minutes)
Concept Development	(25 minutes)
Student Debrief	(8 minutes)
Total Time	**(50 minutes)**

Fluency Practice (12 minutes)

- Getting Ready for First Grade! (12 minutes)

Getting Ready for First Grade! (12 minutes)

Materials: (S) Folders, resealable plastic bags, personal white board, copies of Sprints, personal Rekenreks (made in Module 5), fluency kit (Fluency Template), and other consumable fluency materials

Generate a conversation about the necessity of practicing math over the summer to maintain skills students have learned in kindergarten. Emphasize the importance of getting ready for first grade, and tell students that they will get some things today to take home and use over the summer. Tell students that they will receive a letter telling parents and families how they can help.

Select materials in advance based on individual students' needs. Take into consideration the amount of support students can be expected to receive at home, and choose activities that can be done somewhat independently. Distribute copies of Sprints and Fluency Activity Sheets. Demonstrate how to use them in a personal white board so that they can be used multiple times over the summer.

Consider enlisting the help of parents or older students to assemble students' materials into packets. Hold students' packets until Lesson 8 so that they can share them with guests at the culminating activity!

Application Problem (5 minutes)

Materials: (S) Personal white board, ruler

T: Pretend you are having a party. Draw a big rectangle on your personal white board to show a delicious pretend chocolate cake.

T: Now, use your ruler, and draw lines to show how you would slice it to share the cake with the party guests. Where would you draw the lines? How many pieces did you make?

T: Compare your cake to your partner's. Did you both do it the same way? Who has more pieces?

Note: Thinking about decomposing the rectangle in the problem leads the way to the creation of square puzzles in today's lesson.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Help English language learners discuss their work with a partner by providing them with sentence starters, such as, "I have more pieces because…" The sentence starters not only help them communicate but also hold students accountable for staying on topic.

Concept Development (25 minutes)

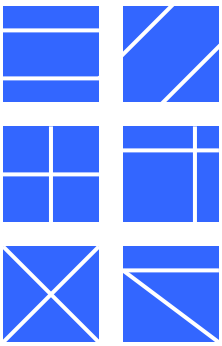
Materials: (S) Ruler, shape puzzle (Template), scissors, pattern blocks, personal white board, envelope to contain student puzzle pieces (optional)

T: What do you see on your paper?

S: I see four shapes! → Two are colored (or gray), and two are white. → There are two squares and two rectangles.

T: Yes! Today, you are going to be puzzle makers! Your first job is to cut the paper down the dotted line. Then, cut out your colored (or gray) shapes. Leave the white ones because you are going to use those for puzzle frames. (Allow time for cutting.)

T: Use your ruler to draw two lines through your square, just like you did in the cake problem. Make sure that your lines go from edge to edge. (Pause.) Do you see some new shapes inside your square now?



S: I have three shapes! → I made rectangles. → I made four new shapes. → I have little squares. → I have four triangles!

T: Use your pencil to put your initials inside each of your new shapes. Now, cut the new shapes apart with your scissors. You are making a puzzle! (Allow time for cutting.)

T: Mix up your puzzle pieces! Now, trade your puzzle pieces with your partner. Try to put his square back together. Use the frame on your paper to help you. (Allow time for practice and experimentation. Circulate to listen to the mathematical language being used. Encourage students to describe unfamiliar shapes by focusing on the number of sides and corners.) Tell me about your work.

MP.1

S1: I can't figure this one out. → The triangle won't fit inside the square.

T: Could you move the triangle to make it fit?

S1: I can turn it around. That doesn't work.

T: Think about another way to move it.

S1: I can turn it over. That works!

T: You needed to flip it! I like how you kept trying until you found a way to solve the puzzle.

S: I got the square back together! → I had to flip this piece over to make it fit. → I had to turn this one around!

T: Great job! Trade with another partner, and try again! (Allow time for more experimentation.)

T: Let's make another puzzle! This time, use your ruler to draw two lines through your rectangle. Make sure that your lines go from side to side. Remember to put your initials in each of the new shapes before you cut them apart.

MP.1

Repeat the activity with the rectangle, again circulating to observe precision in the language during the discussion of the shapes. Allow students to try solving a few different puzzles. In the spirit of MP.1, allow students to struggle and persevere, to experience the joy of the accomplishment without interference.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Challenge students working above grade level by offering them tangram puzzles to solve. Give them tangram manipulatives and outlines to solve the simpler puzzles, or download and give students printable tangrams. Students who finish their work early can form teams to solve the more challenging puzzles together.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (8 minutes)

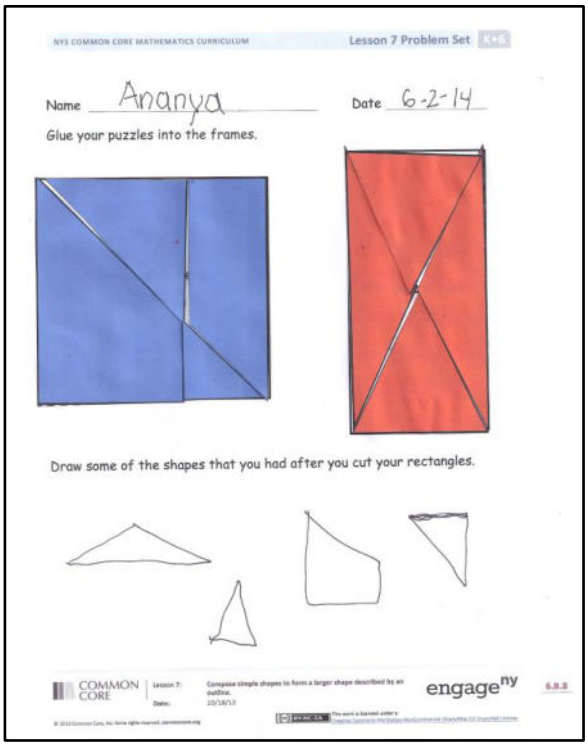
Lesson Objective: Compose simple shapes to form a larger shape described by an outline.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Student Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How many shapes did Carlos have after he cut? How did you know which shapes to circle?
- How many shapes did India have after she cut? How did you know which shapes to circle?


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 7 Problem Set K•6

Name Ananya Date 6-2-14

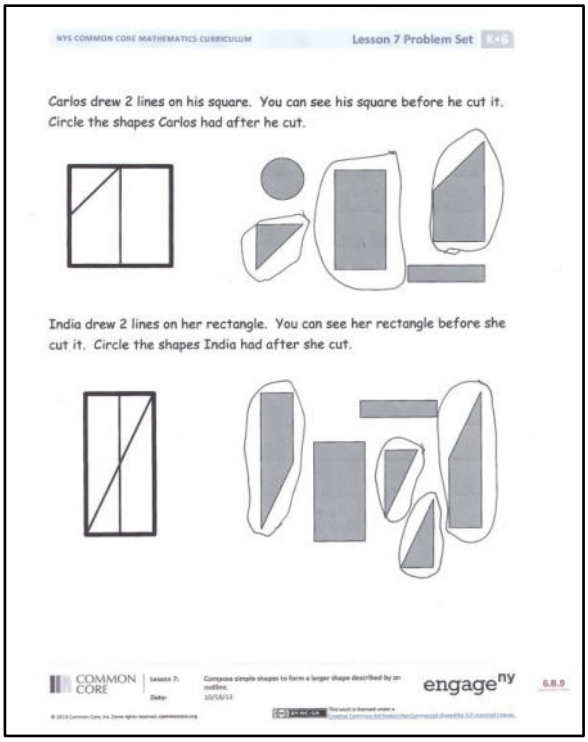
Glue your puzzles into the frames.

Draw some of the shapes that you had after you cut your rectangles.

- We all started with the same square, but all of your puzzles were different. Why is that? Everyone drew two lines, but some people ended up with three pieces, and some people had four pieces. Why?
- How did you know how to put your partner's puzzle together?
- Did you have to do anything to the shapes to make them fit into your puzzle? (Look for students to describe turns, flips, and slides.)
- How is the cake drawing like the rectangle puzzle that you made?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 7 Problem Set K•6

Carlos drew 2 lines on his square. You can see his square before he cut it. Circle the shapes Carlos had after he cut.

India drew 2 lines on her rectangle. You can see her rectangle before she cut it. Circle the shapes India had after she cut.

Name _____ Date _____

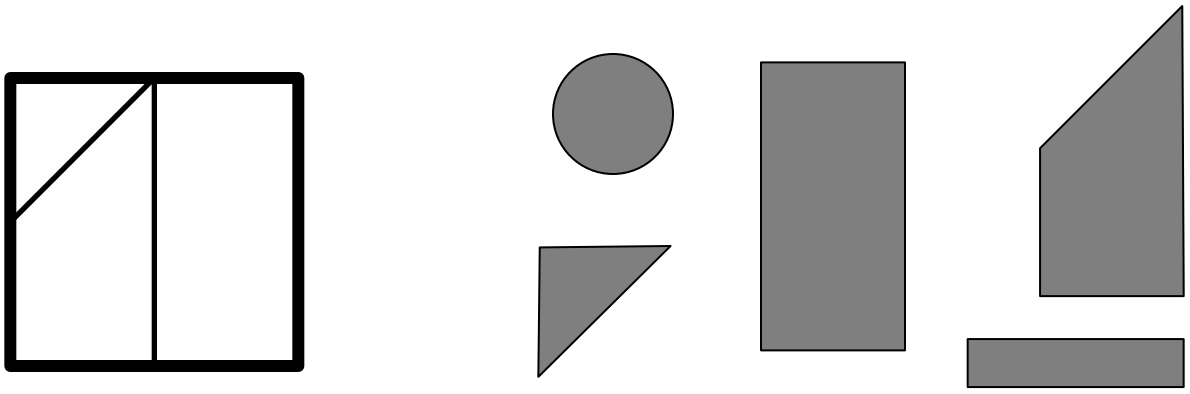
Glue your puzzles into the frames.

Glue puzzle here.

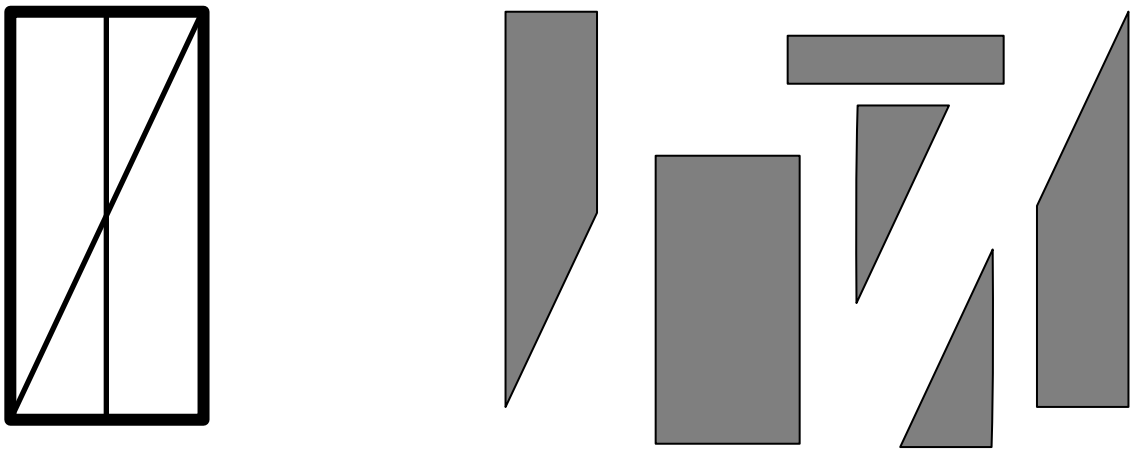
Glue puzzle here.

Draw some of the shapes that you had after you cut your rectangles.

Carlos drew 2 lines on his square. You can see his square before he cut it. Circle the shapes Carlos had after he cut.

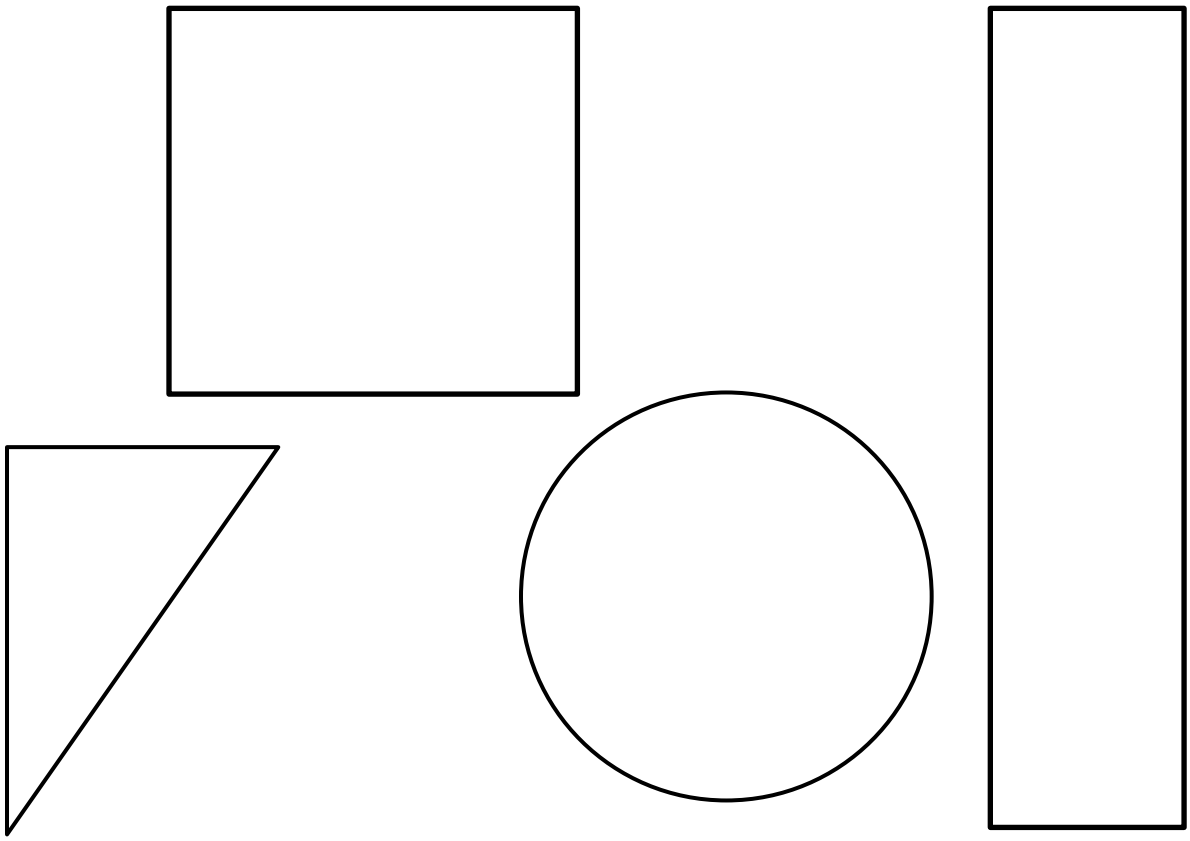


India drew 2 lines on her rectangle. You can see her rectangle before she cut it. Circle the shapes India had after she cut.



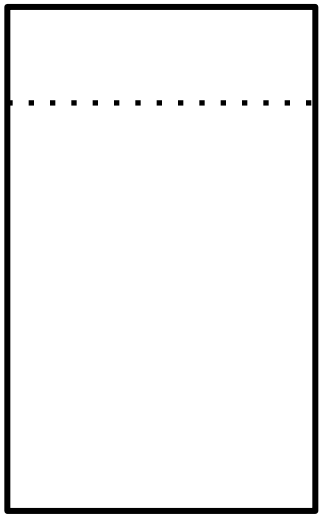
Name _____ Date _____

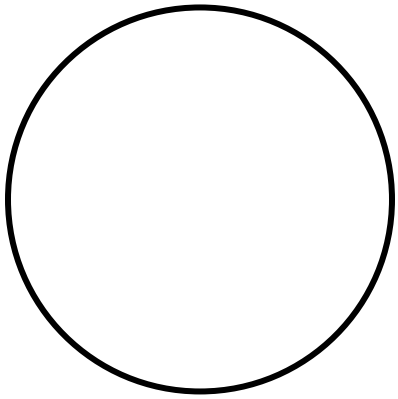
If you drew 2 straight lines inside the gray rectangle, what shapes might you find? Circle them.

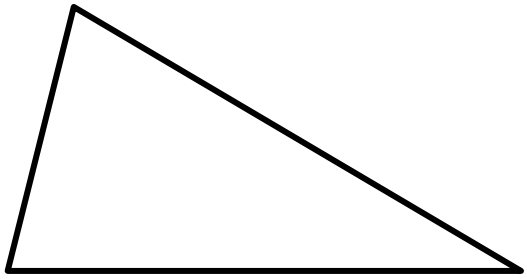


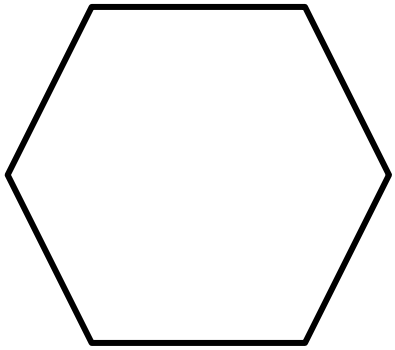
Name _____ Date _____

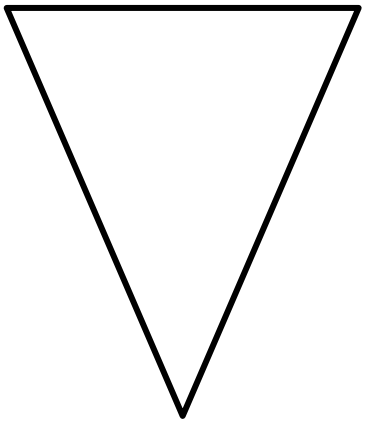
Using your ruler, draw 2 straight lines from side to side through each shape. The first one has been started for you. Describe to an adult the new shapes you made.



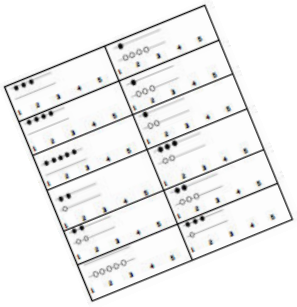






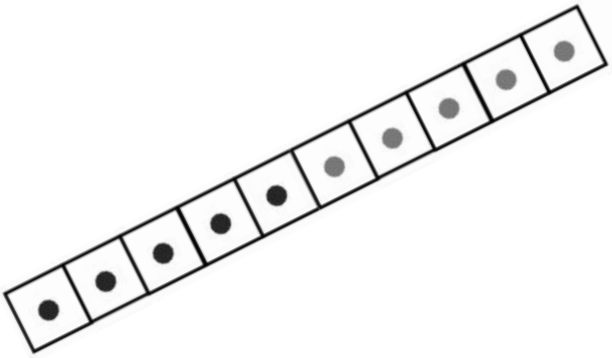


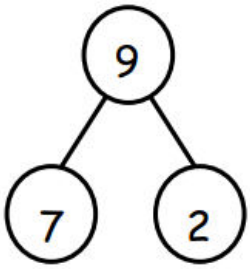
1	2	3	4	5	6	7	8	9	10



I'm Getting Ready for First Grade!

My Math Fluency Kit





Name _____

fluency kit

Name _____ Date _____

My Plan to Get Ready for First Grade Math

This is a picture of someone who can help me practice.

This is a picture of where I will practice.

This is ME getting ready for first grade!

fluency kit

Name _____

My Sprint Progress Log

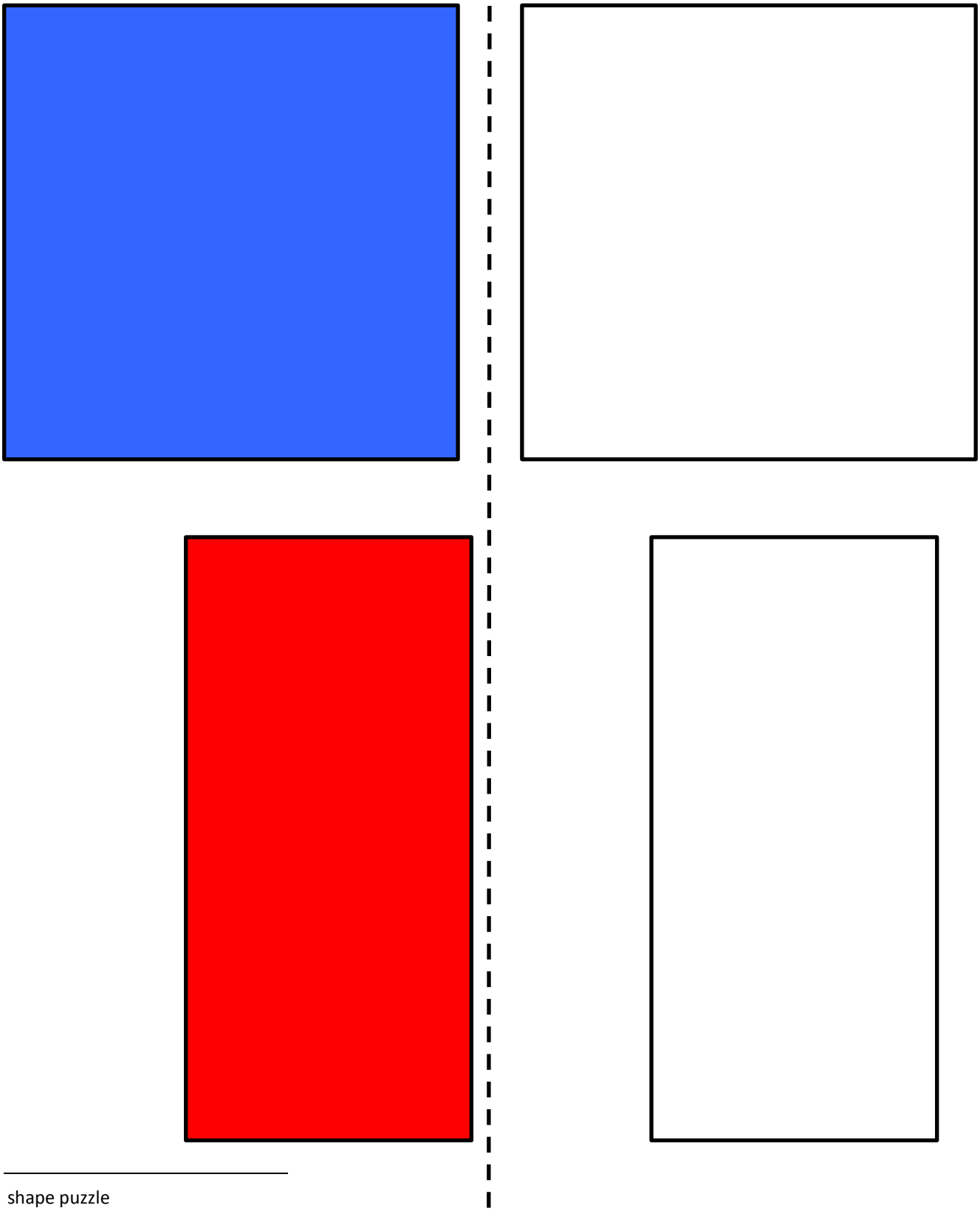
Practice your number sentences and Sprints on your personal white board. Ask an adult to time you. Keep track of how you improve over the summer.

Date	Time

Are you getting better at your number sentences?

_____

fluency kit



shape puzzle