

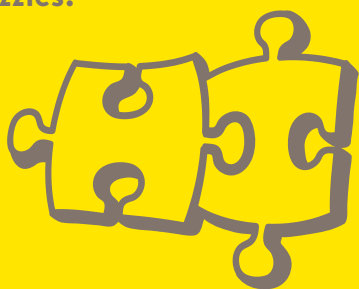


AT-HOME SUMMER GUIDE

for **SCHOOL-AGE** (Kindergarten–6th Grade)

Week of July 13, 2020

Get ready to put your brain to the test as you create and solve puzzles, puzzles, and more puzzles!



Puzzles are an excellent resource for tuning and strengthening problem-solving skills while helping you adapt to challenges and tasks that could have multiple solutions. You'll create your own jigsaw puzzles, put your problem-solving skills to the test as you work with tangram pieces to create different "pictures," and use logic to solve numeric and color Sudoku puzzles.

In addition to a selection of puzzles, this guide also includes a bingo-like game to help you brush up on math facts and a verbal coding experience to help you practice your problem-solving and communication skills.

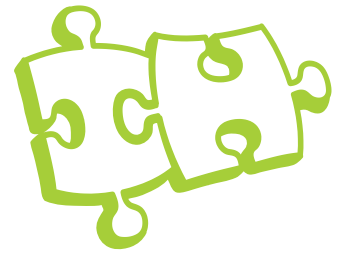
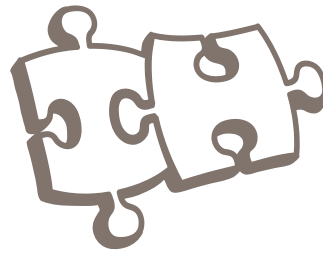
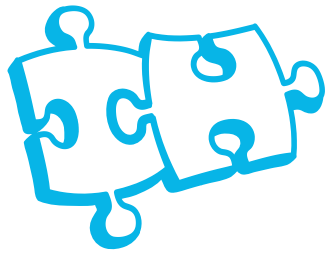
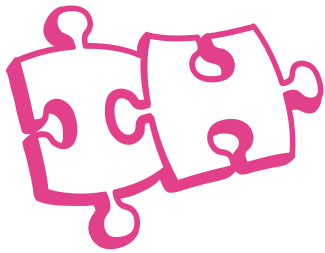
FAMILIES WITH KINDERGARTENERS:



Our summer school-age guide incorporates **first grade readiness activities** to keep your kindergartener's mind sharp through the summer!

This Week's Theme:

Puzzling Puzzles



PUZZLES

[Pieces of Me Puzzles](#)

Create a puzzle about yourself to help others learn all about you.

[Building with Tangrams](#)

Try shape art with this tangram experience. What can you make out of basic shapes?

[Making Jigsaw Puzzles](#)

Jigsaw puzzles are popular classic toys that can be used to bring art home. Use this activity to create your own art to share with your family.

[What is Sudoku?](#)

Sudoku puzzles are brainteasers that help you practice how to search for patterns. Can you find the patterns and solve the puzzles?

[Making Color Sudoku](#)

Sudoku puzzles are most commonly created using numbers, but pictures or letters can also be used to create patterns. In this activity, try to create your own Sudoku puzzles with colors.

PREVENTING LEARNING LOSS

[Five in a Row](#)

Reinforce math skills with a fun family game that is a variation of bingo.

[Program a Robot](#)

Try this verbal coding activity to test your problem-solving and communication skills.

FIRST GRADE READINESS

[Phonics Activity: Animal Extravaganza](#)

Put your child's phonics skills to practice with this writing activity, where they'll create, illustrate, and write about a favorite or imaginary animal.

[Math Activity: Subtraction Bingo](#)

For the youngest learners, this simplified version of the Five in a Row activity focuses on subtraction skills.

At-Home Summer Guide for School-Age

Week of July 13, 2020

Getting Ready for the Week: Materials to Gather

For Puzzles Activities:

- ❑ [Pieces of Me puzzle sheet](#)
- ❑ Paper
- ❑ Writing and drawing tools
- ❑ Scissors
- ❑ Heavy paper, cardstock, or cardboard
- ❑ Envelope to hold puzzle pieces
- ❑ [Tangram Pieces Template](#)
- ❑ Glue stick
- ❑ [Jigsaw Puzzle Template](#)
- ❑ [Sudoku puzzles](#)
- ❑ [Blank Sudokus puzzles sheet](#)

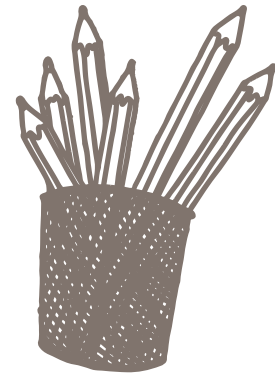
Tip: At the beginning of your week, gather materials and place them in a container so you're ready to go!

For Preventing Learning Loss Activities:

- ❑ Bingo disks or other spot markers (2 different colors)
- ❑ Dice (2 for each pair of players)
- ❑ [Five-in-a-Row Addition and Subtraction Game Board](#)
- ❑ [Five-in-a-Row Multiplication Game Board](#)

For First Grade Readiness:

- ❑ [National Geographic Kids Animals website](#)
- ❑ Paper
- ❑ Pencil
- ❑ Drawing materials, such as crayons, colored pencils, or markers
- ❑ Bingo disks (each player should have their own color). If you do not have these, you can make your own with colored construction paper.
- ❑ Two dice
- ❑ [Four-in-a-Row Subtraction Game Board](#) (printed, or copied by hand with paper and markers)
- ❑ Set of items to use as counters, such as small blocks, buttons, or beads (optional)



At-Home Summer Guide for School-Age

Week of July 13, 2020

Puzzling Puzzles: Pieces of Me Puzzles

Create a puzzle about yourself to help others learn all about you.

Length of activity:
20 minutes



**Level of Engagement
Required by Adult:** Low



Level of Prep Required: Medium



What you need:

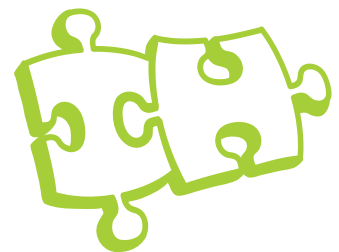
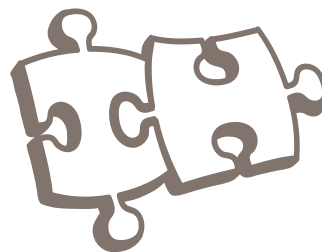
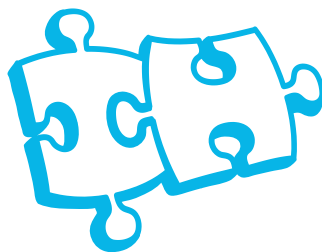
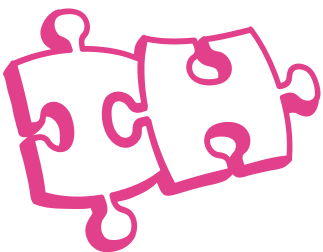
- [Pieces of Me puzzle sheet](#)
- Paper
- Writing and drawing tools
- Scissors

What you will do:

You'll create a puzzle that will allow you to share information about yourself with others. Print one copy of the [Pieces of Me puzzle sheet](#). If you aren't able to print it, draw a similar puzzle on a sheet of paper, making sure to include the sentence prompts on each puzzle piece. Complete each sentence prompt using words or pictures, then color in each puzzle piece. When your puzzle is complete, cut out the individual pieces. Invite others to put your puzzle together and learn more about you! If you'd like, create additional puzzles with different information you'd like to share with others, or invite others in your family to create their own puzzles for you to assemble.

Social and Emotional Learning

This activity is an opportunity for you to think about times when you need help, things you're good at, and what you think about yourself, and then share that information with others. Sharing these thoughts with others can help them learn new things about you and help you build relationships with them. You can create additional puzzles with your family to share what makes each of you feel happy or safe, what you feel stressed about, or any other feelings you might be experiencing right now.



At-Home Summer Guide for School-Age

Week of July 13, 2020

Pieces of Me

I am good at...

My family is...

My favorite thing is...

I think I am...

Sometimes I need help with...

When I grow up, I want to be...

At-Home Summer Guide for School-Age

Week of July 13, 2020

Puzzling Puzzles: Building with Tangrams

Try shape art with this tangram experience. What can you make out of basic shapes?

Length of activity:

20 minutes



Level of Engagement

Required by Adult: Low



Level of Prep Required: Medium



What you need:

- Heavy paper, cardstock, or cardboard
- Envelope to hold puzzle pieces
- [Tangram Pieces Template](#)
- Scissors
- Glue stick
- Writing and drawing tools

What you will do:

Tangrams are a type of puzzle that originated in China. They've also been known as the "seven pieces of cleverness" because each tangram puzzle is comprised of seven geometric shapes that fit together to form a square. In this activity you'll use the tangram pieces to see what other shapes you can create.

To create your set of tangram pieces, print one copy of the [Tangram Pieces Template](#) on cardstock, or print it on regular printer paper and glue to a sheet of cardstock or cardboard. If you aren't able to print the Tangram Template, copy the design onto a sheet of cardstock or cardboard. Carefully cut along the lines and then play with the seven pieces and see what you can create!

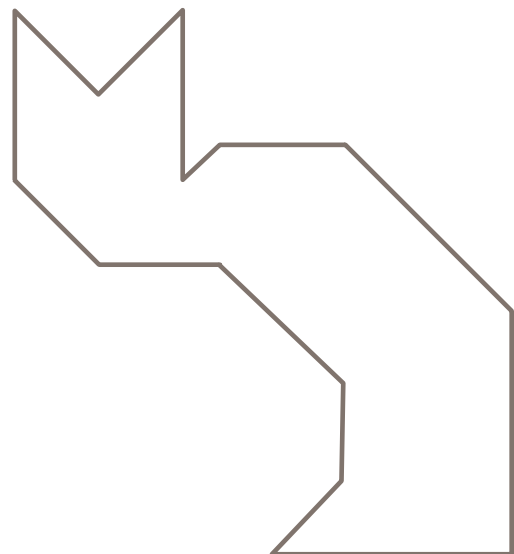
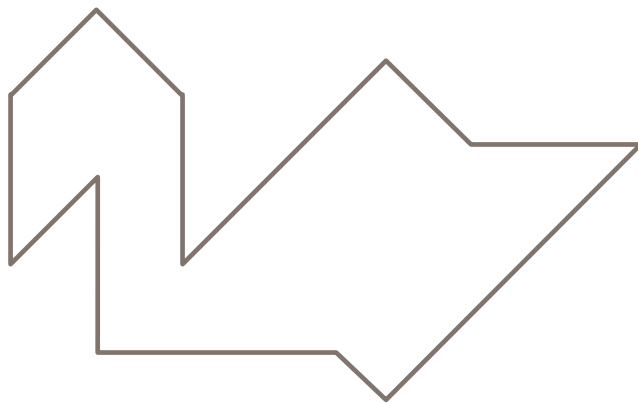
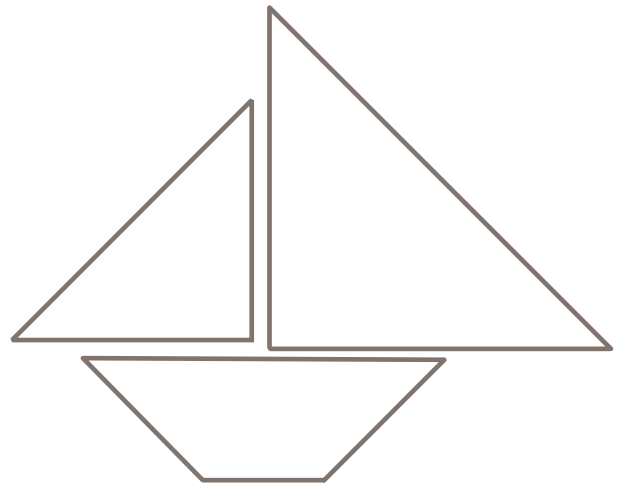
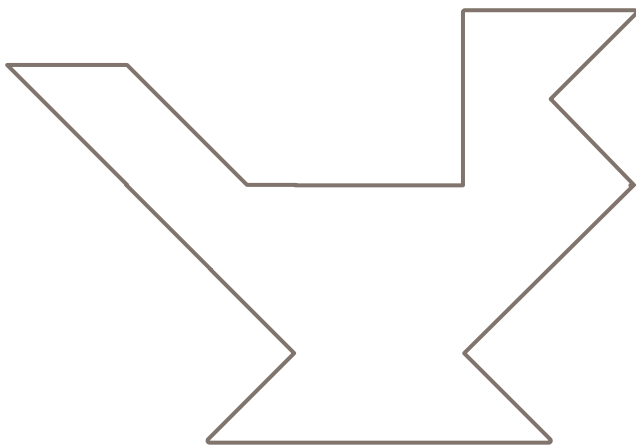
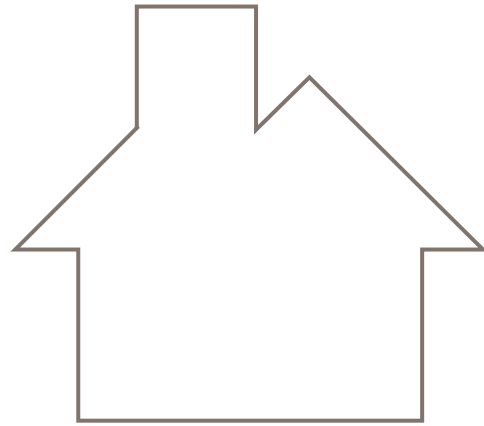
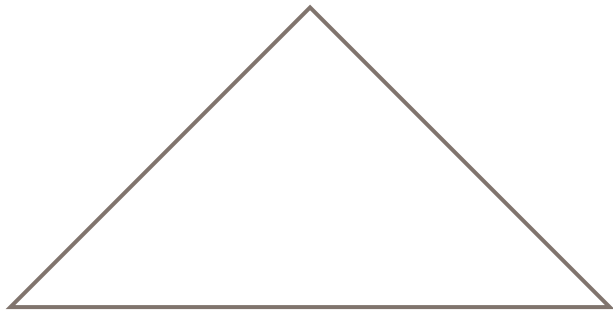
Use the tangram pieces to create the [six shapes](#) on the following page.

After making these, what else can you make? Challenge your friends and family to guess the shapes you make or make a game out of seeing who can make the most unique shapes in a set amount of time.

At-Home Summer Guide for School-Age

Week of July 13, 2020

Tangram Shapes*

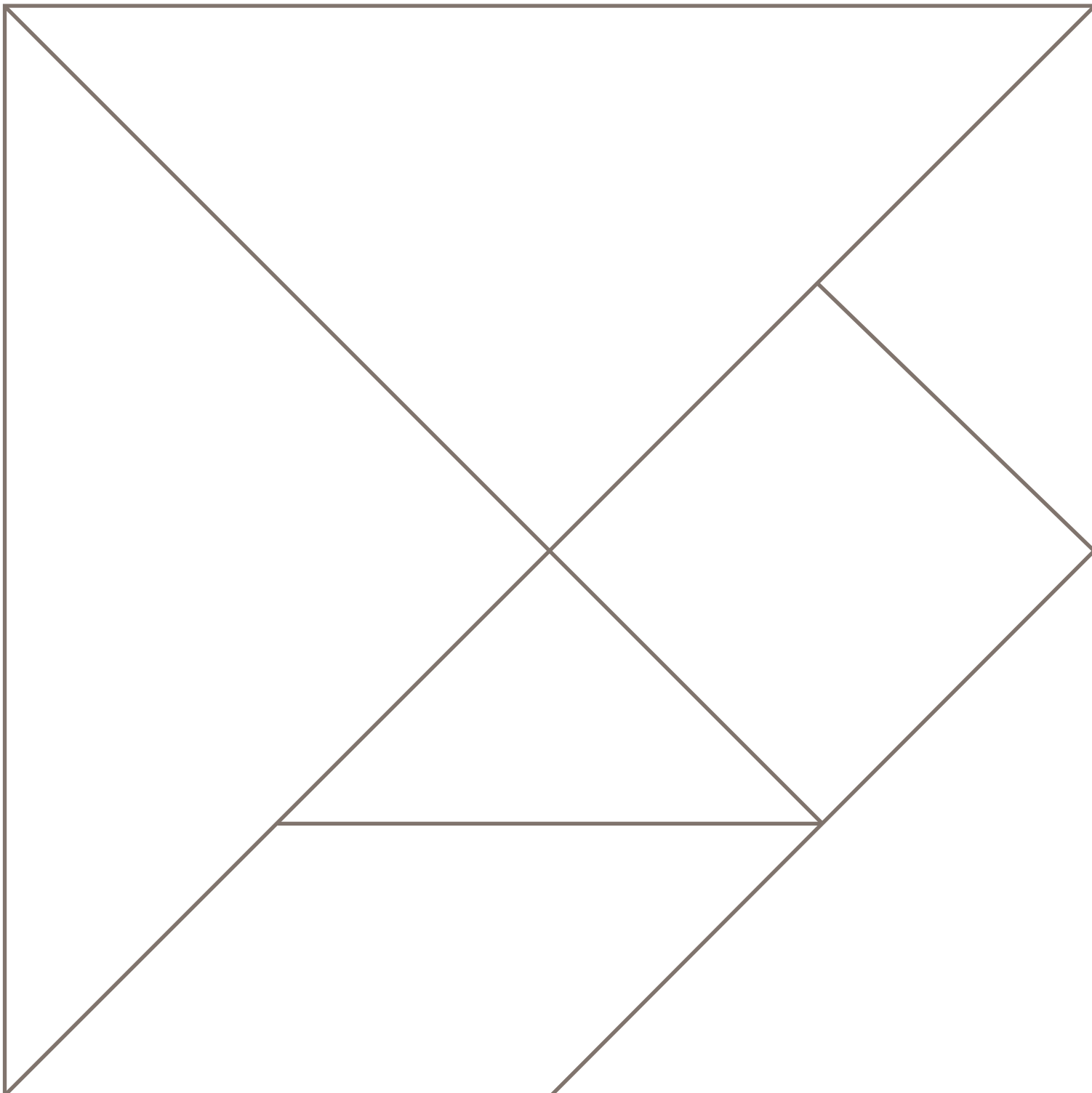


* See [page 22](#) for solutions.

At-Home Summer Guide for School-Age

Week of July 13, 2020

Tangram Pieces Template



At-Home Summer Guide for School-Age

Week of July 13, 2020

Puzzling Puzzles: Making Jigsaw Puzzles

Jigsaw puzzles are popular classic toys that can be used to bring art home. Use this activity to create your own art to share with your family.

Length of activity:
30 minutes



**Level of Engagement
Required by Adult:** Low



Level of Prep Required: Medium



What you need:

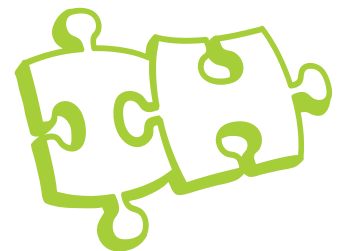
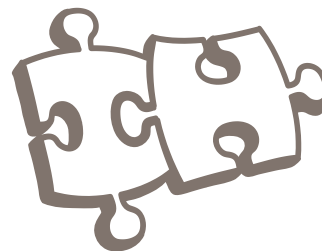
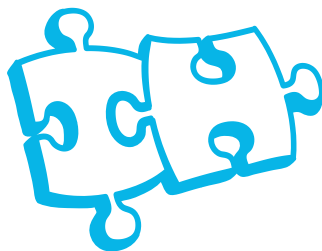
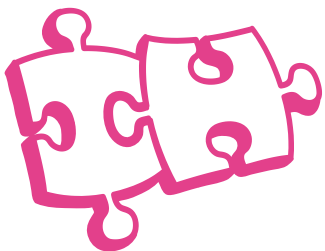
- Cardstock or heavy paper
- [Jigsaw Puzzle Template](#)
- Writing and drawing tools
- Scissors
- Envelope to hold the puzzle pieces

What you will do:

A jigsaw puzzle is an image, such as a photograph, painting, or drawing, that's cut into pieces and can be reassembled to reveal the image. In this activity you'll make your own jigsaw puzzle to assemble with family and friends!

To create your jigsaw puzzle, print one copy of the [Jigsaw Puzzle Template](#) on cardstock, or print it on regular paper if cardstock isn't available. If you aren't able to print the Jigsaw Template, copy the design onto a sheet of cardstock or paper. Cut around the outer lines of the puzzle to remove excess paper. Then take your jigsaw puzzle template and flip it over so you're looking at the blank side of the paper. Think of something you can draw that will fill up the entire page and include color throughout. Can't think of anything? Try drawing a picture of a friend, a beach scene, or a scene from a favorite story.

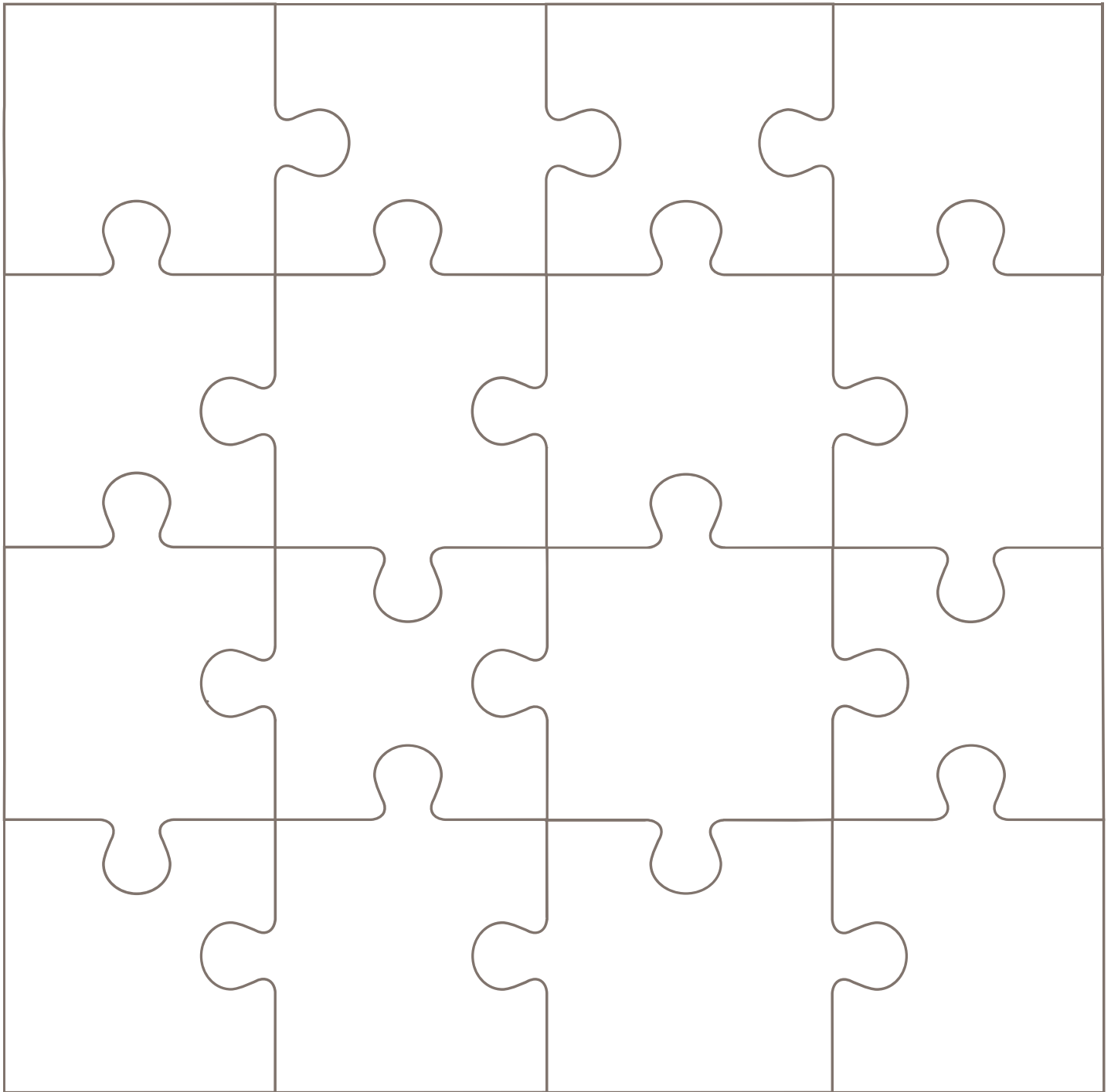
After completing your drawing, turn your paper over so you can see the outline of the puzzle pieces. Carefully cut along the lines to create your own puzzle pieces! Invite others to put your puzzle together and see your drawing. Save your pieces in an envelope.



At-Home Summer Guide for School-Age

Week of July 13, 2020

Jigsaw Puzzle Template



At-Home Summer Guide for School-Age

Week of July 13, 2020

Puzzling Puzzles: What is Sudoku?

Sudoku puzzles are brainteasers that help you practice how to search for patterns. Can you find the patterns and solve the puzzles?

Length of activity:
15 minutes



**Level of Engagement
Required by Adult:** Low



Level of Prep Required: Low



What you need:

- [Sudoku puzzles](#)
- Writing and drawing tools

What you will do:

Have you or anyone in your family heard of the game called *Sudoku*? It's similar to crossword puzzles but uses numbers instead of words and can come in a variety of difficulties.

The numbers you'll use are determined by the number of boxes in each bold section. Since there are 4 boxes in the example below, you'll use only the numbers 1, 2, 3, and 4 (no numbers above 4). If there were 9 boxes in each grid you would use numbers 1–9. The rules for this puzzle are that each number can be used only once in a row (side to side), only once in a column (up and down), and only once in every bold four-square section. There are numbers printed in the puzzle to start that help the player determine which numbers are missing and where they go.

	2	4	
1			3
4			2
	1	3	



In this example, the top row is missing the numbers 1 and 3. The trick for deciding which numbers go in the empty boxes is to look at the columns and the larger four-square sections to see what numbers are missing. You can't put a 1 in the top left corner because a 1 is already in the left column, which is also a part of the four-square section. This means that 1 has to go in the top right square and 3 in the top left. See if you can solve the rest of the puzzle, then give [these](#) other Sudoku puzzles a try.

Having trouble figuring it out? See the answer key to this puzzle at the end of this guide.

At-Home Summer Guide for School-Age

Week of July 13, 2020

Sudoku puzzles

3	4	1	2
4	2	3	1

4			1
	1	3	
	4	1	
1			3

		2	
	2		4
		4	1
1		3	

	1	2	
			4
	3	4	
1	4		

1			3
	4	1	
4		2	
2			

	3		
4			3
	1	4	
2		3	

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Week of July 13, 2020

Puzzling Puzzles: Making Color Sudoku

Sudoku puzzles are most commonly created using numbers, but pictures or letters can also be used to create patterns. In this activity, try to create your own Sudoku puzzles with colors.

Length of activity:
15 minutes



**Level of Engagement
Required by Adult:** Low



Level of Prep Required: Low



What you need:

- [Blank Sudokus Puzzles sheet](#)
- Writing and drawing tools

What you will do:

Using your experience with Sudoku puzzles, you'll create a color-based puzzle for your family to solve. You'll use the same logic that goes into the numeric version of Sudoku, but instead there will be four colors. Each color can only appear once in a row (side to side), once in a column (up and down), and once in a four-square section. Look at the example we used previously:

	2	4	
1			3
4			2
	1	3	

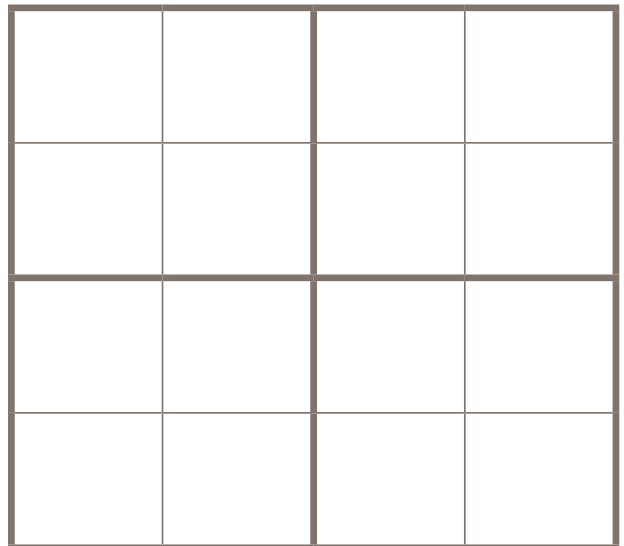
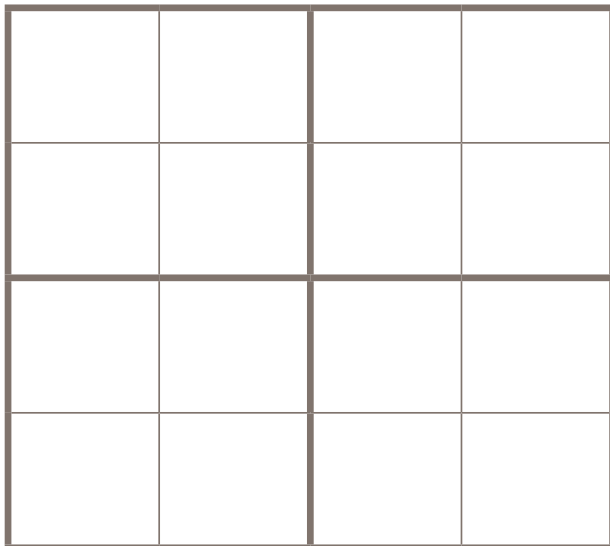
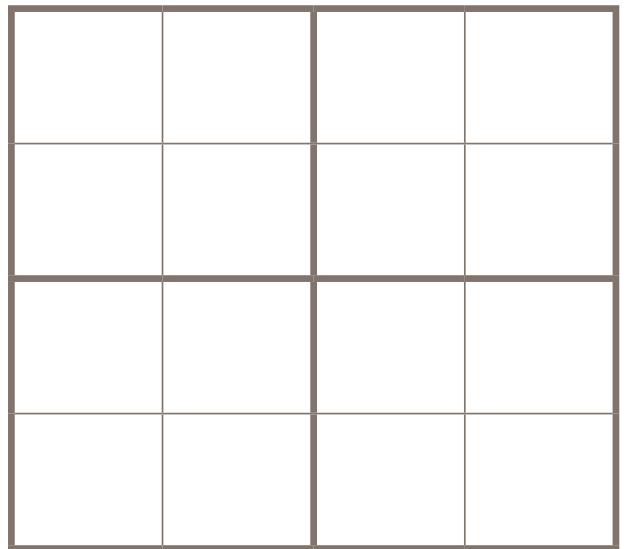
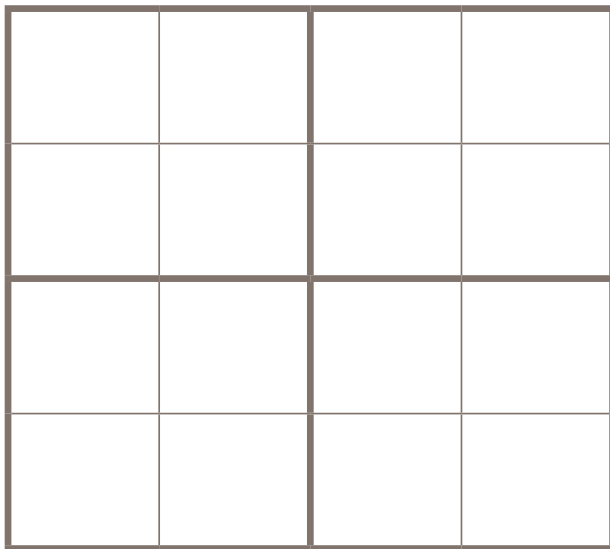
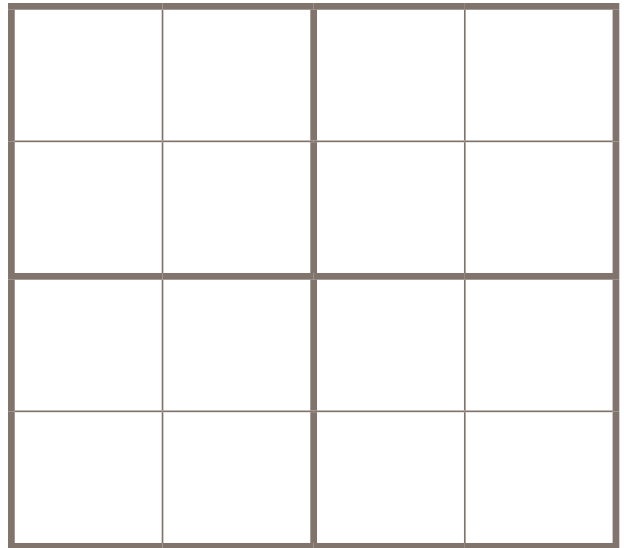
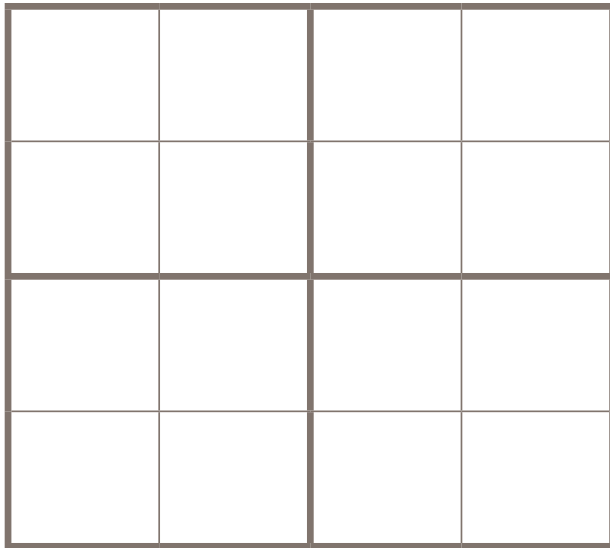
You'll be building a similar puzzle but swapping the numbers for colors. For example, you might replace the number 2 with the color blue and the number 4 with red. Select a color for 1 and 3 and fill in each box in the puzzle accordingly. Can you complete this Sudoku using only the colors?

Use the [templates](#) on the next page to design your own color Sudoku puzzles to share with family and friends. Begin by coloring in all of the squares using your four colors, making sure your completed puzzle follows the rules above. Then create a copy of your puzzle, but this time you'll color in only two squares in each row—the blank squares will be for someone else to solve!

At-Home Summer Guide for School-Age

Week of July 13, 2020

Blank Sudokus Puzzles



At-Home Summer Guide for School-Age

Week of July 13, 2020

Preventing Learning Loss: Five in a Row

Reinforce math skills with a fun family game that is a variation of bingo.

Length of activity:
15 minutes



**Level of Engagement
Required by Adult:** High



Level of Prep Required: Low



What you need:

- ❑ Bingo disks or other spot markers (2 different colors)
- ❑ Dice (2 for each pair of players)
- ❑ [Five-in-a-Row Addition and Subtraction Game Board](#)
- ❑ [Five-in-a-Row Multiplication Game Board](#)
- ❑ Writing and drawing tools (if bingo markers aren't available)

What you will do:

- Give each pair of players a copy of the sheet [Five-in-a-Row Addition and Subtraction Game Board](#), two dice, and some bingo disks or spot markers, one color for each player. If bingo markers aren't available, each player can use a different color crayon or marker to mark their spots.
- The goal is to cover five squares connected in a row vertically, horizontally, or diagonally.
- Players will take turns rolling the dice. After each roll, they'll add or subtract the dice then place a bingo disk or spot marker on a square on the game board that has the same number as their sum or difference. If a player is not able to cover a number, it is the other player's turn.
- Play continues until one player has five disks in a row vertically, horizontally, or diagonally.

Variations:

- For older players, use the sheet [Five-in-a-Row Multiplication Game Board](#) and have them cover the product of the numbers rolled with the dice.
- For older players, play using the "doubles" rule. If the sum or product of the number is already covered (such as 10), the child calls doubles and can cover the 20.

At-Home Summer Guide for School-Age

Week of July 13, 2020

Five-in-a-Row Addition and Subtraction Game Board

0	1	11	7	9	10	4	12	2
3	8	5	8	5	1	12	8	9
2	6	0	4	3	5	0	4	7
12	10	6	12	10	3	6	1	11
1	4	3	9	0	8	2	2	4
7	9	9	6	12	7	5	3	10
8	7	8	2	8	6	0	10	6
4	0	10	1	6	11	9	5	3
11	3	12	11	7	2	12	11	1

At-Home Summer Guide for School-Age

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Five-in-a-Row Multiplication Game Board

1	36	24	2	15	18	2	25	2
25	15	1	4	30	10	12	24	8
12	5	12	1	5	20	16	5	30
3	20	4	16	16	3	36	16	3
10	30	20	12	24	12	8	12	20
9	8	16	25	1	24	25	4	18
18	24	15	10	9	15	16	10	9
36	2	3	8	20	30	10	9	24
2	5	20	6	12	4	18	1	36

At-Home Summer Guide for School-Age

Week of July 13, 2020

Preventing Learning Loss: Program a Robot (2nd–6th grade)

Try this verbal coding activity to test your problem-solving and communication skills.

Length of activity:
15 minutes



Level of Engagement
Required by Adult: Medium



Level of Prep Required: Low



What you need:

- No materials needed

What you will do:

- For this activity you'll practice communication and listening skills as you take turns in two roles: programmer and robot.
- Select one person to be the programmer and one person to be the robot. If there are more than two people, have a group of people work together as programmers.
- Think of a task for the robot to complete, such as turning on a light, pushing in a chair, putting a book away, or picking something up from the floor.
- The programmer should give verbal commands for the robot to follow. The commands must be specific and not require any decisions by the robot. For example, the command, "Raise your arm" would require the robot to decide which arm and how high. A better command would be, "Raise your right arm in front of you so it is at shoulder height and parallel to the floor."
 - A few examples of clear commands are:
 - Turn right 90 degrees.
 - Move backward three steps.
 - Take one step to the right.
 - A few examples of unclear commands are:
 - Raise your arm and turn on the lights.
 - Walk until I say stop.
 - Go into the next room.
- If commands are not clear, the robot should not move. Continue giving commands until the robot has successfully completed the task.
- After completing the task, switch roles. The new programmer will now select a different task for the new robot.

At-Home Summer Guide for School-Age

Week of July 13, 2020

First Grade Readiness

Our summer school age guide incorporates **first grade readiness activities** to keep your kindergartener's mind sharp through the summer.

Phonics Activity: Animal Extravaganza

Put your child's phonics skills to practice with this writing activity, where they'll create, illustrate, and write about a favorite or imaginary animal.

Length of activity:

30 minutes



Level of Engagement

Required by Adult: Medium



Level of Prep Required: Low



What you need:

- [National Geographic Kids Animals website](#)
- Paper
- Pencil
- Drawing materials, such as crayons, colored pencils, or markers

What your child is learning:

- To express creative ideas through writing
- To spell out words using phonics principles

What you will do: Go to the [National Geographic Kids Animals website](#). Invite your child to explore it with you to learn about different types of animals. Let your child lead and select the animals that interest them. Look at the pictures and read the first paragraph of the animal page out loud. You can read more if your child is interested or move on to a new animal if they're not. Explore at least three or four animals together.

When you're done exploring, invite your child to imagine they're going to make a website about an animal. If your child loves to use their imagination, invite them to imagine that they're creating a brand new, imaginary animal. What would it look like? Where would it live? How would it move, and what would it eat? If your child would prefer to write about a real animal, ask them what sort of animal they would write about on their website. What do they think people should know about this animal?

Give them the paper, drawing materials, and pencil, and ask them to draw a picture of the animal. Underneath the picture, ask them to write the animal's name. Next, have them write a few sentences about the animal. When they are done, ask them to show you their picture and read their writing aloud to you.

As your child writes, they'll probably come across words that they don't know how to spell yet. Ask them to take their best guess by sounding the word out. If they're still stuck, help them with the difficult letter combinations. For example, if they're stuck on the word "should" because they don't know which letters make the /sh/ sound, tell them that the /sh/ sound is represented by the letters *S* and *H*, and let them continue sounding out the rest of the word. They won't always find the correct spelling of the word, but that's okay! Using phonics clues to "invent" spellings of a word is good practice for reading and writing.

At-Home Summer Guide for School-Age

Week of July 13, 2020

If your child is ready: If your child enjoys this activity, ask them to keep going! Are there other animals they'd like to illustrate? Or, would they like to write and illustrate a story involving the animal they chose? If animals aren't capturing your child's interest, see if they would prefer to write about another topic, like creating a website entry for something they are interested in, or simply writing about something fun they did recently.



At-Home Summer Guide for School-Age

Week of July 13, 2020

Math Activity: Subtraction Bingo

For the youngest learners, this simplified version of the [Five in a Row](#) activity focuses on subtraction skills.

Length of activity:
15 minutes



**Level of Engagement
Required by Adult:** High



Level of Prep Required: Low



What you need:

- Bingo disks (each player should have their own color). If you do not have these, you can make your own with colored construction paper.
- Two dice
- [Four-in-a-Row Subtraction Game Board](#) (printed, or copied by hand with paper and markers)
- Set of items to use as counters, such as small blocks, buttons, or beads (optional)
- Paper and pencil (optional)

What your child is learning:

- How to subtract two numbers

What you will do:

Look at the game board with your child. Both of you will take turns rolling two dice and finding the difference between the dice. After the difference has been found for each roll, place a bingo disk over one of the corresponding number squares on the game board. For example, if a player rolls a 4 and a 3, they can place their disk on the game board on any square that says 1. The first player to get four disks in a row—horizontally, vertically, or diagonally—wins the game!

Depending on how comfortable your child is with mental math, they may want to use a paper and pencil to write out the number sentence before solving it, or they may wish to use counters or their fingers to help solve the subtraction problem.

If your child is ready: For more of a challenge, see the [Five in a Row](#) activity, which combines addition and subtraction.

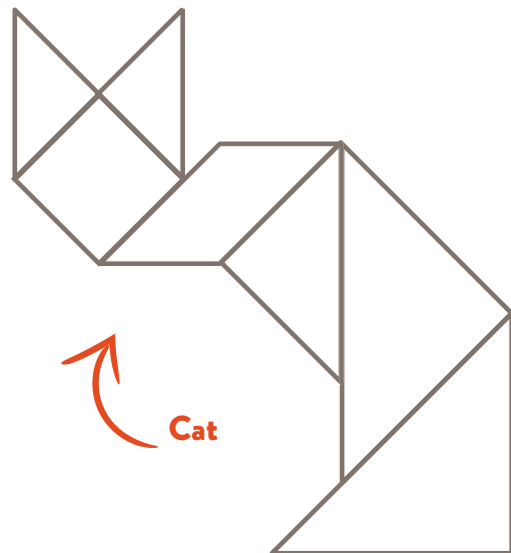
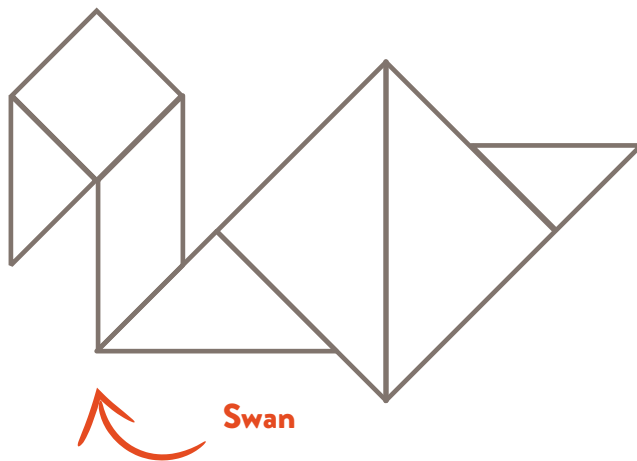
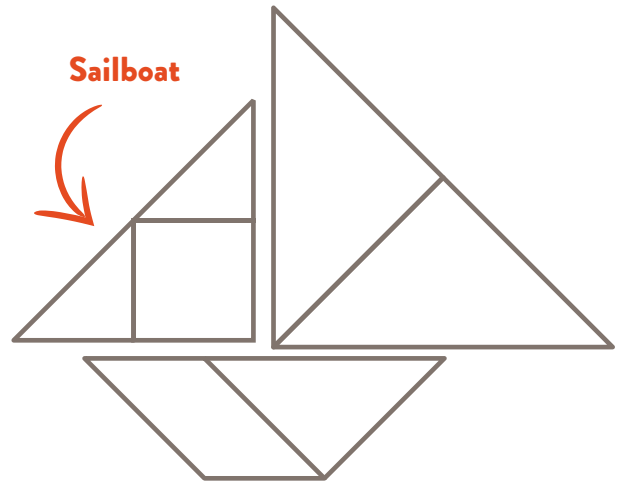
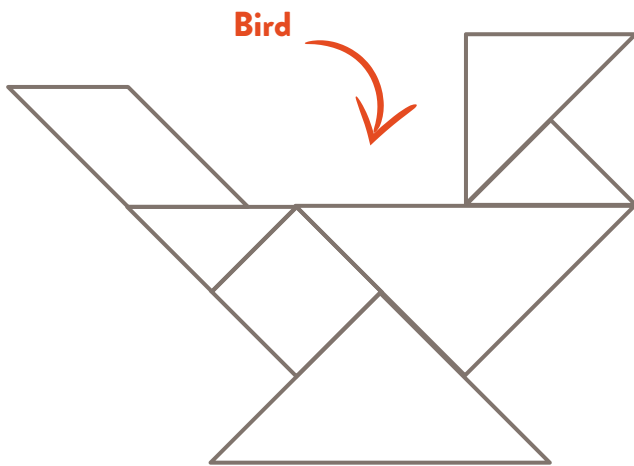
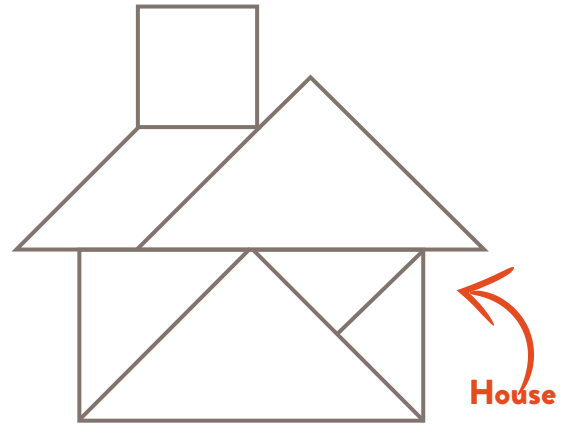
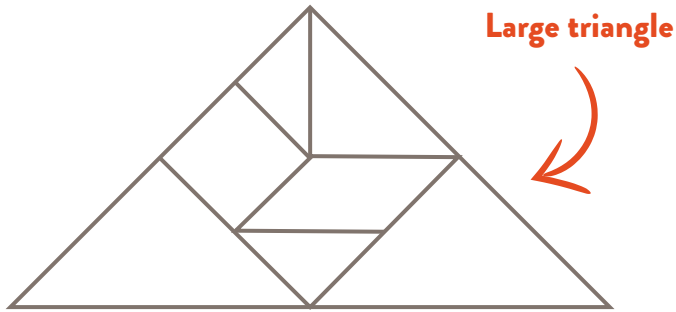
At-Home Summer Guide for School-Age

Week of July 13, 2020

Four-in-a-Row Subtraction Game Board

4	0	3	5	2	3
1	1	0	0	1	5
3	1	2	0	4	5
2	0	2	1	4	4
3	0	1	2	1	2
5	3	3	2	4	1

Tangram Shapes Solutions



At-Home Summer Guide for School-Age

Week of July 13, 2020

Sudoku Answer Key

3	2	4	1
1	4	2	3
4	3	1	2
2	1	3	4