

Home Connections

Math Activities

Grade 3

Geometry and Spatial Sense

Toothpick Shapes Game
Shapes in Boxes
Rotating Spoons
Tricky Triangles

Toothpick Shapes Game

Number of Players: 2 or more

Materials:

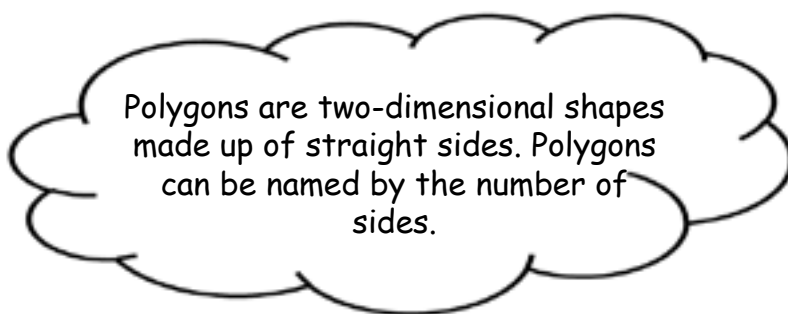
- Die 
- Toothpicks 

Rules:

1. Players take turns rolling a die. The number rolled is the number of toothpicks each player takes to make a shape.
2. If players use three toothpicks, the shape of the triangle is as shown. The shapes must be closed; no gaps in between toothpicks.



3. If the die shows a 1 or 2, the player does not take any toothpicks, and the turn passes to the other player.
4. The first player to make all four shapes (triangle-3 toothpicks, quadrilateral-4 toothpicks, pentagon-5 toothpicks, hexagon-6 toothpicks) wins the game.



Polygons are two-dimensional shapes made up of straight sides. Polygons can be named by the number of sides.

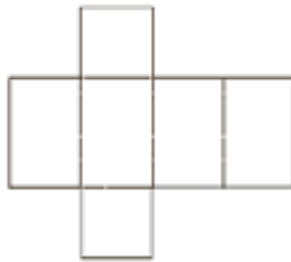


Let's Talk About It

- What strategy did you use to make your shapes?
- How would you describe the shapes you made?

Shapes In Boxes

1. Find an empty box, such as a cereal box or facial tissue box.
2. Unfold the box carefully by detaching the tabs that hold the box together. Then flatten the box. Your box might look something like this.



3. Help your child examine the flattened box; ask him or her to identify the different shapes. For example, your child might see rectangles and squares.
4. Have your child label the different shapes.

Try this activity with a variety of boxes.

The sides of three-dimensional figures are made up of two-dimensional shapes.

Let's Talk About It

- How were the boxes similar? How were they different?
- Which shape was more difficult to identify? Why?

Rotating Spoons

Number of Players: 2

Materials:

1. The cards cut from the attached page.
2. 6 Spoons (3 for each player)

Rules:

1. Shuffle the cards and place them in a pile face down.
2. Place 3 spoons in front of you and 3 in front of your child.
3. Each spoon must be placed in one of these positions.



4. The goal of the game is to be the first player to rotate his or her spoon so that they are all in this position.



5. Take turns picking a card from the pile and doing the kind of turn indicated on the card. Players may rotate any one of their spoons.
6. Spoons must be rotated in a clockwise direction.

If all the cards in the pile are used, shuffle the cards again and place them face down.

Let's Talk About It

- What strategy did you use to play this game?
- Would the outcome be different if you started with your spoons in a different position? Why or why not?
- What did you notice about the patterns in your rotations?

Rotating Spoons



Quarter Turn	Half Turn	Three-Quarter Turn
Quarter Turn	Half Turn	Three-Quarter Turn
Quarter Turn	Half Turn	Three-Quarter Turn

Tricky Triangles

1. Cut out the triangles on the attached page. Ask your child to look away so he or she cannot see what you are doing.
2. Arrange the shapes on a blank piece of paper to make a single shape. It could be any arrangement. (See example.)
3. Trace around the outside of the arrangement to create a puzzle.
4. After you have traced around the arrangement of triangles, remove the triangles so that only the outline of the shape is visible.
5. Ask your child to look at the outline and try to place the triangles so that they fit inside the puzzle

Example:



An understanding of geometric relationships includes the ability to see how shapes can be combined to create other shapes

Let's Talk About It

- What strategy did you use to complete the puzzle?
- How did you create the puzzle?

Tricky Triangles

