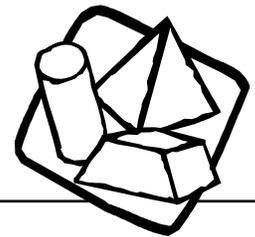


# Square Puzzles

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**Fold and cut a square to see what shapes you can make.**

## What you need

Scissors

Paper (scrap paper works fine)

Glue

## What to do

1. Cut a piece of paper so that it is a square.
2. Fold the square as many times as you wish.
3. Make one straight cut across the folded paper square cutting it into 2 pieces.
4. Before you unfold the pieces predict what kind of shapes will result.
5. Unfold and look at the pieces.
6. Put your shapes back together into the square shape you began with.
7. Glue them on another sheet of paper.
8. Make another puzzle with a different cut or different number of folds.

## What to ask

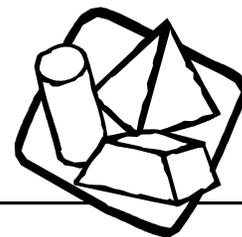
- Did you get any other kind of shape? What shapes do you have?
- How many squares?
- How many triangles?
- How many rectangles?
- How many times did you fold it?
- What shapes do you have? How many sides?
- Do any of your shapes have a hole in them? Does the hole have a shape?
- Is it possible to make the same puzzle with a different cut or same number of folds?
- What would happen if you made one curved cut?



## Did you know?

Cutting and folding paper is a fascination for many, including mathematicians. It is even possible to fold a paper in such a way that a single cut can make any letter of the alphabet. Cutting and finding out the result can seem random at first. By experimenting and examining the results, patterns can be found and cuts can be made purposefully.





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## **What's next?**

- Sort your pieces according to their shapes.
- Try other shapes like triangles, rectangles and circles.

## **To learn more**

### ***Changes Changes***

*by Pat Hutchins*

This book helps children see that they are limited only by their own imagination. The two “little people” in the book change their block structure several times. Blocks become buildings, a fire truck, a boat and more.

### ***Round Is a Mooncake: A Book of Shapes***

*by Roseanne Thong*

A little girl's neighborhood becomes a discovery ground of things round, square and rectangular. Many of the objects are Asian in origin, others universal: round rice bowls and a found pebble, square dim sum and pizza boxes, rectangular Chinese lace and a very special pencil case. Bright art accompanies this lively introduction to shapes and a short glossary explains the cultural significance of the objects featured in the book.

## **How it helps with school**

### **Texas Prekindergarten Curriculum Guidelines**

Geometry and Spatial Sense

### **Texas Essential Knowledge and Skills (TEKS) Standards:**

Geometry and Spatial Reasoning: K.8A, K.9B; 1.6A, B; 2.7;

Underlying Processes and Mathematical Tools: K.14A; 1.12A; 2.13A

### **National Council of Teachers of Mathematics (NCTM) Standard:**

Geometry, Connections