

## Playing with Tangrams



Tangrams are fun Chinese puzzles made up of 7 pieces that fit together to form a square. The pieces consist of 2 large equilateral (meaning that all sides and angles are the same) triangles, 1 medium equilateral triangle, 2 small equilateral triangles, 1 square, and 1 parallelogram.

Puzzle players rearrange the shapes to create new images. The only rules are that **every shape must be used** and **they must touch** in some way.

According to [www.tangram-channel.com](http://www.tangram-channel.com), tangram puzzles originated in Imperial China during the Tang Dynasty (which lasted from 618 to 907). But puzzle-creating wasn't new: over 2000 years ago the ancient Greeks enjoyed working with shapes in a puzzle game called *ostomachion*. Historians believe that tangrams arrived in Europe in the 18th century on trading ships. The puzzles caught on during World War I and have since grown more and more popular.

The Chinese have a story about the origin of tangrams. Once upon a time, a sage (wise old man) was given the job of carrying a special square pane of glass to a far-away king who wanted to add a window to his palace. Glass was a prized treasure back then and the sage was honored to have been chosen for the task of getting the pane safely to its destination. He wrapped the glass in layers of silk and canvas and placed it in his backpack.

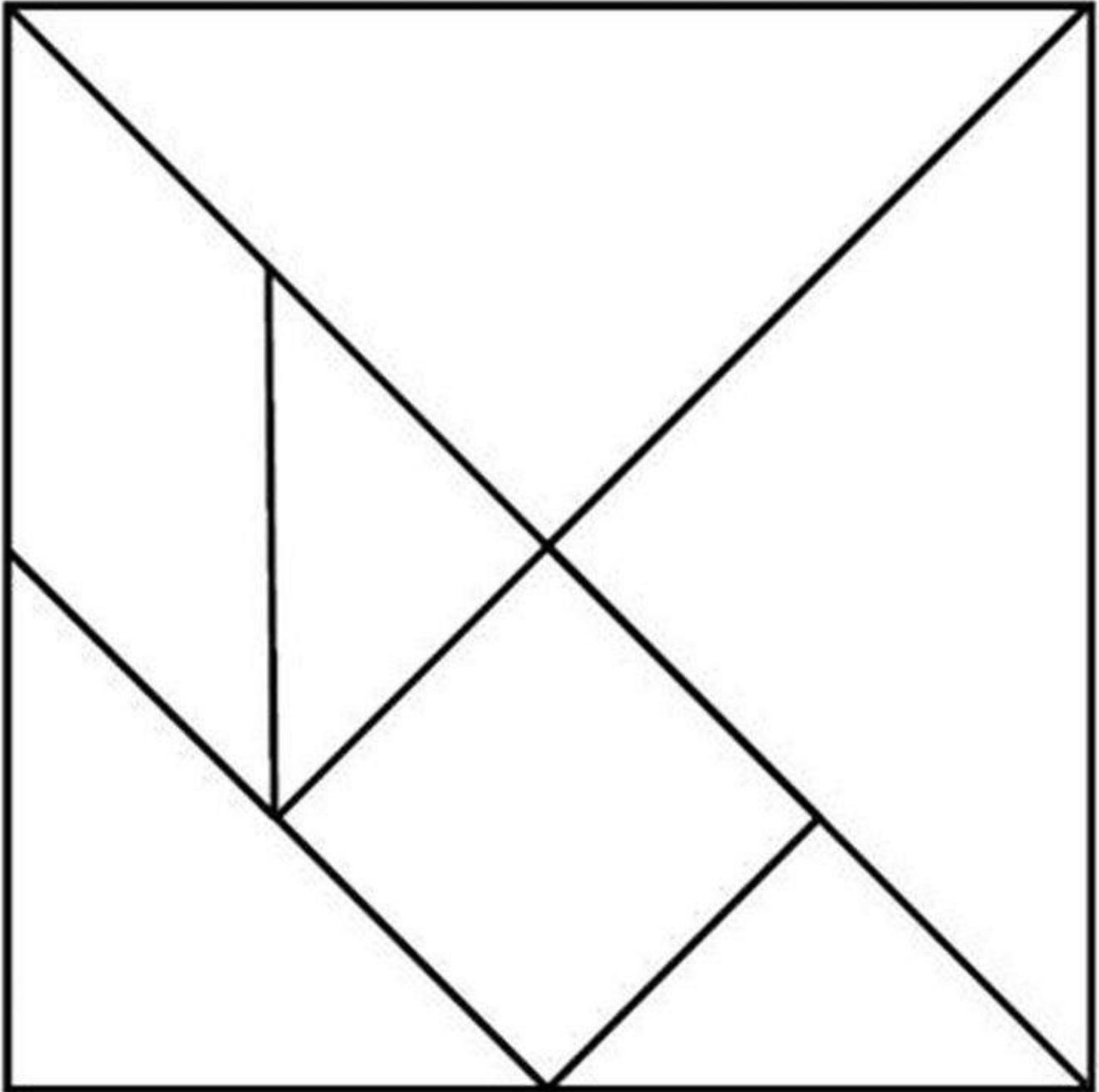
The sage's mission was not easy: He had to cross a desert, river, forest and mountain. At all times, he was careful to keep the glass safe. But though he wound his way over the desert, through the forest, and across the water with success, scaling the mountain proved more difficult: it was high and steep. When the sage reached the top, he shaded his eyes with his hand and gazed over the large vista below. He squinted and saw the king's palace in the distance. His journey was almost over!

And then, he lost his footing. He slid a bit first, struggling to right himself, and then tumbled all the way down, bumping his backpack against rocks and roots. It should come as no surprise that the glass broke during his ordeal.

When the sage met the king, he was embarrassed and apologetic. The king was none too pleased to find out the his square window was in pieces. He asked the sage to unwrap it so that he could view the damage. And then, an amazing thing happened. As the sage removed the silk and canvas, he saw the the glass had broken cleanly into seven perfect geometric shapes.

The king was still displeased, but he watched as the sage moved the shapes around on a table in front of him. He rearranged the pieces into pictures that he used to describe his journey. Much like a magician, he conjured the home he had left, a camel he had noticed in the desert, a monk he had met in the forest, the boat he had used to cross the river and the treacherous mountain that had caused him to fall. The king was fascinated. He found this new puzzle much more interesting than a simple window! He ordered the geometric shapes to be re-created in wood and showed them off to everyone. We have enjoyed playing with tangrams ever since.

Make your own tangram set by printing out the template below on card stock. See the next page for more directions.



**Supplies:** Card stock, Markers, Scissors, Scrap Paper, Smartphone or Camera (if you want to take pictures of your creations). If you want to make a book of your tangram creations, print out your pictures and follow the directions for the Easy Peasy No-Sew Book that follow)

**Procedure:** Print out the template above on card stock. Cut the shapes out carefully. Place each one on a piece of scrap paper to protect your work surface and color it in carefully. If you cut the shapes before you color them, you won't run the risk of having stray marks on them.

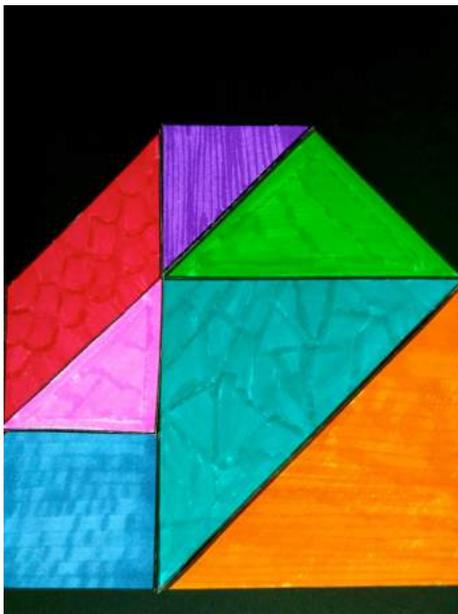
Be sure to take your time to color in your shapes so you don't get scratchy lines. Look at examples of ways to color below:



Don't make scratchy lines!



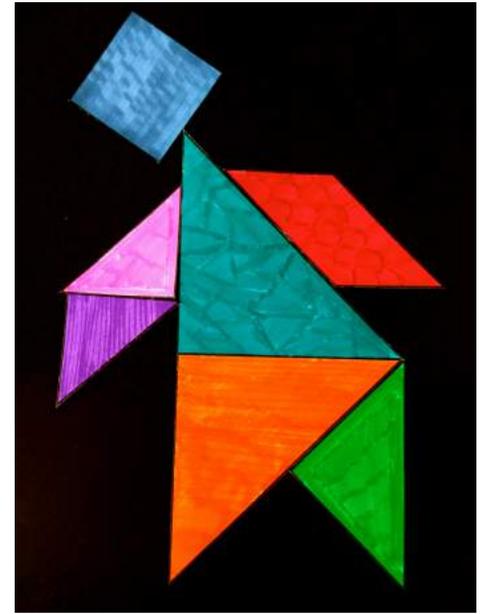
Here's how to color for success: Outline your triangle with a thick line and then color in *or* make a series of smaller shapes and color in each one separately. These techniques help you stay focused by breaking down the coloring work into manageable bits.



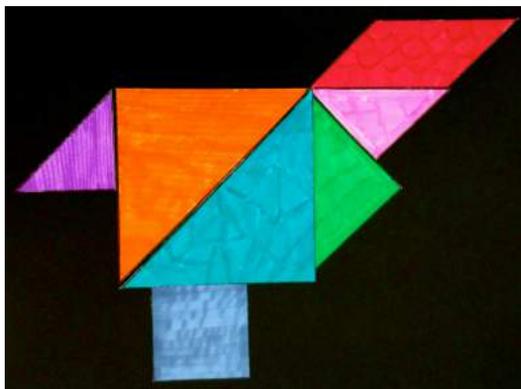
Tangram House



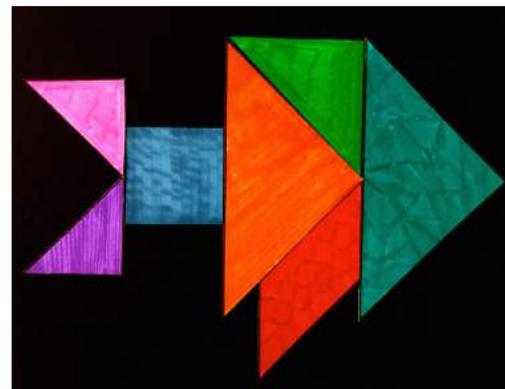
Tangram Person 1



Tangram Person 2



Tangram Bird



Tangram Fish

## Easy Peasy No-Sew Book

Keep your artwork together! Now that you have made some fun tangrams, why not bind pictures of them together into book? The following book uses a manila folder for the cover. Manila folders are great because they have three vertical lines on the left that are easily foldable.



**Supplies:** Manila folder, Construction paper, Pencil, Scissors, Ruler, 3 Small binder clips

**Procedure:** Trim your manila folder to measure approximately 11" by 8". Make sure you trim off any tabs so that you have a nice smooth-edged rectangle. Cut your construction paper pages to be just slightly smaller so they won't stick out past the edges of your cover. Glue your tangram pictures to the construction paper.

Use your ruler to make the following measurements on the lefthand (folded) size of your folder (the folded side is called the "spine"):

**1" from the top**

**5 ½" from the top**

**10" from the top**

Note the three vertical fold lines on the folder. Fold your book cover back along the third line. This will allow you to open your book easily once it is put together.

Slide your construction paper pages into your folder cover. Make sure they line up perfectly against the spine.

Attach your binder clips over the middle of each pencil dot. Use your thumb and index finger to pinch the wire ends together and remove. If this is difficult, ask an adult to help. Your book will remain clamped together.