Grandfather Tang's Story
by Ann Tompert
Crown Inc., 1990
Cost: $15
Grade level: K - 3

This is a Chinese folk tale told with tangrams. Using tangrams, Grandfather tells a story about the shape-changing fox fairies to his granddaughter. Fox fairies are an integral part of Chinese folklore and are believed to be endowed with supernatural powers. In the story, two fox fairies try to best each other until a hunter brings danger to both of them. Using tangrams students can be encouraged to investigate geometrical concepts and to retell or invent their own stories. Another good book for motivating students to use their visual imaginations and explore geometry with tangrams is:

The Tangram Magician
by Lisa Campbell Ernst
Harry N. Abrams, NY, 1990
Cost: $20

This story involves a magician who can change shape, and is illustrated with tangrams. The reader is asked to supply the end of the story by creating the next shape that the magician will take on.

A Three Hat Day
by Laura Geringer
Harper Collins, 1987
Cost: In paperback, $5
Grade level: K-3

This amusing tale about a hat collector and his search for a perfect wife has provided an opportunity for teachers to ask "How many different ways are there to...?", and introduce the concept of systematic counting in combinatorics.

Two of Everything
by Lilly Toy Hong
Albert Whitman & Co., 1993
Cost: $15
Grade level: 1-4

A Chinese folk tale about a couple who finds a magic pot that doubles everything they put into it. The story is retold and illustrated by the author. This is a good starting point for thinking about iteration and exponential growth.

One Hundred Hungry Ants
by Elinor Pinczes
Houghton-Mifflin, 1993
Cost: $15
Grades: 1-3

This is a simple story told in verse of one hundred hungry ants heading towards a picnic. Different formations of 100 ants are tried in order to speed their way to the food, and in the process the author delightfully introduces the factors of 100 and the problem of counting factors. A fun way to inspire mathematical thinking.

Jurassic Park
by Michael Crichton
Random House Inc., New York, 1990
Cost: In paperback $5.99
Grade level: 6-12

Jurassic Park, which connects mathematics, biotechnology and prehistoric legend, has proved to be a "student magnet" in a number of mathematics classrooms and served as a stepping stone to the introduction of fractals. In the beginning of each chapter, the dragon curve fractal is constructed to a few more levels, as a mathematical foreshadowing of the events to come. One eighth grade teacher told us she observed some of the best learning of her teaching career take place, with lessons centered around this novel, as the learning was sparked by real student interest and a real need to know.

Anno's Mysterious Multiplying Jar
By Masaichiro and Mitsumasa Anno
Putnam Publishing, 1983
Cost: $17
Grades 1-6

One of my very favorites and a delight for both the mind and the eye. Simple text and beautiful illustrations tell a tale about a porcelain jar with a sea inside. In the sea is one island, and on the island are two countries, and in each country are three mountains and so on up to 10. This book provides a rich introduction to the the concept of factorials (e.g. 5-factorial, or 5!, is the product $5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$).

I was buying nails and washers at a hardware store to make a classroom set of the Towers of Hanoi. I picked out six washers, each smaller than the one before, and brought them to the counter. The hardware man was concerned that I would have trouble nailing up the largest washer, so told him that I wouldn't be nailing them up anywhere. After a moment's confusion, he exclaimed "Oh, I know what you're doing. You're making that puzzle with the three pegs!" Even the hardware man knows about Discrete Math! — Judy Nesbit (LP 94)