

Three Pigs, One Wolf, and Seven Magic Shapes

November Teacher Directions

The Book

This book is a spoof on the original story of the Three Little Pigs. Three other pigs, cousins of the original three pigs, take off in different directions where they have adventures portrayed in tangram pictures. See what happens when “Big Brad Wolf” arrives on the scene

Other Books about Tangrams

Tangrams: 330 Puzzles, by Ronald C. Read

Grandfather Tang’s Story, by Ann Tompert. An authentic Chinese fairy tale, told in tangrams
(This book is featured in the Let’s Read Math Funbook 1.)

Other Books with Spoofs on the Three Little Pigs (And look for more!)

The Three Little Pigs, by Steven Kellogg. The three pigs work in the family business, making waffles.

The Three Little Fish and the Big Bad Shark, by Will Grace.

“Little Fish, Little Fish, Let me come in.” “Not by the skin on my finny fin fin!”

The Three Little Wolves and the Big Bad Pig, by Eugene Trivizas. What happens to the house of flowers?

The Simple Story of the 3 Pigs & the Scientific Wolf, by Mary Fetzner.

What does the wolf know about simple machines? (Tie this book to your science lesson!)

The True Story of the Three Little Pigs, by Jon Scieszka and Lane Smith.

This is the story of the three little pigs, from the wolf’s perspective.

Math Topics and Common Core Standards

K.G.2 Correctly name shapes, regardless of their orientation or overall size.

K.G.6 Compose simple shapes to form larger shapes.

4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.

7.G.1 Draw, construct, and describe geometrical figures and describe the relationships between them

8.G.1 Understand congruence and similarity using physical models....

Teaching the Lesson

1. Grades K-2: Provide tangrams to students and have them count the seven shapes and identify the square, the parallelogram, and the 5 triangles (2 small, 1 medium, and 2 large). See if they can make a square out of 2 shapes (by putting two right triangles together). More challenging is to make a square out of 3, 4, 5, or all 7 shapes!
2. Grades 3-adult, model making the tangram shapes by cutting a square piece of paper. (Practice ahead of time using the worksheet called “how to make cut your own tangrams.”) Discuss properties of shapes, right angles, 45-degree angles. Use right triangles in different sizes to discuss congruence and similarity.
3. Use your fraction pieces to invent and solve word problems about other math topics – like area, fractions, decimals, percents and money! (See examples on the downloadable worksheet called “Problem Solving with Tangrams.”- See answers below.)
4. Read the story. Show how the 7 shapes are used to form different animals and objects.
5. Use the two Funbook pages (from “Grandfather Tang” in Funbook 1), to practice making tangram pictures and to find right angles in different orientations.
6. Find other examples of tangram puzzles and see if students can make them, using the shapes you made, cut-outs from the book, or a standard set of tangram shapes. For young students, find puzzles where the outlines of the shapes are shown, as in the Three Pig book itself, and the downloadable tangram picture of a turkey. Older students can solve puzzles where the outlines are not shown!

Weblinks

Look for tangram websites online. There are usually several levels of difficulty. Select websites that are appropriate for your age group. (These are recommended for grades 4-5.)

<http://www.abcya.com/tangrams.htm> (This one is recommended for grades 4-5.)

<http://pbskids.org/cyberchase/math-games/tanagram-game/>

Extras in the Book-of-the-Month Packet

The packet comes with a paperback copy of the “Three Pigs, One Wolf and Seven Magic Shapes,” plus hard copies of the Teacher Directions and free downloadable student worksheets. In addition, there is an 8-page booklet that is an abridged retelling of the story, including solid black tangram pictures (without the lines showing). Find out if your students can make the tangram pictures without looking inside the book for guidance!

To Order Your Packet:

Purchase online with a credit card, or fax/email your purchase order to:

*Projects in Education
2102 N. Crescent Blvd
Yardley, PA 19067
FAX: 215-321-7224*

Answers for “Problem Solving with Tangrams”

1. Equivalent Areas: 2,2,2,2
2. Proportional Thinking: 40,20,10,20,20
3. Problem solving: 20,20,10,10,10
4. Fractions or decimals: $\frac{1}{4}$, $\frac{1}{16}$, $\frac{1}{8}$, $\frac{1}{8}$, $\frac{1}{8}$ or .25, .0625, .125, .125, .125
5. Multiplication with decimals and money: (Answers if 1 oz. = \$1345.20)
 $.0625 \times 1345.20 = \$ 84.08$
 $.125 \times 1345.20 = \$ 168.15$
 $.25 \times 1345.20 = \$ 336.30$