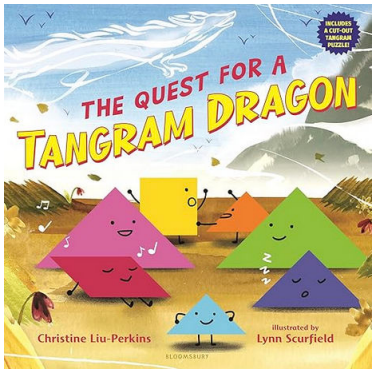


The Quest for a Tangram Dragon

What did the shapes do to find a dragon?

Topics: geometry, shapes

Activities To Do Together:

Use *The Quest for a Tangram Dragon* to explore shapes and to combine shapes to represent objects and animals.

Before reading the book:

- Consider making a set of tangrams. Directions can be found in the Early Math Project's Resources.
- Look at the three types of shapes in a set of tangrams: triangle, square, and parallelogram. Compare the shapes. How are they alike and different?
- Encourage your child to rotate, flip, and move tangram pieces to create an animal.

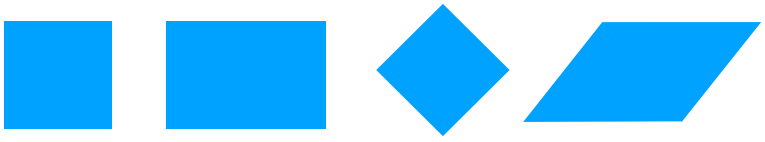
While reading the book:

- Notice together how you can combine the Little Triangle and Second Little Triangle to make other shapes.
- Your child may enjoy creating the butterfly, bat, bird, fish, dog, horse, and dragon with tangram pieces as you read the story.

When you have finished reading the book.

- Talk about parallelograms. A parallelogram is a four-sided shape. Its opposite sides have the same length and are parallel. Its opposite angles have the same measurement.

  These are all parallelograms:



  What other names describe these shapes?

- Challenge your child to use all seven tangram pieces to create a square, a triangle, and a parallelogram. Ask, "Can you make these shapes more than one way?"

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ILLUSTRATOR:
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Little Triangle believes that a kind dragon will bring rain to a thirsty land and sets off to search for a dragon with the help of six other shapes.

Ages: 4 to 8 years

ATOS Reading Level: n/a

Lexile: n/a

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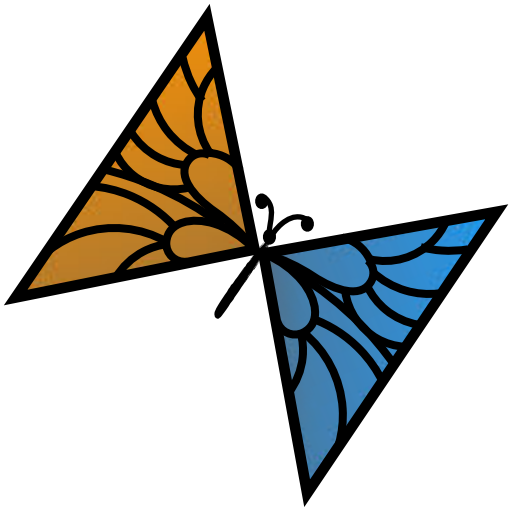


Questions for Mathematical Thinking:

1. What shapes does Little Triangle meet while looking for the tangram dragon? Which shapes are the least like Little Triangle? Why?
2. How did the shapes solve problems they encountered?
3. Describe how the two triangles became a bat. What did they do as a bat to search for a dragon?
4. What did the shapes do when they got to the river?
5. Why did the shapes get discouraged when they tried to reach the top of the mountain? How do you know that Little Triangle was persistent and determined? What did Little Triangle do?

Early Math Project Resources:

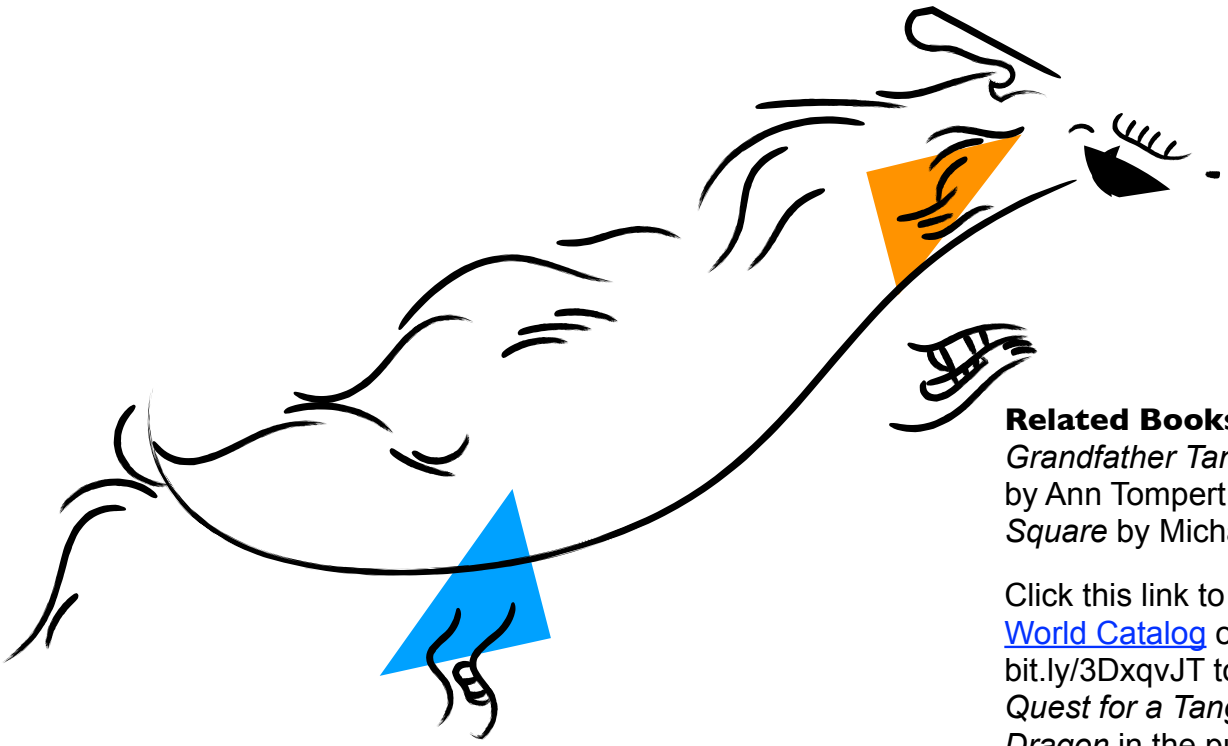
Visit The Quest for a Tangram Dragon (countplayexplore.org/book/the-quest-for-a-tangram-dragon) to find activities and related California Learning Foundations and/or Mathematics Standards for this book.

Vocabulary

Math words found in the story: big, bigger, five, four, little, medium, parallelogram, second, six, small, square, three, triangle, two

Related math words: angle, congruent, equilateral, polygon, quadrilateral, rectangle, rhombus, similar, trapezoid, vertex

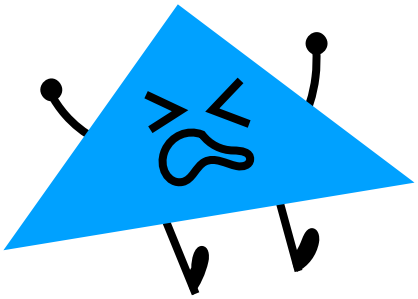
Words to build reading comprehension: adventures, dangerous, flip, grassland, impossible, plodding, quest, shriveled, soared, swiveled, tangram, triumphant, wilted



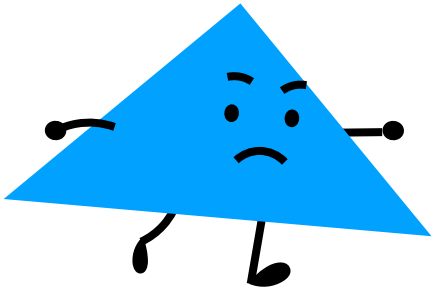
Related Books: *Grandfather Tang's Story* by Ann Tompert; *Perfect Square* by Michael Hall

Click this link to the World Catalog or enter bit.ly/3DxqvJT to find *The Quest for a Tangram Dragon* in the public library.

Math Connections: You can support children's developing ability to identify shapes by exploring the attributes of shapes. Count the sides of the shapes. Notice the shape's angles and the lengths of the shape's sides. Exploring these attributes provides practice and clues that will help children recognize shapes. It's important to focus on the particular attributes that define a shape rather than color or orientation.



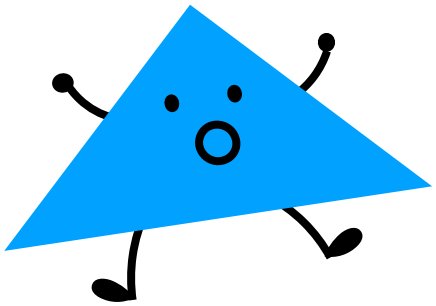
A child seeing the two shapes below will see lots of similarities. They may think the similarities are enough to say the shapes are the same.



Both of these shapes are:

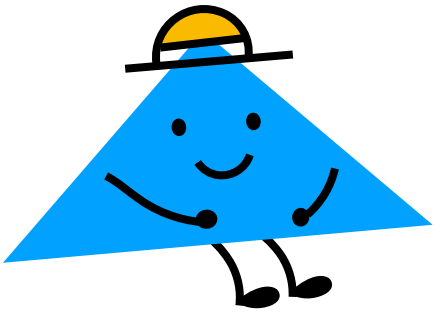
- Blue
- Have Points
- Are fairly similar in size

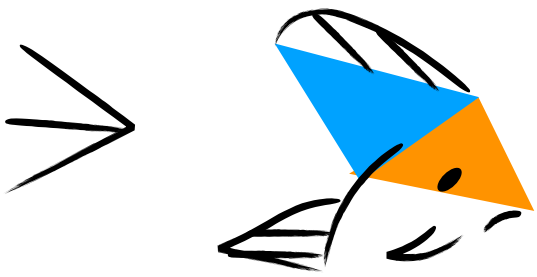
Encourage children to count the shape's sides. With practice they will come to understand that a triangle must have exactly three sides. The sides are all connected and it doesn't matter whether the shape is an outline or filled-in. The color of the triangle doesn't matter. Neither does the way the triangle is turned. It's still a triangle!



Shapes with four-straight, connected sides are called quadrilaterals. The length of the sides, the shape's angles, and whether the shape's opposite sides are parallel are important clues that let us identify quadrilaterals. All of the shapes below are types of quadrilaterals because they have four-straight connected sides.

- A rectangle has two sets of opposite parallel sides and four 90-degree angles.
- A square is a special type of rectangle that has four equal-length sides and four 90-degree angles.
- A rhombus has four equal sides. Its opposite sides are parallel and its opposite angles are equal.
- A parallelogram has opposite sides parallel (squares, rectangles, and rhombuses are all parallelograms).
- A trapezoid has only one pair of parallel sides.



Encourage your child to explore with shapes. They may enjoy:

- Combining shapes to make new shapes, designs, and patterns.
- Creating shape murals.
- Creating numbers 0 to 10 using tangram pieces.
- Going on a shape scavenger hunt to look for a particular shape. For example, hunting for triangles.
- Creating a poster titled, *All of These are Triangles* that shows a variety of triangles in different sizes, orientations, and colors.
- Playing an I Spy game using shape descriptions. For example, “I spy with my little eye a shape that has four sides. Its angles all measure 90 degrees and it’s opposite sides are the same length.” The person guessing would identify the shapes that meet that description nearby.
- Explaining how they know a shape is a triangle or a square and teaching you how they recognized the shape.
- Using a group of shapes to make other shapes. For example, creating a square from two triangles.
- Drawing a triangle and then hunting for other triangles that look different because of the way they are oriented or decorated.
- Creating their own way of remembering the attributes of a quadrilateral, a square, a rectangle, a parallelogram, a rhombus, or a trapezoid.
- Learning about polygons, 2-dimensional closed shapes that are made up entirely of line segments.
    - Pentagons have five sides
    - Hexagons have six sides
    - Heptagons have seven sides
    - Octagons have eight sides
    - Nonagons have nine sides
    - Decagons have ten sides