A tangram is an ancient Chinese puzzle with 7 specific pieces that fit perfectly together to form a square. Those 7 pieces are 2 large triangles, 1 medium triangle, 2 small triangles, a square, and a parallelogram. Children enjoy playing with tangrams and using them to create silhouettes of animals and objects.

I’ve also found that tangrams are excellent for exploring and reinforcing polygon concepts. Duplicate, laminate, and cut apart one set of tangram patterns for each student, or use plastic tangram shapes. Make sure students start by counting to be sure they have all 7 pieces. It’s also best if students who are seated near each other have different colored sets of tangrams.

Start by discussing the various shapes and their attributes, using precise mathematical terms. Then challenge students to create specific polygons with one or more of their tangram pieces, without overlapping them. It’s best to start out very simply with the Tangram Doubles activity on page 7 and work up to the more difficult challenges on pages 10 and 11. Give each student one page and work through each challenge, one at a time, allowing students to demonstrate their solutions on an overhead projector or with a document camera. Students will be able to trace their solutions on that page. For example, students might draw the arrangement shown on the right for the problem, “Create a triangle using exactly 2 pieces.” As the activity pages become increasingly more difficult, you will no longer be able to trace their pieces but will have to draw their solutions to scale.

Please note that some solutions are not possible. For example, it’s not possible to make a rectangle with 2 pieces (unless the rectangle is a square). Students should write “No solution” if they are absolutely certain that it’s not possible to create the given polygon.
Tangram Pattern
Tangram Pattern
Tangram Patterns

- Pattern 1
- Pattern 2
- Pattern 3
- Pattern 4
Tangram Patterns
<table>
<thead>
<tr>
<th>Tangram Duos</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Create a triangle</strong> using exactly 2 pieces.</td>
</tr>
<tr>
<td>Create a <strong>parallelogram</strong> using exactly 2 pieces.</td>
</tr>
<tr>
<td>Create a <strong>triangle</strong> using exactly 3 pieces.</td>
</tr>
<tr>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Create a <strong>parallelogram</strong> using exactly 3 pieces.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
**Tangram Quads**

<table>
<thead>
<tr>
<th>Create a <strong>triangle</strong> using exactly 4 pieces.</th>
<th>Create a <strong>square</strong> using exactly 4 pieces.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Create a **parallelogram** using exactly 4 pieces.

Create a **trapezoid** using exactly 4 pieces.
Tangram Polygon Challenge

Try making the polygons using different numbers of tangram pieces. Draw your findings on the chart below. Some solutions may not be possible.

<table>
<thead>
<tr>
<th>Number of Pieces</th>
<th>Square</th>
<th>Triangle</th>
<th>Rectangle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name _____________________________
Try making the polygons using different numbers of tangram pieces. Draw your findings on the chart below. Some solutions may not be possible.

<table>
<thead>
<tr>
<th># of Pieces</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Square</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triangle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trapezoid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parallelogram</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pentagon</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
Teaching Multiple Intelligence Theory

Bingo Showdown:
  Confusing Words Review

Character Bio Reports

Analyzing Character Traits

Powerful Poetry Combo

Plural Noun Showdown

Sentence Go Round

Writing Powerful Poetry

Geometry: Exploring the Basics

Math Stations for Middle Grades (3-8)

Mastering Math Facts

Polygon Explorations

Polygon Explorations (Smartboard)

Place Value Spinner Games

Fraction Spinner Games

Simplify and Snap Fraction Game

Order of Operations Bingo

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November

December

January

February (Free!)

March

April
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