Build Big Shapes

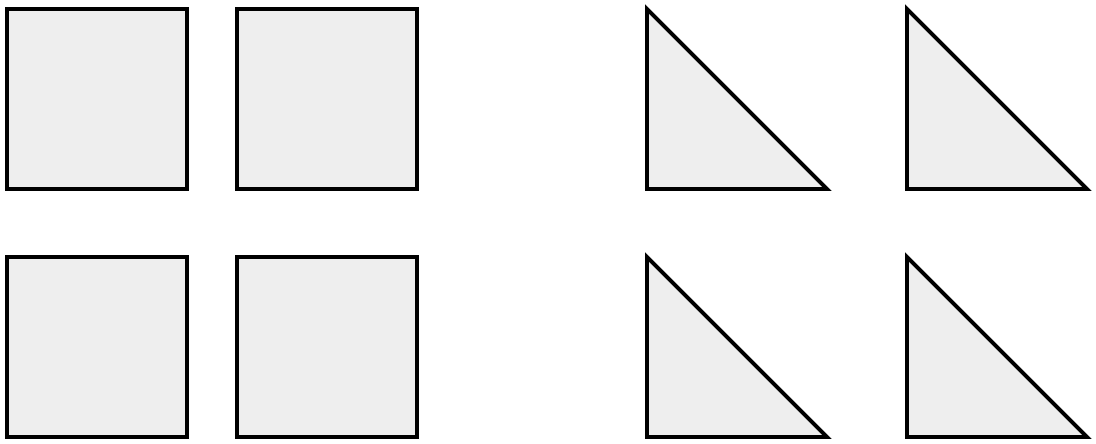
Put small squares and triangles together to fill bigger shapes.

Name: _____ Date: _____

Part 1 - Cut Out Your Shape Pieces

Listen: Your teacher will tell you how to use these pieces safely. Keep all 8 pieces in a pile. Cut carefully on the outside lines.

4 squares and **4 triangles**



Do not glue the pieces. You will move and turn them in the next part.

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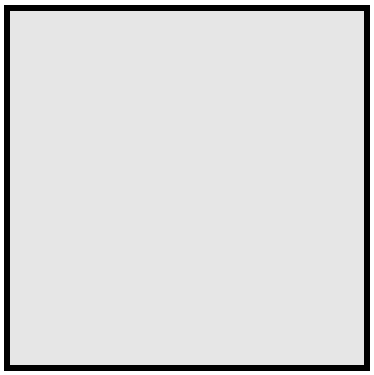
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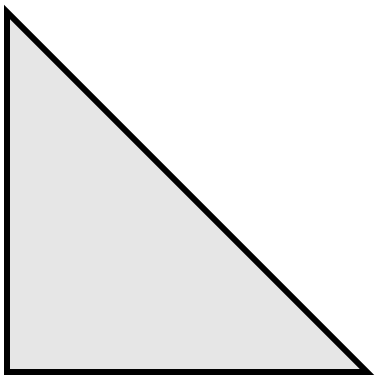
Part 2 - Fill the Big Shapes

Put pieces inside each gray shape. Turn pieces if you need to. The pieces must cover the gray shape with no gaps and no overlaps.

1. Use **all 4 squares**.



2. Use **all 4 triangles**.



When both shapes are filled, show your teacher before you put the pieces away.

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Part 3 - Make Your Own Big Shape

3. Make a new shape with **3 or more** pieces. Use at least **1 square** and **1 triangle**. Place the pieces with no overlaps. Then draw the outside of your new shape.

I used _____ squares and _____ triangles.

Tell about your shape. You may say where you put the pieces.

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Answer Key and Teaching Notes

Setup: Print and supply all student pages, keeping teacher-key pages separate. Print the cutout page at 100% scale on plain paper or light cardstock. Before class, cut one teacher demonstration set. Place scissors, pencils, and optional zip bags or envelopes for pieces at each workspace. Students need the supplied cutout page; no outside pattern blocks are required. If using classroom substitute pieces instead, provide four congruent squares with 90-unit sides and four congruent right triangles with two perpendicular legs of 90 units each. These substitute pieces match the printed cutouts and tile the 180-unit target sides as directed.

Materials supplied: student cutouts, two matching silhouettes, and drawing/writing space. **Additionally needed:** scissors, pencils, and optional bags or envelopes.

Teacher script - read aloud: “Today we will build big shapes from small shapes. Cut around each small shape. A piece may be turned, but do not bend it. When you fill a gray shape, every part of the gray shape should be covered once. There should be no empty spaces and no pieces on top of other pieces. Raise your hand when you have filled both shapes.”

Observation method: As students work, look directly at each silhouette before pieces are moved. Record 1 if the student uses the required pieces, covers the target exactly, and has no gaps or overlaps; record 0 if not yet. Prompt only with: “What do you notice along this edge?” For Part 3, note whether the student uses at least three pieces including a square and a triangle, makes a non-overlapping composition, and gives a related drawing or explanation.

Answers:
1. Four squares form the large square in a 2-by-2 arrangement. Each small square fills one quarter of the target.
2. Four right triangles form the large right triangle. Valid arrangements may differ because students can rotate the triangles. Accept any arrangement that uses all four triangles and exactly tiles the target.
3. Answers vary. Sample acceptable response: Place one square in the middle, attach one triangle to the top side, and attach one triangle to the right side. The student draws the outside boundary and writes, “I used 1 square and 2 triangles. The triangles are on the top and side.” Other valid compositions are acceptable if they meet all directions.

Important language note: Do not ask students to choose between “square” and “rectangle.” A square is also a rectangle in mathematics. This activity assesses composing shapes, not exclusive shape naming.

Source credit: New York Next Generation Mathematics Learning Standards, NY-K.G.6, “Compose larger shapes from simple shapes.” https://lessonmakerpro.com/standards/ny-nextgen-math/ny-k-g-6