

Make a Tangram Heart Instructions

Thank you for downloading the Heart Tangram. This activity has four levels and can be used with a variety of ages! Print out the Tangram Pieces (pg. 2) on red or pink paper (or white paper and have your children color the pieces). Print out a Make a Heart Level 1 or Level 2 page for each learner based on their ability. (See below.) Level 4 will also need a ruler and possibly a calculator.

Level 1: Match the Shapes

For the youngest learners, print out Make a Heart Level 1 (pg. 3) and give them the Tangram pieces to match to the shapes to make their heart.

Level 2: Make the Heart

All other learners can start at this level by cutting out the shapes and making the heart on the Make a Heart Level 2 page (pg. 4). Emphasize that they must cut carefully if they want the pieces to fit together correctly to make their picture.

Level 3: Measure Area in Square Units

Once the heart is made, the area of the heart can be found. For the learners that are ready to be introduced to area, tell them the smallest triangle is 1 square unit and they will find how many square units their whole heart is by figuring out how many of the small triangle fit into each shape.

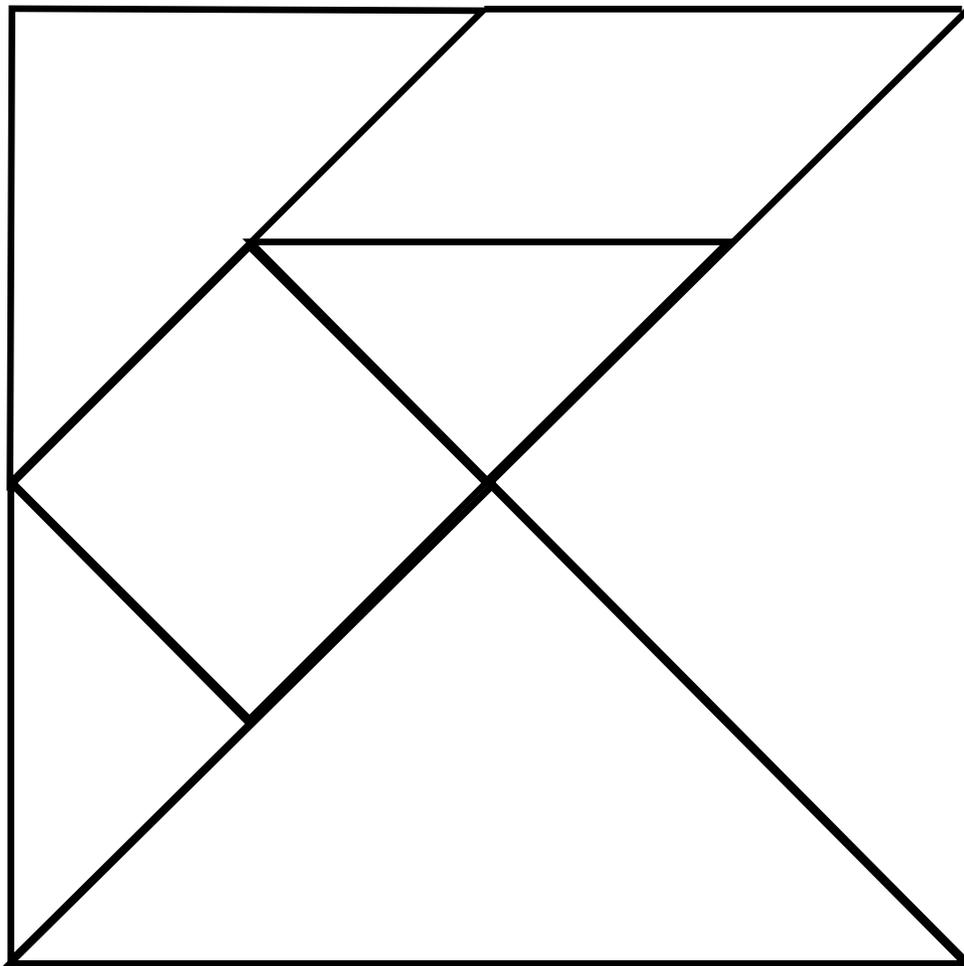
Have them work with one shape at a time figuring out how many times the small triangle will fit into that shape and writing the number on each piece. Once each piece is labeled with its size, have them (or help them) add the numbers together to determine the area of the heart in square units.

Level 4: Measure Area in Inches

Older learners can find the area of the heart in square inches by measuring the shapes and using the formulas for area to determine the area of each shape and then adding them all together. Print out page 5 to provide them with the formulas and an organizer for their work. Children may follow this or may realize there are other ways they could find the total area.

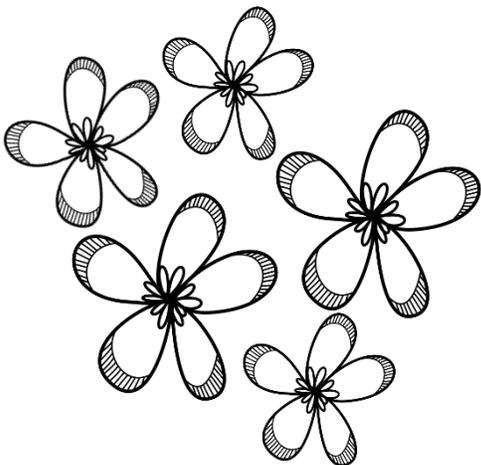
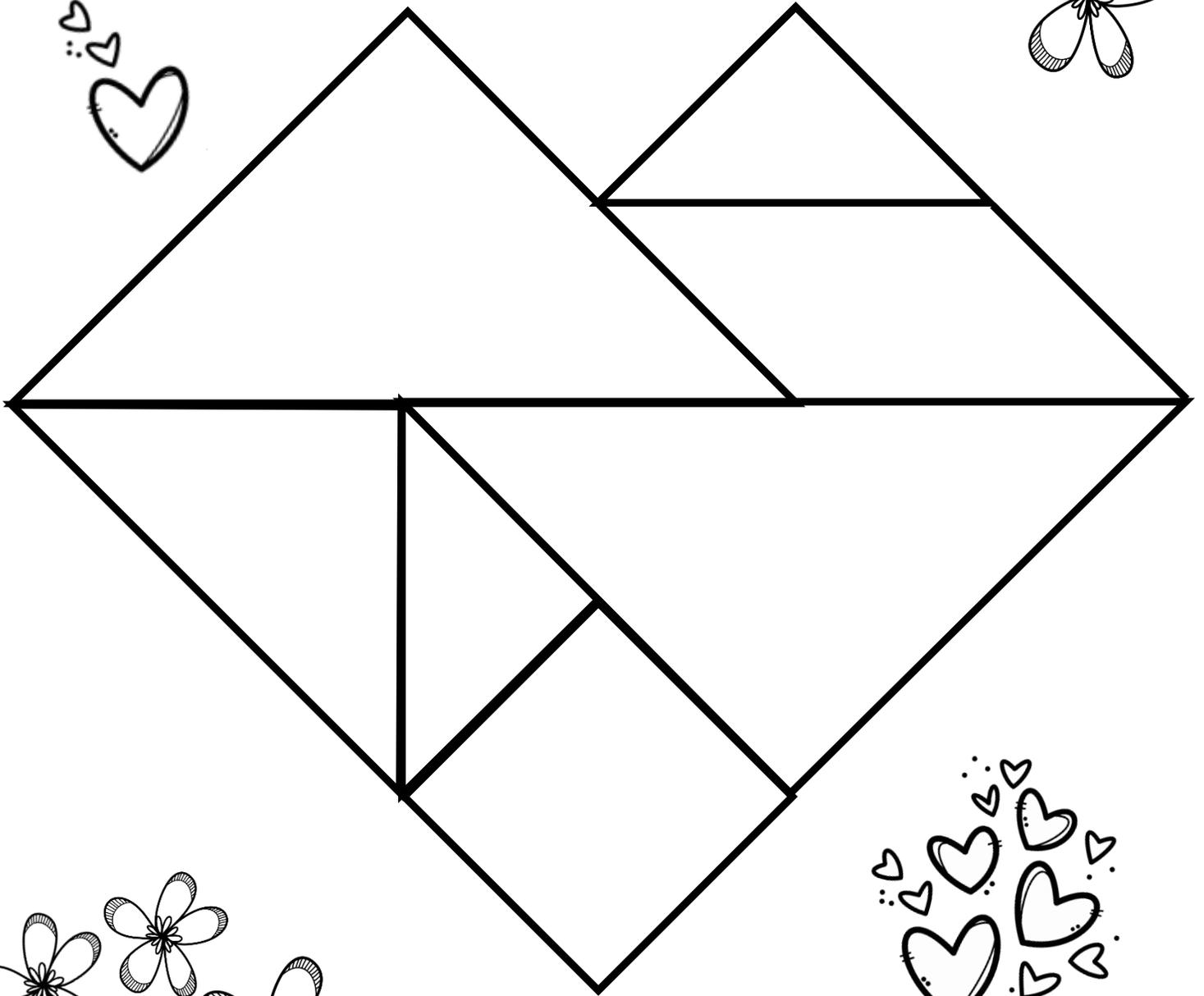
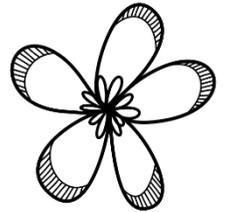
Tips: When measuring, measure to the nearest $\frac{1}{4}$ inch. If children are not ready to multiply fractions, help them convert numbers to decimals and solve equations on a calculator.

Cut Out the Tangram Pieces

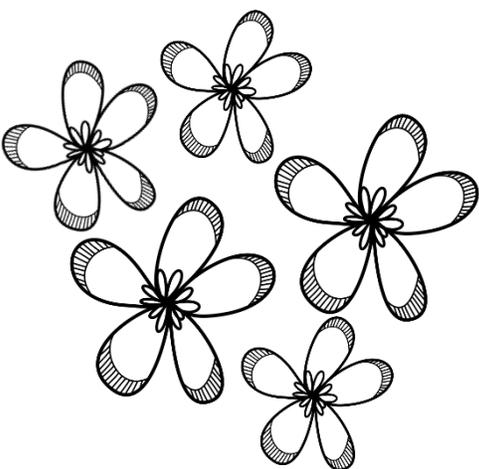
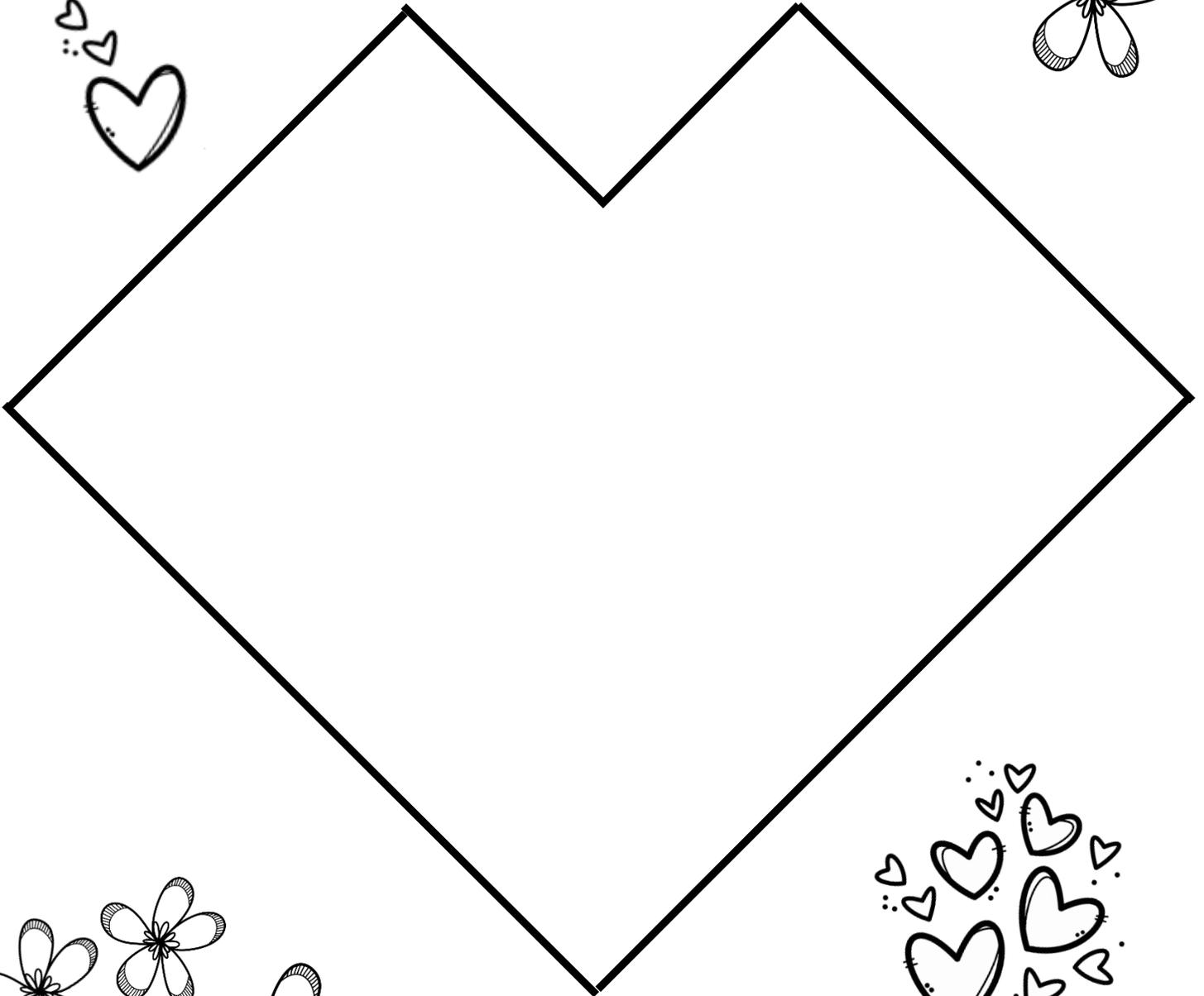
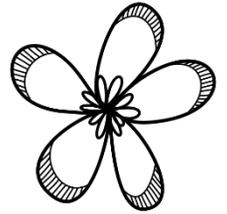


Make a Heart: Level 1

Match the Shapes



Make a Heart: Level 2



The Area of My Heart is:

Find the Area of the Heart

To find the area of the heart, find the area of each piece and then add them together. Give your answer in square inches.

Square

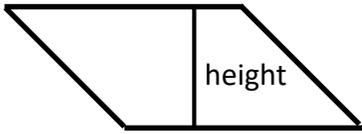
Area = length x width

Area = _____ x _____ = _____

Answers

Parallelogram

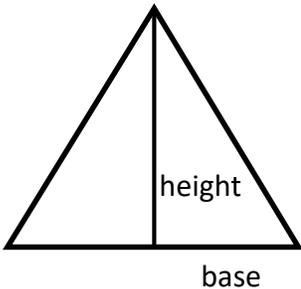
Area = base x height



Area = _____ x _____ = _____

Triangles

Area = $\frac{1}{2}$ base x height



Small triangles (two of them)

Area = _____ x _____ x $\frac{1}{2}$ = _____

Medium Triangle

Area = _____ x _____ x $\frac{1}{2}$ = _____

Large triangles (two of them)

Area = _____ x _____ x $\frac{1}{2}$ = _____

Total Area

Answer Key

Level 3: Measure Area in Square Units

Area = 16 square units

Level 4: Measure Area in Inches

Area = $24 \frac{9}{16}$ square inches or 24.5625 square inches

Square = $3 \frac{1}{16}$ or 3.0625 square inches

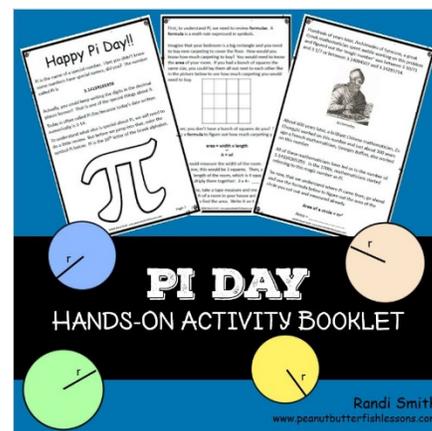
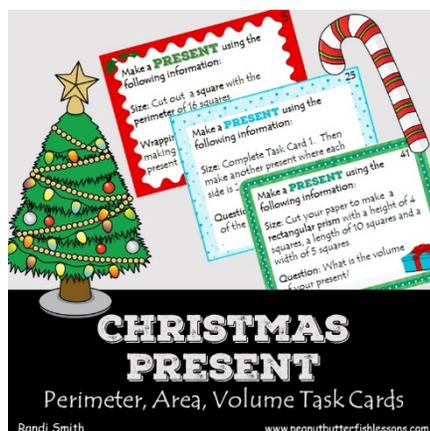
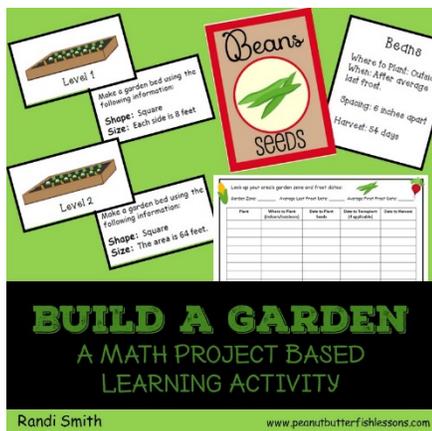
Parallelogram = $3 \frac{1}{8}$ or 3.125 square inches

Small Triangle = $1 \frac{17}{32}$ or 1.53125 square inches

Medium Triangle = $3 \frac{1}{16}$ or 3.0625 square inches

Large Triangle = $6 \frac{1}{8}$ or 6.125 square inches

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Thank you, Randi Smith