LINES OF SYMMETRY

Objective: Determine the number of lines of symmetry for various geometric Shapes.

Materials: Lines of Symmetry Activity Sheet
Lines of Symmetry Activity Sheet Transparency (cut apart)
One transparent geoboard and rubber bands for the trainer
Scratch Paper

Procedures:

1. Instruct each group to elect a secretary to do the writing. Ask the secretary to make a list of the people at his or her table at the top of a piece of paper. Pass out scratch paper if the participants need it. Next, ask them to number down one side of the paper, one through six.

2. Hold up your model of a square, constructed on the geoboard and ask the members of each group to decide how many lines of symmetry it has. Tell them to write that number beside the number one.

3. Next, hold up your model of a rectangle, constructed on the geoboard, and ask the members of each group to decide how many lines of symmetry a rectangle has, and to write that number beside the number two.

4. Continuing this process and giving the groups time between shapes, hold up, one at a time each of the following:

    1. Square

    2. Rectangle (non-square)

    3. Parallelogram (non-rectangle)

    4. Right Triangle

    5. Regular Hexagon

    6. Circle

5. After all of the groups have decided on their answers, pass out one activity sheet to each group.

6. Instruct them to fold each figure on the activity sheet and check out their answers. If they want to change some of their answers they may.

7. Discuss each shape, and its number of lines of symmetry, as you draw in the lines of symmetry on the transparency, displaying one figure at a time.

Notes:

1. Answers:
   1. Square - 4 lines of symmetry
   2. Rectangle - 2 lines of symmetry
   3. Parallelogram - 0 lines of symmetry (You can divide it in half, but when folded along the line the corresponding corners do not lay exactly on top of one another)
   4. Right Triangle - 1 line of symmetry if it is isosceles
   5. Regular Hexagon - 6 lines of symmetry
   6. Circle - infinite number of lines of symmetry

2. If you are running short of time, instead of building each figure on the geoboard, you may want to just put the piece of transparency on the overhead that has each shape when you ask the participants to decide how many lines of symmetry they each have.

3. Participants who use cooperative learning in their classrooms will especially like this activity.

4. If you include equilateral triangles and just look at regular figures a nice pattern of number of diagonals in regular figures emerges.

5. If you include the rhombus in this activity, the square is both a rectangle and a rhombus and it has the lines of symmetry for both categories.

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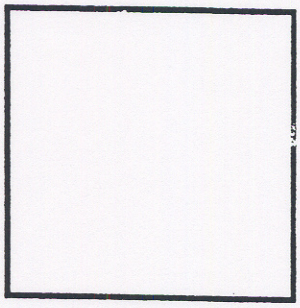
Fold to verify lines of symmetry.

1.



2.

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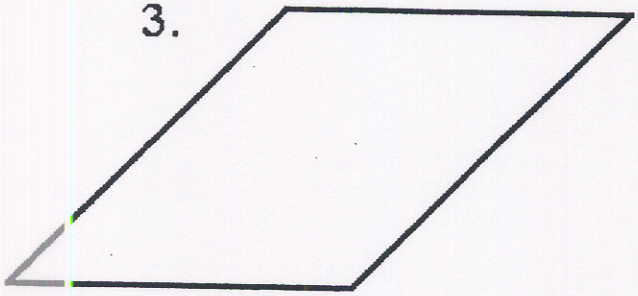

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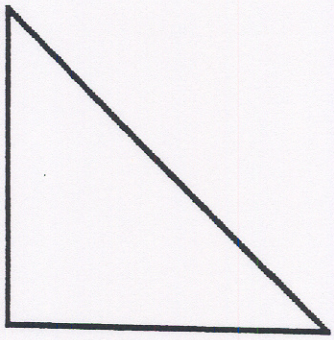

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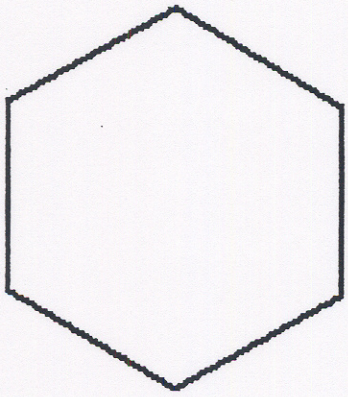

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