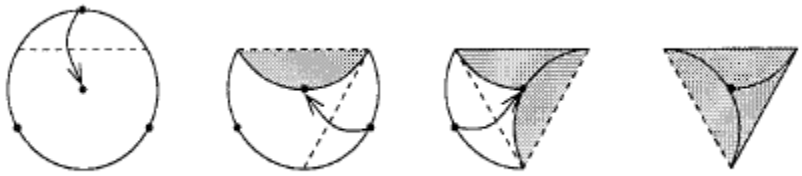
# Pattern Block Paperfolding

Adapted from Foreman & Bennett, 1996

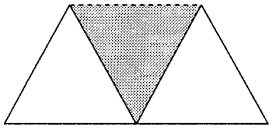
1. Cut out the **Circle Pattern** and then fold it so the 3 points of the circle coincide with the center of the circle, as shown below.



2. Collaboratively brainstorm a list of observations and conjectures about the attributes of the folded figure. It can be helpful to have an image of each **Pattern Block Piece** and space to record observations and conjectures on a whiteboard or chart paper.

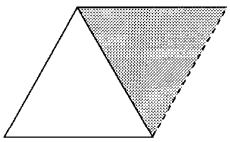
   Press students to develop and use informal methods to verify their observations and conjectures. *Example: Someone states, "all the angles are congruent." This can be verified by matching the figure with someone else's figure and then turning one 1/3 turn and matching angles again.*

3. Locate and mark by creasing lightly, the midpoint of one side of the triangle. Then fold the opposite vertex to that midpoint, as shown below.



   Discuss and write a list of the attributes of this new shape. As before, develop and use informal methods to verify your observations.

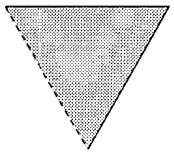
4. The trapezoid formed above consists of three triangles. Fold one of the end triangles over the middle one as shown below.



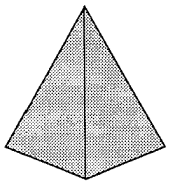
   List, verify, and discuss the new figure's attributes.

Foreman, L. C., & Bennett, A. B. (1996). *Visual mathematics course II.* The Math Learning Center.

5. Fold the 2 remaining triangles over each other and discuss the results.

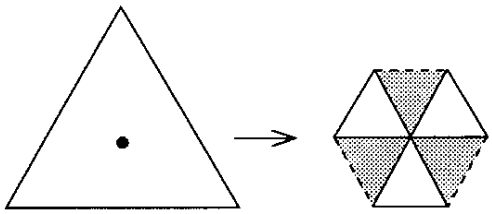


6. Allow the 3 triangles to open up and come to a point, as shown below.



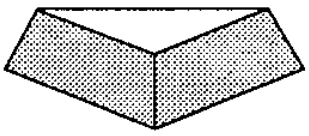
List, verify, and discuss the new figure's attributes.

7. Open the figure back up to the large equilateral triangle and fold the three vertices to the center point as shown below.



List, verify, and discuss the new figure's attributes.

8. Lift the points folded over for the previous figure and carefully push them toward the center to form the 3-dimensional figure shown below.



List, verify, and discuss the new figure's attributes.

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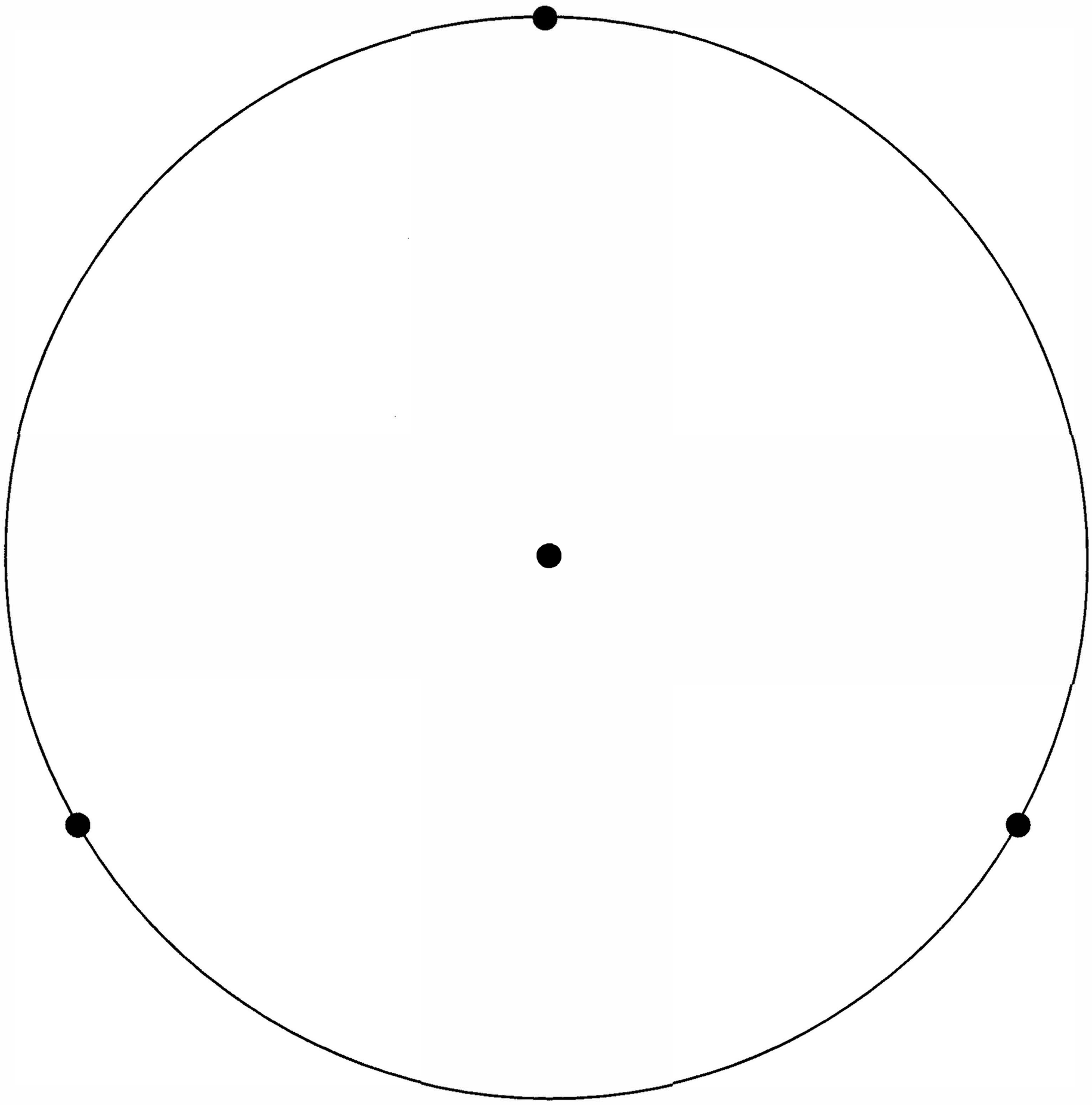
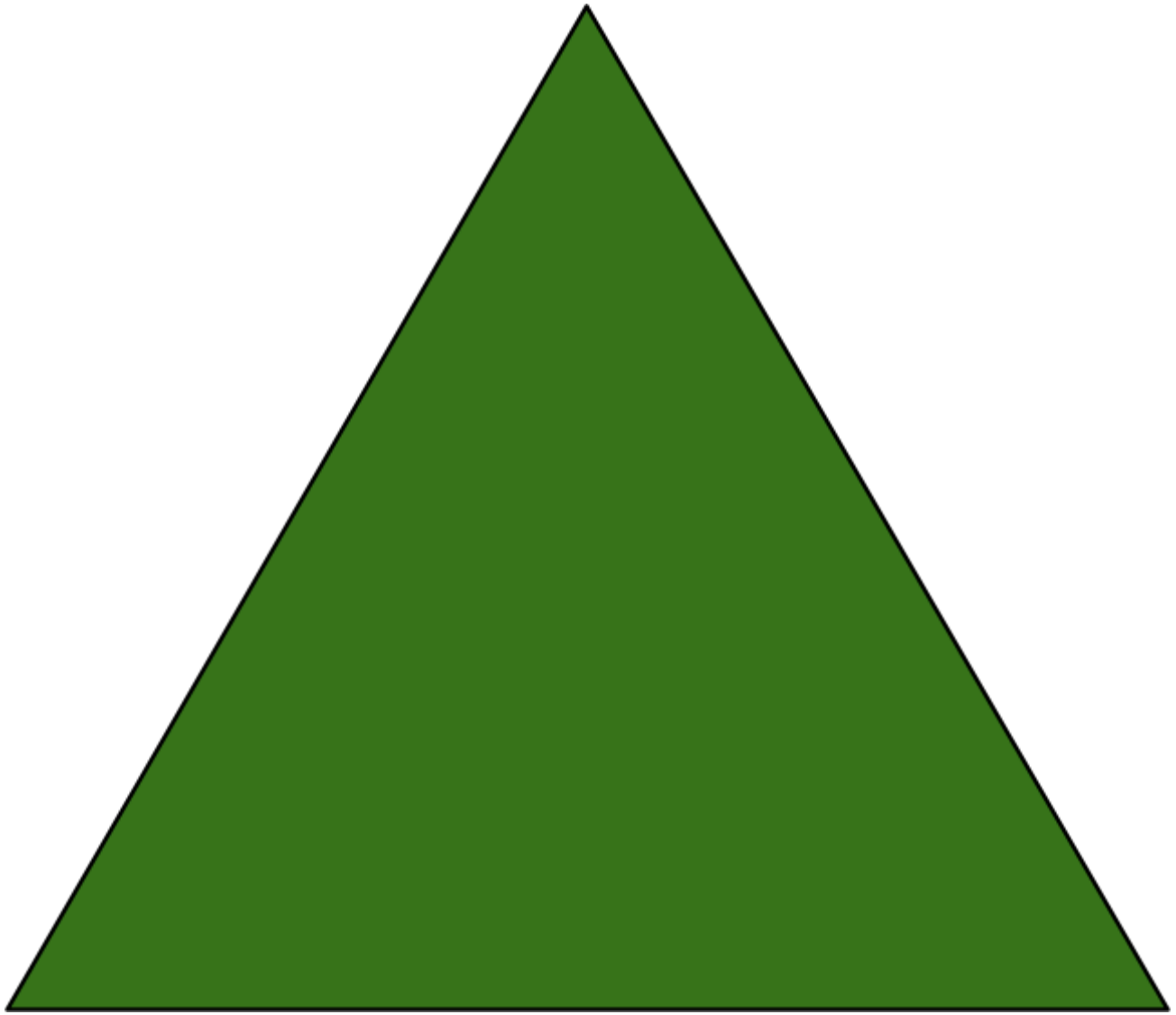
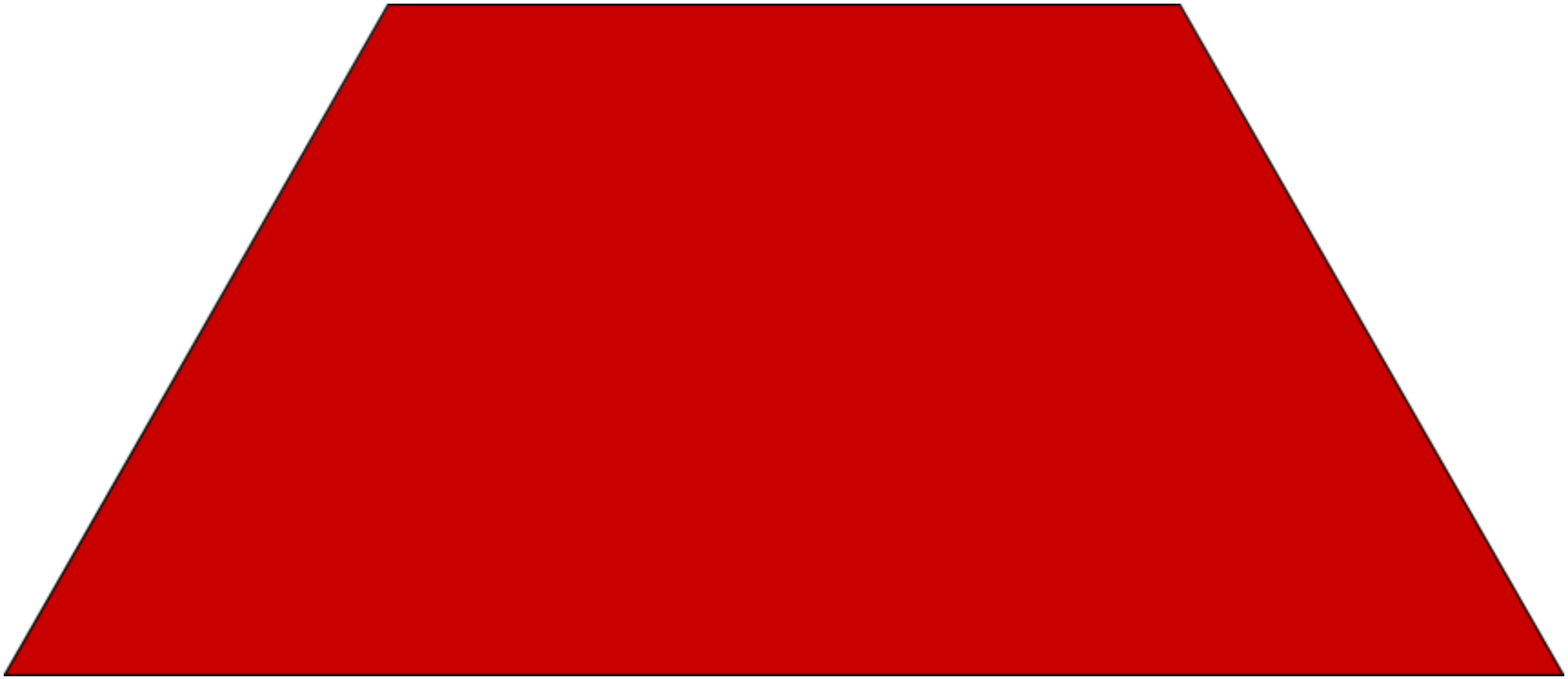
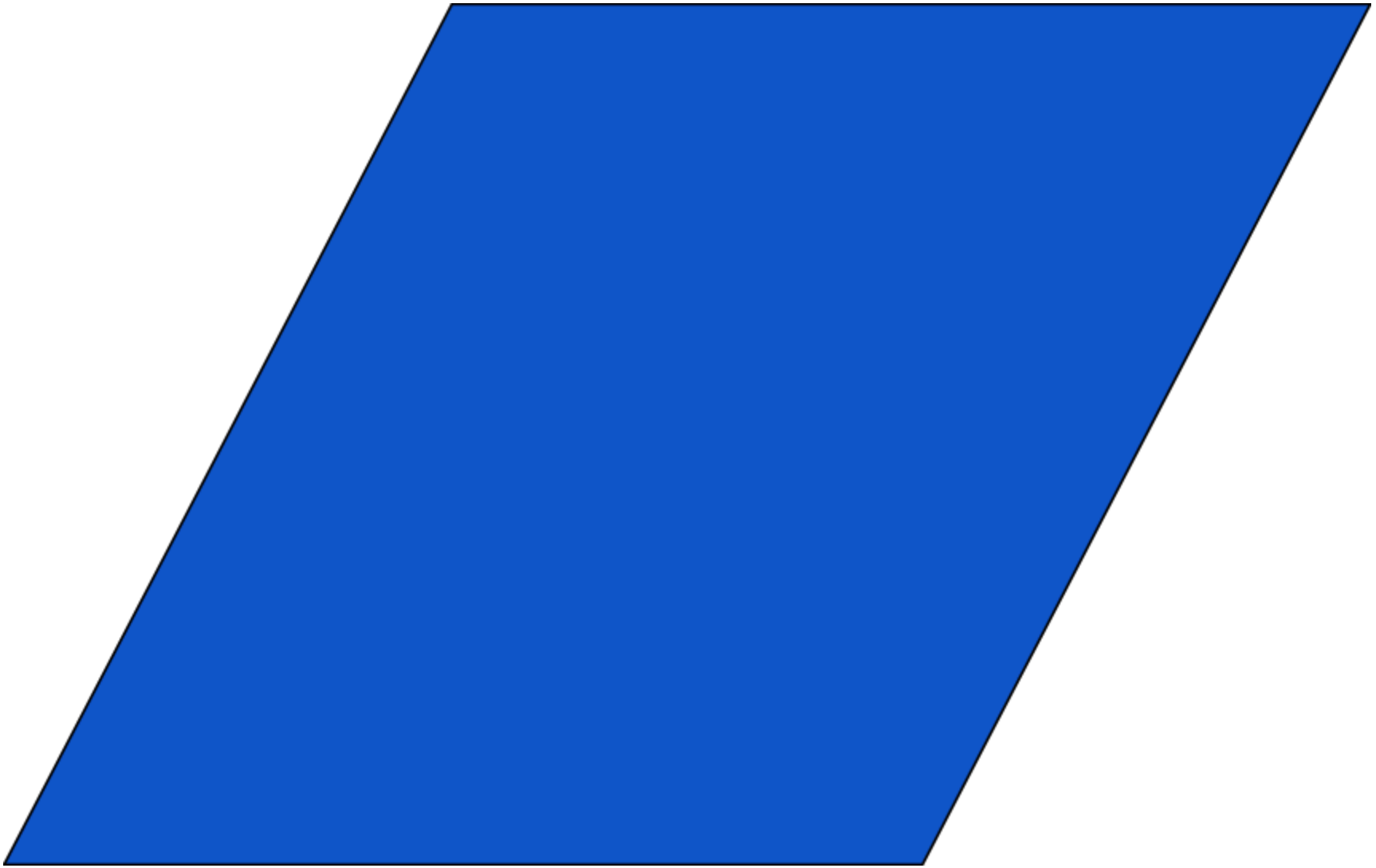
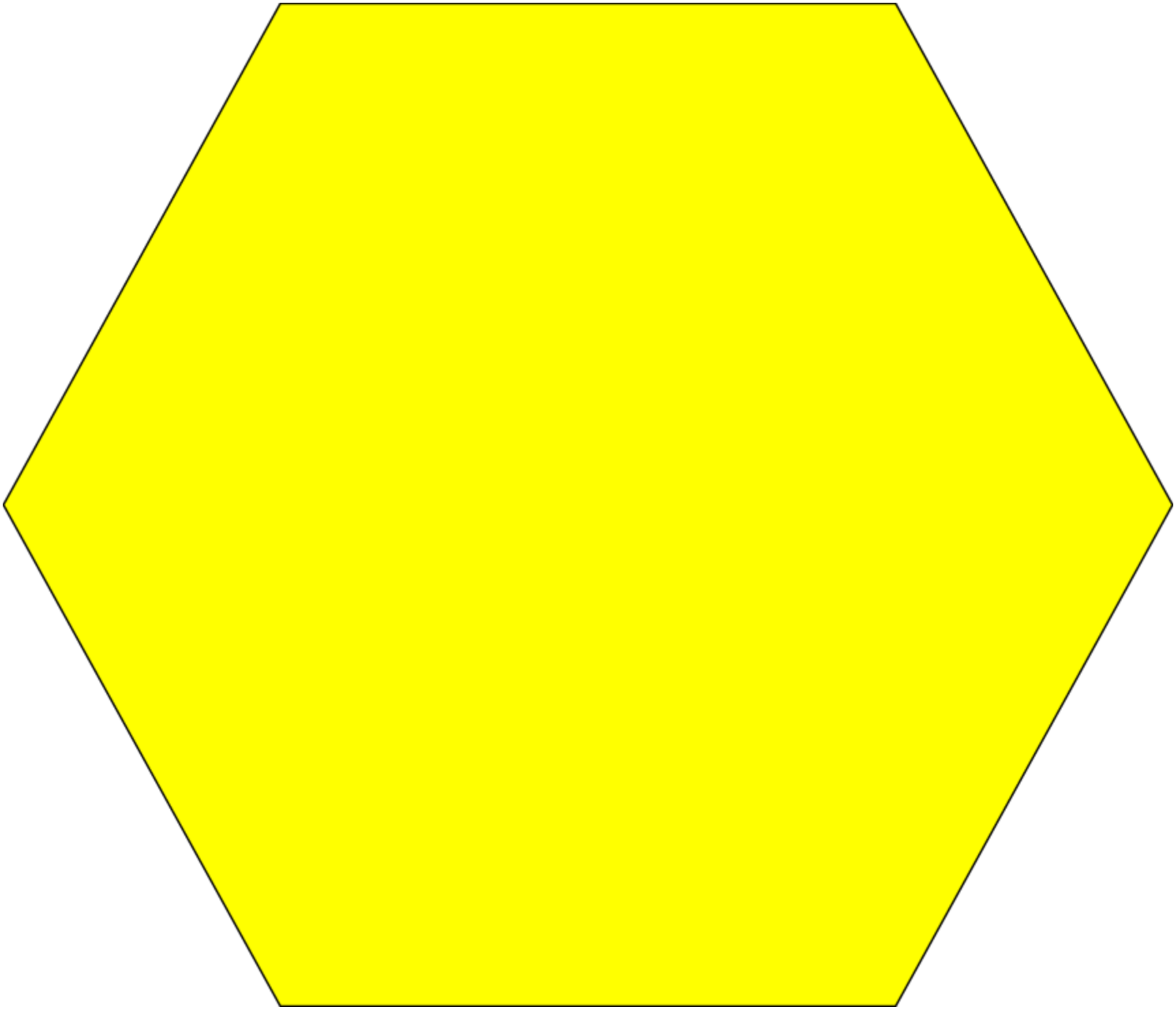
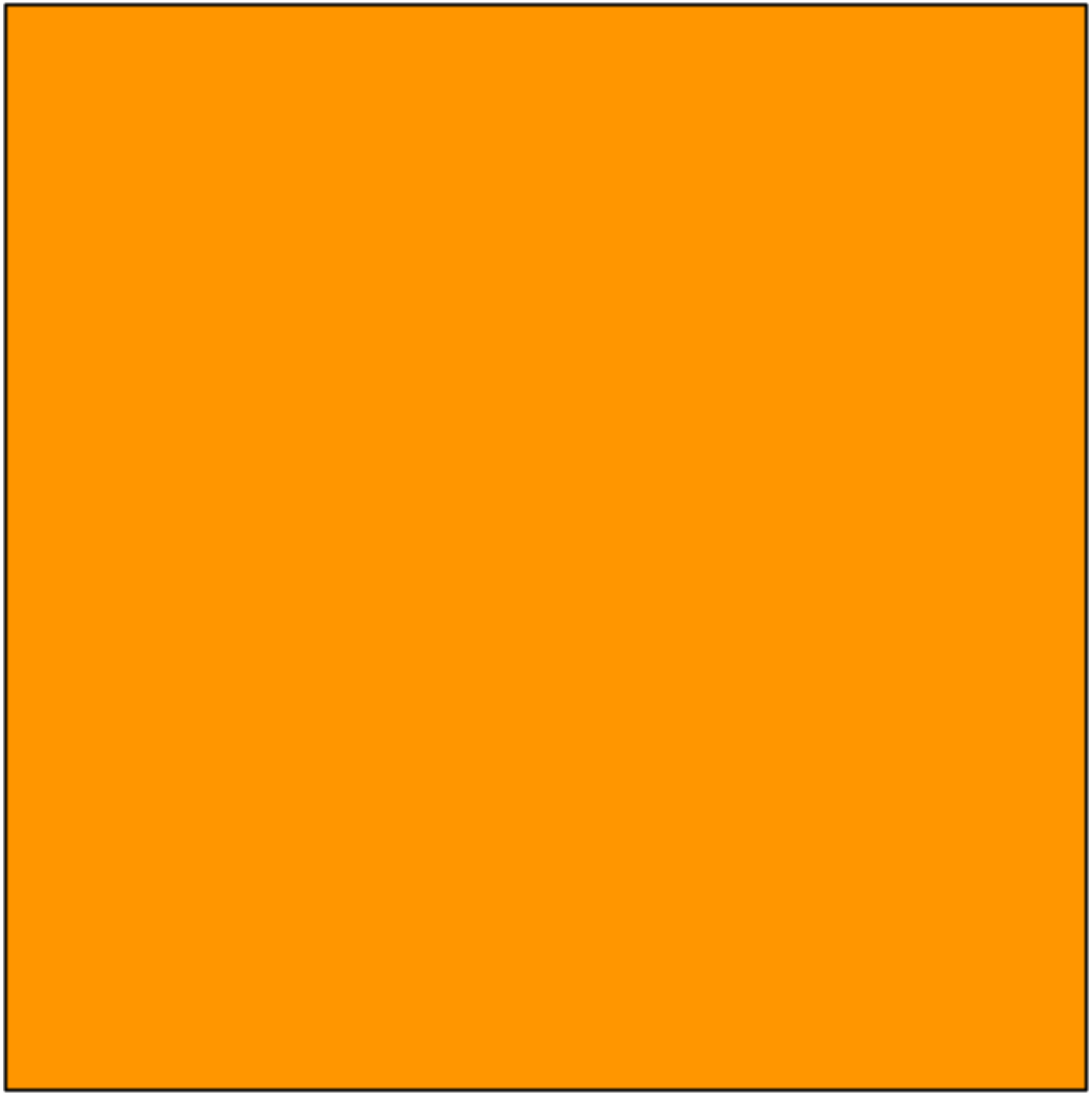
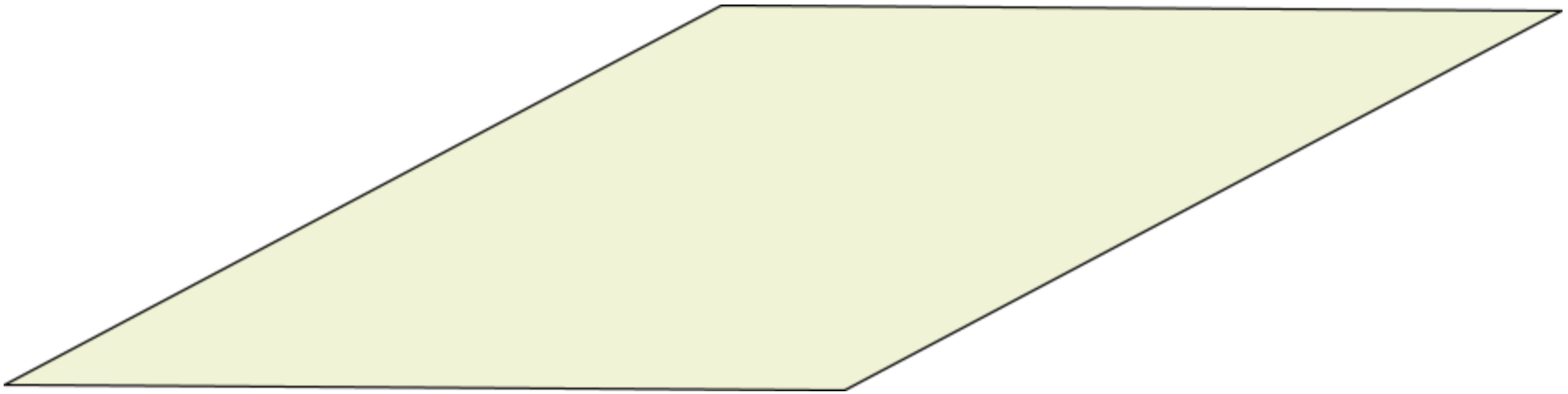
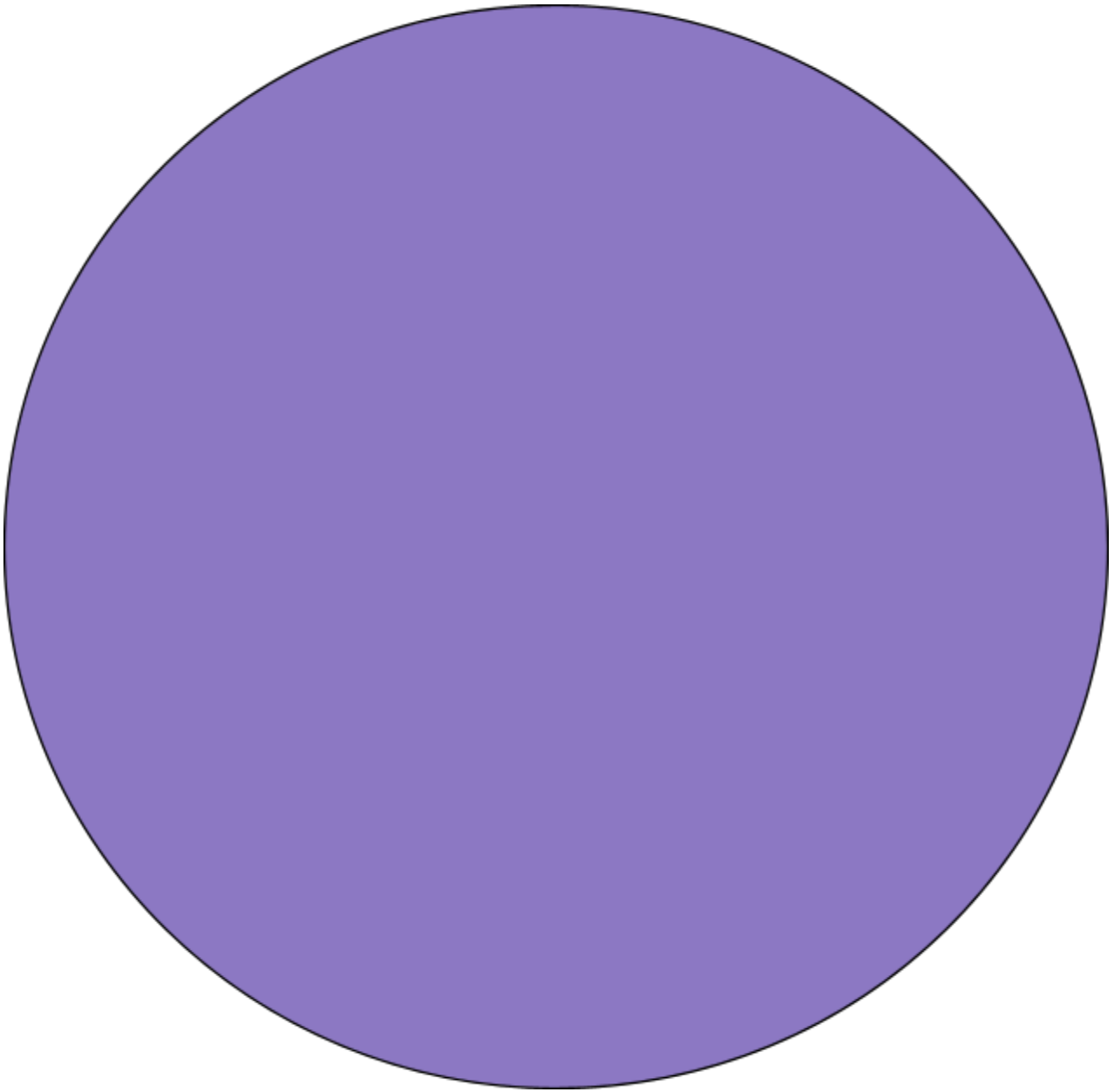
# Circle Pattern



# Pattern Block Pieces