

Pattern Block Perimeter and Area

Materials

1 set of the following per student: 1 hexagon, 3 trapezoids, 3 triangles, and 3 parallelograms to form a design.

1. Have students examine the pattern blocks provided. Ask them to determine the area. The responses will depend on the unit they use. (Using triangles as the unit, the area is 24. Using parallelograms it is 12, etc.). Proceed slowly to build understanding. Connect this to the Compensatory Principle—the larger the unit, the fewer needed
2. Ask everyone to use the area as 24 triangles for simplicity.
3. Next ask students to find the perimeter of each of the pattern blocks in units the size of a side of the triangle. Make sure they realize that the “long” side of the trapezoid is counted as 2 units.
4. Ask students to make a design using all the pattern blocks and record its perimeter and area.
5. Have a volunteer show their design (overhead or doc camera or sketch on board) and have the group determine the perimeter and area.
6. Repeat design sharing, finding perimeter and area of each shared design.
7. Ask participants to make a design with the smallest perimeter. Share results to see what the smallest perimeter is, noting the area has not changed.
8. Then ask them to make a design with the largest perimeter. Share results, noting unchanged area.
9. Ask what they notice. (The more “compact”, the design, the smaller the perimeter. When the design is “stretched out”, the perimeter was larger.
10. Ask if the area changed.
11. Conclusion: THE AREA STAYED THE SAME BUT THE PERIMETER CHANGED.
12. If desired, paper may be provided for children to record their designs.