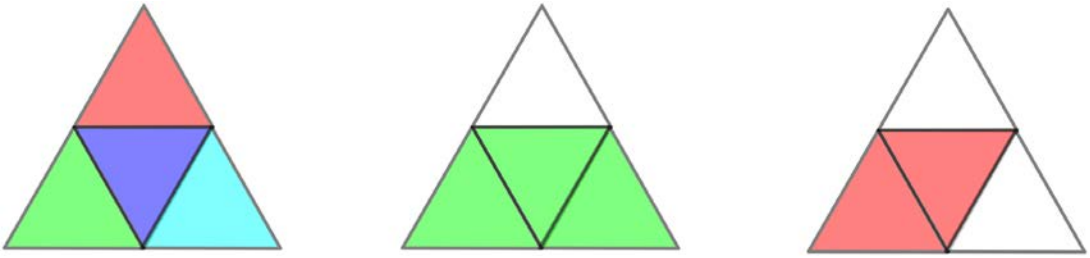
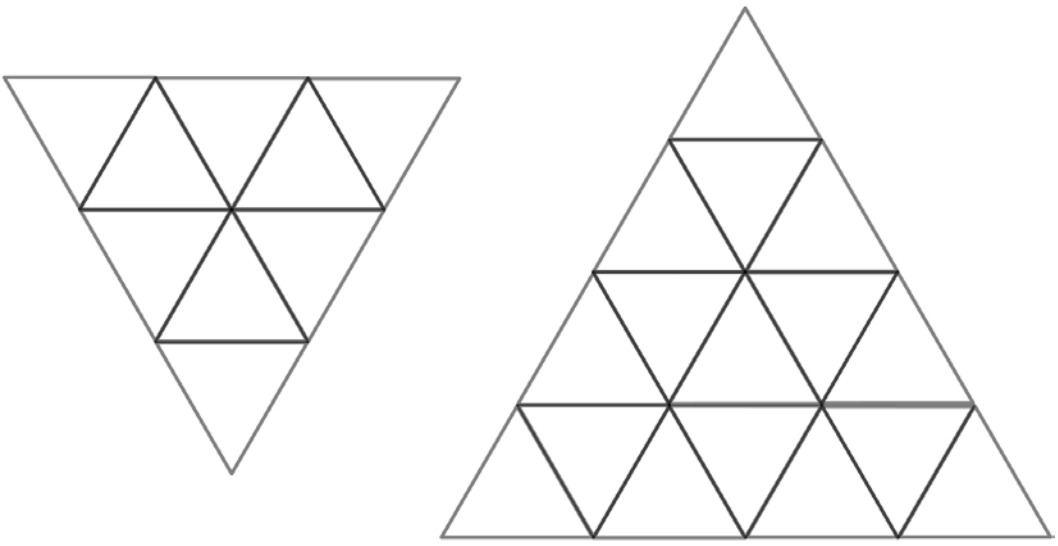
Puzzle of the Week
Finding the Pieces – 2

A ***trapezoid*** is a four-sided figure that has exactly one pair of parallel sides (parallel lines in a surface are lines that never meet). A ***parallelogram*** is a four-sided figure that has two pairs of parallel sides. In the large triangle on the left, there are five triangles marked – the four colored triangles and the entire triangle. The same large triangle in the middle has one of its three trapezoids colored in green. The same large triangle on the right has one of its three parallelograms colored in red.



THE CHALLENGE: In each of these figures, count the number of triangles, trapezoids, and parallelograms.



EXPLORATION: Make drawings like these for other people to count the triangles and trapezoids.

Puzzle of the Week
Picking up the Pieces – 2 – Notes

THE CHALLENGE: Work on organized counting using these two figures. The second one requires a lot of careful counting.

The large triangle on the left:

It has 9 small triangles (base 1), 3 intermediate triangles (base 2), and 1 large triangle (base 3), for a total of 13 triangles.

It has 9 small trapezoids (base 2 top 1), 3 intermediate trapezoids (base 3 top 2), and 3 large trapezoids (base 3 top 1), for a total of 15 trapezoids.

It has 9 small parallelograms (sides 1 and 1) and 6 intermediate parallelograms (sides 2 and 1), for a total of 15 parallelograms.

The large triangle on the right:

The large triangle on the right has 16 small triangles (base 1), 7 small intermediate triangles (base 2), 3 large intermediate triangles (base 3), and 1 large triangle (base 4), for a total of 27 triangles.

It has 18 small trapezoids (base 2 top 1), 9 longer small trapezoids (base 3 top 2), 3 very long small trapezoids (base 4 top 3), 9 intermediate trapezoids (base 3 top 1), 3 intermediate longer trapezoids (base 4 top 2), and 3 large trapezoids (base 4 top 1), for a total of 18 + 9 + 3 + 9 + 3 + 3 = 45 trapezoids.

It has 18 small parallelograms (sides 1 and 1), 18 long small parallelograms (sides 2 and 1), 6 longer small parallelograms (sides 3 and 1), and 3 intermediate parallelograms (sides 2 and 2), for a total of 18 + 18 + 6 + 3 = 45 parallelograms.