Unit 1, Lesson 17

Rotate and Tessellate

Let's make complex patterns using transformations.

17.1 Deducing Angle Measures

Your teacher will give you some shapes.

1. How many copies of the equilateral triangle can you fit together around a single vertex, so that the triangles' edges have no gaps or overlaps? What is the measure of each angle in these triangles?

2. What are the measures of the angles in the
   a. Square?
   b. Hexagon?
   c. Parallelogram?
   d. Right triangle?
   e. Octagon?
   f. Pentagon?

17.2 Tessellate This

1. Design your own **tessellation**. You will need to decide which shapes you want to use and make copies. Remember that a tessellation is a repeating pattern that goes on forever to fill up the entire plane.
2. Find a partner and trade pictures. Describe a transformation of your partner's picture that takes the pattern to itself. How many different transformations can you find that take the pattern to itself? Consider translations, reflections, and rotations.

3. If there's time, color and decorate your tessellation.

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17.3 Rotate That

1. Make a design with rotational symmetry.

2. Find a partner who has also made a design. Exchange designs and find a transformation of your partner's design that takes it to itself. Consider rotations, reflections, and translations.

3. If there's time, color and decorate your design.

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