MathFLIX CHALLENGE

Pythagorus

This is a pentagram, the secret symbol of the Pythagorean society. This activity will help you see why the early Greek mathematicians were so fascinated by it.

1. What kind polygon is created by $\overline{FGHIJ}$?

2. Is this polygon created anywhere else in the pentagram?

3. Estimate the number of triangles in the pentagram. How many triangles are congruent to $\overline{EDI}$? $\overline{EIJ}$? $\overline{DIJ}$? $\overline{HIJ}$? $\overline{HIF}$?

4. Use a ruler to create line segments $\overline{AD}$, $\overline{AC}$, $\overline{BD}$, $\overline{BE}$, $\overline{CA}$, $\overline{CE}$, $\overline{DA}$, $\overline{DB}$. What polygon did you create?

5. Label the vertices of the new pentagram you created K, L, M, N, O. Use your ruler to connect all of these vertices. What polygon did you create?

6. How many more times do you think you could connect vertices in this same way?