Teaching and Learning Sequence
Geometry Team: Kristi Bean, Sean Cabaniss, Christopher Coleman

Station Arrangement: Three tables (shaped like trapezoids) arranged in a U shape where the three instructors would be on the inside of the U and the students on the outside of the U. Students will be paired up and sharing one of the instructors laptops leaving one laptop for the instructors to use as a model.

Before we begin students will fill out nametags and both instructors and students will introduce themselves. (3 minutes – First Group Only)

(~10 minutes) Define regular polygon (CFU) by:
- What is a regular polygon? A shape that has all angles that are the same and all sides that are the same.
- Use the manipulatives to show what is a regular polygon and what is not
- T Chart: Regular or Irregular Polygon
  - Students will use the manipulatives and put them in the proper category of whether that shape is a regular or irregular polygon this way we can ensure that students understood the previous activity and what the terms mean.
- Introduce Google SketchUp (students will have handouts that have the most commonly used tools in SketchUp). In Google SketchUp show students how to make regular polygons and measure them.

(~ 10 minutes) Demonstration: Interior and Exterior angles

Instructors will use the board and manipulatives and ask students to identify on a drawing on the board, which angle is an interior and which is an exterior angle.

Next instructors will ask students, "How many degrees should the exterior angles add up to?"

This will lead us into using the equation 360 degrees divided/ n (n = number of sides).

Then instructors will ask, "What is the sum of the interior angles of a regular polygon?" [Interior Angle = (n-2) × 180° / n] We will show students how to measure interior and exterior angles in Google SketchUp.

(2-3 Minutes) If there is any time remaining we will then show students how these topics appear in the real world. (i.e. Architecture, Design, 3D creations, etc). We will say our goodbyes and thank the students for their time. [Quite possibly this will be addressed during the lesson as students make connections on their own and we discuss it]

Materials:
Whiteboard markers
Whiteboard
Foam polygons with magnets from manipulatives closet
Plastic polygon set from manipulatives closet
Google SketchUp cheat sheet

Standards Addressed:

Apply geometric concepts in modeling situations

CCSS.MATH.CONTENT.HSG.MG.A.1

Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).*

CCSS.MATH.CONTENT.HSG.MG.A.3
Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).