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Math 4644
Geometry Lesson

This lesson focuses on Virginia SOL's G.2a and G.7:

G.2a The student will use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation. This will include investigating and using formulas for finding distance, midpoint, and slope.

G.7 The student will solve practical problems involving right triangles by using the Pythagorean Theorem, properties of special right triangles, and right triangle trigonometry. Solutions will be expressed in radical form or as decimal approximations.

The foundation for this activity was pulled from a purplemath.com lesson. (Website here: http://www.purplemath.com/modules/distform.htm) I modified the basic premise of the lesson to allow students to actively use Geometer's Sketchpad to discover why the distance formula works. Students first review the usage of the Pythagorean Theorem, then gain practice in applying it to the Cartesian plane. After students have become comfortable with working with the equation in the plane, they are prompted to make the link between the Pythagorean Theorem and the distance formula.

When using this activity in class, students will be working in pairs to help each other recall mathematical concepts and navigate Geometer's Sketchpad. (Students would have been given the Pythagorean theorem and distance formula beforehand.) Then, after the partnered section of the activity, I would have students write in their independent journals with notes taken from each page of the sketchpad file.