

MTH 362 Project – Polygons, Triangles, Quadrilaterals

Choose a secondary geometry topic (from the topics already covered in class - Constructions, Polygons, Triangles or Quadrilaterals) and create a Geogebra or TI-Nspire task (activity, exploration).

Format

The format of the activity/exploration is open. It does not have to be a lesson plan; A shorter task (that might eventually be part of a lesson plan) will do and is preferable. Any secondary level (6-12) can be chosen. Technology must be involved in a meaningful way (i.e. do not use the technology as a mere substitution of traditional tools), but the formats of using it are flexible:

- You may ask your students to start with a blank page, construct an object and observe/discover/justify/discuss something important.
- You may provide your students with a ready-to-use ggb/tns file and ask them to do something with it and observe/discover/justify/discuss something important. Etc.

Your project will contain:

- **A cover sheet** that addresses the objectives of your activity/task, justification of its appropriateness by reference to CCSS, and previous relevant knowledge that the students have before they start working on your activity.
- **A ggb or tns file** (or files). If your students start with a blank page, include an expected final product. If you provide your students with a ready-to-use file, include that.
- **Teacher's notes**. Imagine that your project will be used by another secondary math teacher – provide all the information the teacher needs to carry out the task.
 - How will you introduce the activity?
 - What questions will you ask the students (and in which order)?
 - What are the expected correct answers?
 - What are possible stumble blocks or incorrect students' responses?
 - How should the teacher respond to these stumble blocks or misconceptions?
 - If your students are working individually, when/how will you start the discussion and how that discussion will be structured?

Estimate time required to complete the activity. If the activity refers to mathematics potentially unfamiliar to mathematics teachers, provide a brief discussion or references.

- **Handout (optional)**. In case your task/activity uses a handout, include it in your project. A clear, neatly formatted instructions for students with screenshots inserted in the text (if applicable). It should be exactly as you would be giving it to your students. This means that you may include blank parts for students' answers and exclude all the information that you want your students to observe or discover. Keep in mind that the handout must tie in with the teacher's notes and that an important part of your activity/task is a class discussion.

Evaluation criteria

- Is the objective of the activity clear?
- Will it help the students learn something important or interesting about constructions, polygons, triangles or quadrilaterals?
- Is the mathematics sound and terminology correct?
- Does the technology play a central role in the activity? Does the technology adds significantly to the activity or is it just a mere substitution of a regular paper or compass and ruler or other tools?
- Is the planning realistic? Can the students finish it within the given period?
- Typical formal criteria – Neat formatting, readability, etc.

Submission

Please submit a hard copy of the Cover Letter, Teacher's Notes and Handout (if applicable). Name your ggb/tns file(s) "YourLastName_ProjPolygons" and send them by e-mail.