

In addition to the topics in Stillwell's book, we will divide into three groups to explore the following topics: (1) axiomatic systems and finite geometries, (2) geometry over fields, and (3) fractal geometry. Each group will present the results of their investigation to the whole class in a twenty minute presentation during our final exam period and write a paper to be submitted at the time of the presentation.

Assignment:

- Research your assigned topic by working through the relevant sections of the text.
- Discuss the material as a group. Synthesize it, and make it your own.
- Write an expository paper about your topic. Your writing should be formal, and your level of exposition should be appropriate for your classmates. Use a word processor (like Microsoft Word) or software for mathematical typesetting (like Mathematica or LaTeX). There are no hard-and-fast page limits, but I would expect that you would have around 8 or 9 pages when you are done.
- Feel free to consult other sources. Make sure to cite them if you do. (That includes pictures.)
- Design a presentation/activity by which you will guide your classmates through your exploration. You will have twenty minutes during the final exam period to do this.

Timeline:

- Mar 14: project plan due  
As a group, submit a detailed plan for your research, including what you plan to have accomplished by Mar 28 and by Apr 11.
- Mar 28: first progress report due  
As a group, submit a report on your progress so far. You should be 50% done with the work required for the paper. If you choose to work through all the material before starting your writing, you should be 80% done working through the material. If you choose to write along the way, you should be 50% done working through the material (and have 50% of the material written.)  
Each individual should submit a group evaluation.
- Apr 11: second progress report  
As a group, submit a report on your progress so far. Your paper should be done by this point (with the exception perhaps of some minor revisions.)  
Each individual should submit a group evaluation.
- Apr 17: Presentations to the class and final paper due