Presentations

The plan is to have usually two 20 minute presentations by individuals or groups of 2–3 students each Centra session (15 minutes for presentation, 5 minutes for questions). Each student should be involved in two presentations. Within one week of making the presentation the presenters will submit a written paper, 4–6 pages (not including diagrams). At the same time as submitting this paper, they will submit a peer review of their paper using the rubric I am providing. Both should, preferable, be uploaded through Moodle.

Some general questions for each topic:

- How does the particular mathematics discussed fit into the tapestry of mathematics as a whole?
- What aspects of the particular historical setting(s) contributed to an environment conducive to that mathematical development?
- When does the particular mathematics appear in the K–16 curriculum, and how is it unfolded throughout the curriculum?
- What websites, software, etc., can assist in visualizing, representing, and understanding the mathematics?
- Where can some original source material be found online?

Some ideas for presentation topics, in no particular order, are given below. Obviously groups will usually have to pick just a certain portion of the topic to present, and should avoid making selections that are treated with some depth in Dunham.

1. The development of the fundamental theorem of calculus
2. Mathematics from India
3. Arabic mathematics
4. The Pythagoreans
5. Chinese mathematics
6. Native American mathematics
7. African-American mathematicians and their contributions
8. Operations research
9. Probability theory
10. Discrete mathematics/combinatorics
11. Computer science and the theory of computation
12. Game theory
13. Constructivism
14. Logic
15. Women in mathematics
16. Logarithms
17. Analog and digital computing devices
18. Numerical analysis
19. Set theory and foundations
20. Early mathematicians addressing issues of mathematics education
21. Statistics
22. The Clay Institute’s “Millennium Problems”
23. “Hilbert’s Problems”
24. Biography of some particular mathematician
25. Astronomy and influences on the development of mathematics
26. Various early number systems and representations
27. Recreation mathematics
28. Trigonometry
29. Visualizing mathematics, particularly with computers
30. Computer algebra systems
31. Graph theory
32. Matrix theory and linear algebra