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