There are lots of good books and articles that discuss the connections between Math and Art, and many more on the mathematical topics we're covering in this class. Read some or all of such a book or article and write a report on the connections and mathematics you learned.

You may read anything you want to, from a short article to a long book; from a chidren's book to a textbook. That being said, how many points you earn will depend on: how much of the book/article involves math (which it is your job to convey in what you write), how much of the book/article you read (you don't have to read it all, but don't try to persuade me you read more than you did – be honest!), what level the math is, and of course the level of insight and understanding your report reflects.

Some suggestions are on the next page. If you have an idea for something you'd like to read that's not on this list, just run it by me via e-mail or a chat after class one day.

Possible points: A report on a longish book with substantial mathematical content (*The Golden Ratio*, for instance) that makes it clear to me that you did indeed read the whole thing and that thoughtfully discusses the math and the connections between math in art covered in the book can earn well over 50 points. A similarly clear and well-written report on a longish book with some but less substantial mathematical content but which fits in well with this course (*The Invention of Infinity*, for instance) could earn up to 50 points.

A well-written and clear report on a shorter book (*Flatland*, for instance) can earn up to 30 points. (Note that there are several later projects that also relate to *Flatland*.)

Articles or chapters from books can earn anywhere from 1-25 points, depending on their content and their length, and on your report. A single page web-article, like a Math Trek article, may only earn 1-5 points (but may still be worth reading, as some are really fun, and as they contain links to longer source articles or books which you could then follow up with), while an article from the Nexus Network journal or a chapter from a book could earn 5-25 points.

SUGGESTIONS:

1. *An Imaginary Tale: The Story of $\sqrt{-1}$*, by Paul Nahin

2. *The Golden Ratio: The Story of ϕ*, by Mario Livio – Read more than Chapters 2, 3, and 9 which were a major source for this class.

3. *Mathematical History of Division in Mean and Extreme Ratio*, by Roger Herz-Fischler

4. *The Invention of Infinity: Mathematics and Art in the Renaissance*, by J. V. Field

5. *Math and the Mona Lisa: The Art and Science of Leonardo daVinci*, by Bülent Atalay

6. *Flatland: A Romance in Many Dimensions*, by Edwin Abbott

7. *Beyond the third dimension : geometry, computer graphics, and higher dimensions*, by Thomas Banchoff

8. *The Equation that Couldn't Be Solved: How Mathematical Genius Discovered the Language of Symmetry*, by Mario Livio

9. *Symmetry in Chaos: A Search for Pattern in Mathematics, Art, and Nature*, by Field and Golubitsky

10. *M. C. Escher: Visions of Symmetry*, by Doris Schattschneider

11. *Beautiful Geometry*, by Eli Maor

12. *The Universe and the Teacup: The Mathematics of Truth and Beauty*, by K. C. Cole

13. *The Nexus Network Journal*, volumes 2, 3, 4 – collections of articles on the connection between math and architecture

14. *Math Trek* – very short weekly on-line articles. On the course webpage, I have links to some that relate to art. Reading only one of these would be worth *at most* 5 points, but each article has a lot of links that you could also look into.