

# Apocalypto

## Project Description

**Abstract:** Human history is punctuated by the prolific rise and inevitable collapse of civilization after civilization. In this project, you will formulate hypotheses for these fluctuations, compare their hypotheses with historical evidence, map quantitative changes throughout history, then create a narrative and mechanical representation of your findings. You will then exhibit your work on the eve of the Mayan Apocalypse.



**Research & Skill Building:** In preparation for this project, you will ...

- Learn how to use a \$50,000 Laser Cutter!
- Learn how gears and other simple machines work.(torque, angular velocity, harmonic motion, P.E./Work/KE)
- Learn about the rise and fall of civilizations including, but not limited to, Maya, Easter Island, Greece, Rome, and Indochina.

## The Process

- Individual theory development (10/19 - 11/2)
- Individual mechanism designs (draft sketches)
- Group theory selection, work division (11/2 - 11/16)
- Group project proposal (theory abstracts, mechanism draft) (11/16)
  
- Individual research papers, mechanism construction, graphic design (11/26 - 12/7)
- Research paper - 95% draft due (12/11)
- Mechanism - 95% draft due (12/11)
- Physics Manifesto - 95% draft due (12/12)
- Posters - 95% draft due (12/12)
- Project Complete (12/14)
- Practice exhibition (12/17)
- Exhibition (12/20)

## Individual Deliverables (things you're graded on)

- Meeting intermediate project deadlines.
- A research abstract describing a specific aspect of your group's theory.
- A formal research paper describing a specific aspect of your group's theory.
- A draft physics manifesto describing the physics at work within your mechanism.

## Group Deliverables (things you're graded on)

- Meeting intermediate project deadlines.
- A quantitative or qualitative analysis of the time period we're studying (you'll do this in math class).
- A mechanism that dynamically represents your group's theory using *glyphs* and **functionally** integrates into our main gear.
- Your professional participation in a school-wide exhibition on the evening of December 20<sup>th</sup> (the eve of the Mayan apocalypse!)
- A physics manifesto, to accompany your mechanism on display, describing the physics at work within your mechanism.
- A single page abstract of your theory, to accompany your mechanism on display.
- A process portfolio that documents the history and development of your group.

## Group Roles

- Master Machinist (manages and modifies mechanism file, in charge of construction)
- Master Graphic Artist (poster, glyphs, image processing, converting physics manifesto)
- Master of Humanities (abstract)
- Master of Physics (makes the physics manifesto)
- Master Journalist (documents the process and markets the exhibition)

*And remember, go out with a bang, not a whimper - this is the last project you will ever do!*

## Group Thoughts

- At first glance, who will be performing each role:
  - Master Machinist:
  - Master Graphic Artist:
  - Master of Humanities:
  - Master of Physics:
  - Master Journalist:
- What are your initial reactions to your group and the roles you've chosen?
- What individual strengths do your group members have that will benefit you during this project?
- What individual weaknesses do your group members have that the group may struggle with during this project?
- Are there any other thoughts your considerations you have that Mike and I should be aware of?