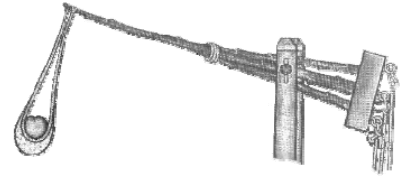


Conceptual Engineering II

Engineering Design Process Activity

Ancient Engineering

The purpose of this activity is to implement the steps of the engineering design process in the design and construction of a prototype siege engine. Siege engines are some of the earliest types of engineering known to mankind. In fact, the people that designed and built these weapons were actually called engineers. These weapons were solutions to the problem of protecting individuals, property, cities, and nations.



Design Brief

Research siege engines and design a device that will launch a projectile and hit targets located 5 feet and 10 feet away with consistency.

Assignment\ Procedure

1. Research *siege engines* of the past. Identify 3 different types of weapons used during the times– *catapults, trebuchets, and ballistas*.
2. Briefly summarize the history (when it was invented and by whom) and mechanics (describe how it worked) of each machine.
3. Locate an image of each machine.
4. Type your summary into a Word document and include the images with the text. If you are unsure of how to do this then please ask. The finished summary should be printed. **Each team member should complete a research summary.**
5. As a team, compare the information you found and come up with a minimum of 3 design ideas for a device using the material provided.
6. Produce thumbnail sketches for your 3 ideas
7. Decide on a final design idea for your catapult and produce (1) detailed sketch of your final design to turn in. This sketch should be of a better quality than your thumbnails and contain as much detail as possible.
8. Build a prototype of your final design idea
9. Analyze and test your catapult design.
10. Make necessary adjustments and changes based on your testing.
11. Submit your finished catapult, testing results, detailed sketch, thumbnails, and research summaries.