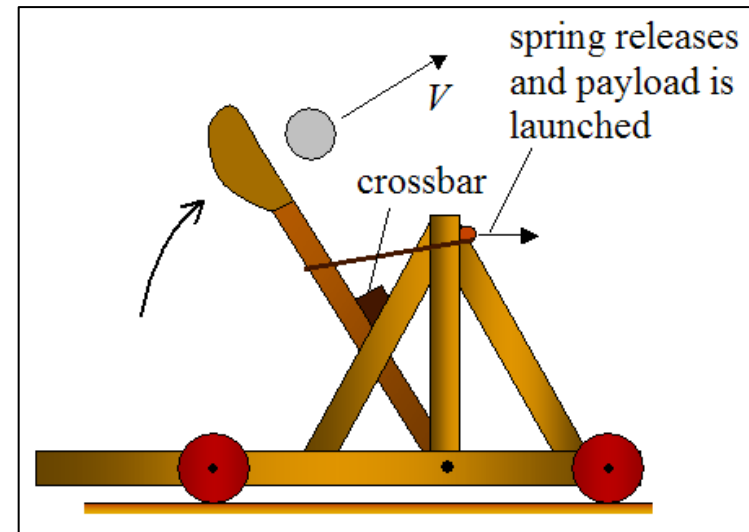
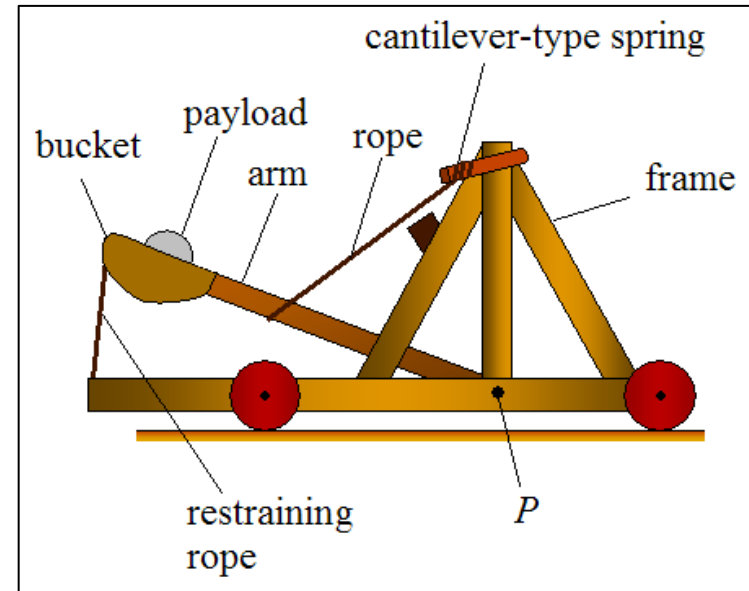


CLASH OF THE CATAPULTS

MATHEMATICS – ENGINEERING TECHNOLOGY

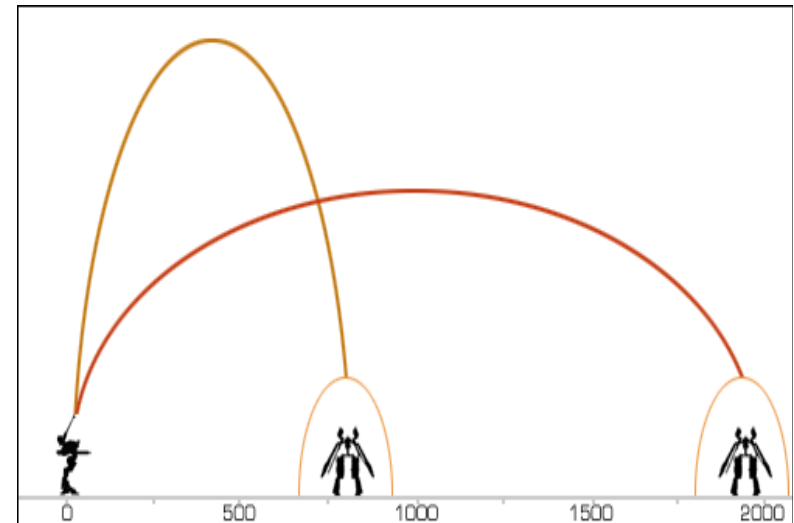
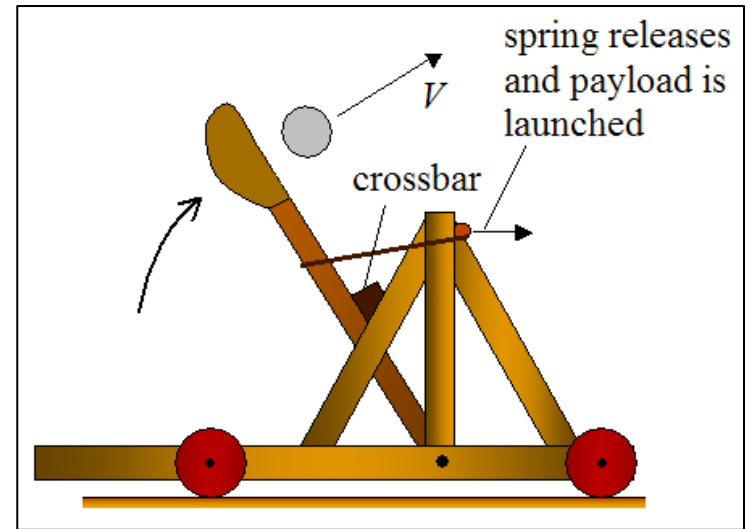
Catapults 101

- Catapults transfer stored energy to objects that are tossed
- Potential energy (stretched elastic) is converted into kinetic energy (motion of machine and object)



Catapult 101

- The pathway and distance travelled by the tossed object is predictable and depends on:
 - Angle of launch
 - Velocity of launch
 - Mass of object
 - Gravity
- In this contest, mass and gravity are constant
- Angle and velocity depend on you



RULES OF THE GAME

- Teams of 2
- Stage 1: Experimentation
 - You will have 10 minutes to experiment with your catapult to discover which settings will launch the object 1.5m and 2.0m
- Stage 2: 1.5m target
 - You will have 20 attempts to launch the object into the 1.5m target, recording successful attempts. Each of these successful attempts is worth 1 point. A “rim shot” is not a successful attempt.
- Stage 3: 2.0m target
 - You will have 10 attempts to launch the object into the 2.0m target, recording successful attempts. Each of these successful attempts is worth 2 points. A “rim shot is not a successful attempt.
- The decision(s) of the contest judges are final.

FACTORS TO CONSIDER IN YOUR DESIGN

- How many ways can we control the distance?
- Do these controls influence one another or not?
- How sensitive are the controls to our launching technique?
- How repeatable is your launch technique at landing in the same place?
- Will the same approach work for both distances?

Ready, Set, Go!

