

## Technology 9 Catapult Project

**GRADING - Your project will be marked on the following:**

- **The overall quality of your web page. It should include the following key components**
  - 1) **Research**
  - 2) **Possible designs**
  - 3) **Solution (Picture of your Prototype)**
  - 4) **Pictures of the building**
  - 5) **Pictures of the test day.**
  
- **The overall quality of your completed trebuchet and the performance of your trebuchet in competition (distance, accuracy and whether or not your trebuchet survives testing.)**

### **RESEARCHING AND DESIGNING A CATAPULT.**

#### *Introduction*

In this project you will:

- a) conduct research and answer questions on **catapults** and similar devices
- b) as a group, design your own catapult, complete with measurements and building plans
- c) build your design and test it in friendly competition

**YOU WILL WORK IN GROUPS OF 2 FOR THIS PROJECT. WE WILL ONLY HAVE MORE PEOPLE IN A GROUP IF ABSOLUTELY NECESSARY.**

## ***PART 1: Research***

**Answer the following questions IN YOUR OWN WORDS.**

**Any work that is copied and pasted and doesn't appear to be in the vocabulary of a grade 9 student will receive a mark of ZERO.**

**Type your answers in Microsoft Word or StarOffice/OpenOffice Impress and save them in your P: drive.**

**Submit ONE copy per the group.**

1. What is a catapult?
2. Who were the first people to use catapults? How long ago?
3. How were the early catapults powered? In other words, what was used to make the catapult launch?
4. How has trebuchets evolved over time to become more advanced weapons?
5. What weapons do you see today that have taken the place of trebuchets?

## ***PART 2: Designing Your Catapult***

As a group, you will come up with your own design for a working catapult. (HINT: Go to Google Images and search "catapult ".) You need to come up a solid design and some sort of trigger system, a way to launch the catapult. (You cannot use direct hand power).

You will need a complete set of plans showing all parts of the catapult to be built before we go to the workshop.

### **Design Restrictions**

- No part of your catapult can be more than 60 cm (24 inches or 2 feet) long.
- Each group will be limited to 10 screws for their entire project, so plan wisely.
- Each group will use the same materials for their catapult arm.
- Wood will be your main building material. However, other materials will have to be approved so nobody gets a competitive advantage.
- Any other restrictions will be announced in class if necessary.

## ***PART 3: Fabrication & Testing***

- In the workshop you will build, test and improve your design.
- For the "competition" part, everybody will fire the same projectile.
- Your catapult's performance will be tested for accuracy and distance.
  - a) how far the load travels before hitting the ground will determine the distance
  - b) hitting a target will determine accuracy.

**GRADING** - Your project will be marked on the following:

- The answers to your research questions
- The overall quality of your design plans (well drawn, all necessary details included. Slideshow presentation of your construction process.)
- The overall quality of your completed trebuchet and the performance of your trebuchet in competition (distance, accuracy and whether or not your trebuchet survives testing.)