

Lab Framework

Text:CORD Classic

Unit number and title:5-trebuchet

Developed by:Ken Kemp

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Lab Title trebuchet

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Short Description: build a small trebuchet from drinking straws.
shoot grapes and plot comparisons of distance and weight used

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
- collect organize and interpret data
- use a graph to plot data findings
- develop writing skills through lab report
 - develop leadership skills through teamwork
- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)
 - some knowledge of medieval warfare, rulers and tape measures
- **New Vocabulary**
 - trebuchet
- **Materials List**
 - straws, paper clips, masking tape, machine nuts, small amounts of cloth and grapes
- **GLEs addressed**
 - Math: (M1.4.3, 1.5.2 1.5.4
 - Reading: 1.2.2, 3.3.1
 - Writing: 2.2, 2.4
- **Leadership Skills**
 - 2.3, 2.8
- **SCAN Skills**
- Basic skills A, C, D
- Writing A-E
- Math A, B, C
- Arithmetic A-D
- Listening A-F
- Speaking G
- **Set-up information**
 - provide materials at work materials station, pass out handouts and grading rubric for presentations
- **Lab organization** (-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required**)
 - groups of three work together on trebuchet, each student turns in a final paper
- **Teacher Assessment of student learning** (scoring guide, rubric)
 - Completed graphs, Lab reports, Final paper in MLA format only
- **Summary of learning** (to be finished after student completes lab)
 - -discuss real world application of learning from lab

-opportunity for students to share/present learning
Develop real world data gathering, and analysis
Presentation of results to class

- **Optional activities**
none
- **Career Applications**
- Able to work in a group and be a team player
- Able to speak in a group
Real analysis skills

LAB TITLE: trebuchet

STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
 - buid a scale model trebuchet
 - fire provided missles and graph data on the relationship to distance and weight

- **Grouping instructions and roles**
 - groups of 3
 - 1scribe
 - 1 grapher
 - 1 spokesman

- **Procedures** – steps to follow/instructions
 - using only the materials provided, build a model trebuchet and graph the diferrences in distance caused by adding more weight to the trebuchet
 - build the trebuchet
 - practice,perfectthe trebuchet
 - collect data on a data table on how far your trebuchet shoots
 - add more weight and repeat the last step
 - graph the differences
 - present your findings to the class
 - write up and turn in a paper(MLA format) on your complete project

- **Outcome instructions**
 - students should be able to work the trebuchet, graph the data, and write a paper on it

- **Assessment instructions** (peer-teacher)
 - students will use a grading rubric for presentations and pass it in with other papers
 - teacher will use materials handed in to asses student learnin as well as group activities

Lab Data Collection

Student: _____ **Date:** 06-28-07

Unit: 5

Lab Title: trebuchets

Criteria: Write the problem/objective in statement form

build a model trebuchet, fire it several times, graph the difference that weight makes on distance, present finding to the class, and turn in a paper on the lab

Data Collection: Record the collected/given data
data table

Calculations: Complete the given calculations to solve for an answer(s)

Summary Statement:

It is a wonderful way to learn graphing as well as practice group work and paper writing

Other Assessment(s)

class behavior, on task, participation, clean-up