

8th
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Ob 3 a, b, d, e

Name:
Per:
Date:



TREBUCHETS AND CATAPULTS!!!!!!!!!!!!!!

TUESDAY

1. Draw your 1st design. Label the effort arm and resistance arm.
Type of lever: 1st class 2nd class 3rd class
Length of effort arm (input)
Length of resistance arm (output)
Amount of counterweight
Type and # of elastic

2. DISTANCE OF FIRST FIRING (goal of 14 ft.):
3. What is the mechanical advantage of this lever? Show your work.
4. What variable are you changing?
5. WRITE A HYPOTHESIS. IF I . . . THEN . . .

WEDNESDAY

6. Draw your 2nd design. Label the effort arm and resistance arm.
Type of lever: 1st class 2nd class 3rd class
Length of effort arm (input)
Length of resistance arm (output)
Amount of counterweight
Type and # of elastic

7. DISTANCE of 2nd FIRING (goal of 16 ft.):

8. What is the mechanical advantage of this lever? Show your work.

9. What variable are you changing?

10. WRITE A HYPOTHESIS. IF I . . . THEN . . .

THURSDAY

11. Draw your 3rd design. Label the effort arm and resistance arm.
Type of lever: 1st class 2nd class 3rd class
Length of effort arm (input)
Length of resistance arm (output)
Amount of counterweight
Type and # of elastic

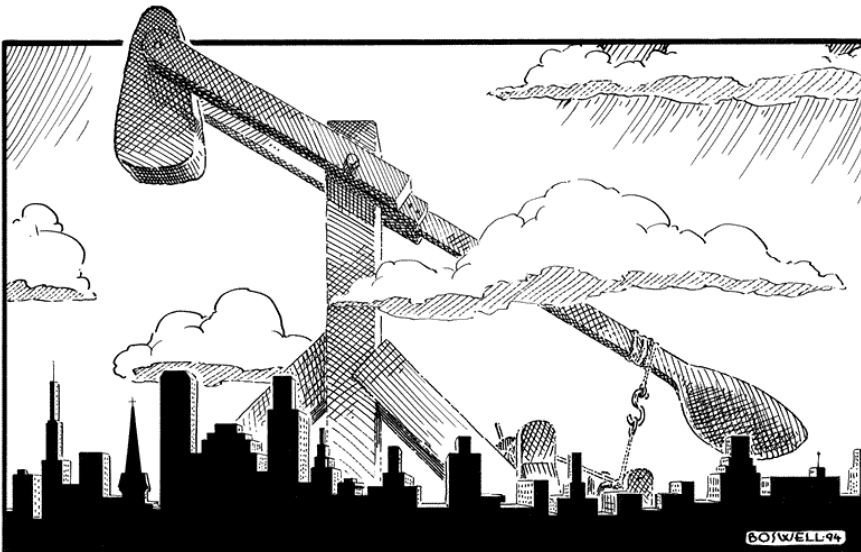
12. DISTANCE of 3rd firing (goal of 20 ft):

13. What is the mechanical advantage of this lever? Show your work.

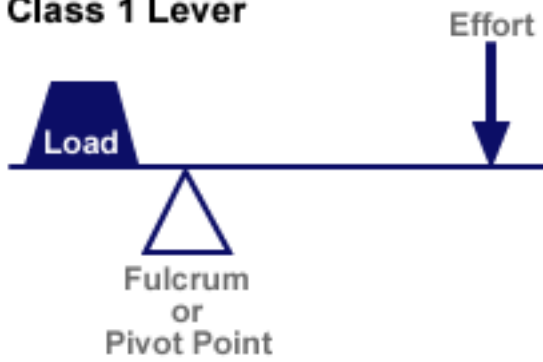
14. What variable helped your machine the most?

Rubric (scoring):

1. On time	5 pts	_____
2. 1 st Launch	10 pts	_____
3. 1 st description	5 pts	_____
4. 1 st hypothesis	5 pts	_____
5. 1 st Variable	5 pts	_____
6. 2 nd launch	10 pts	_____
7. 2 nd description	5 pts	_____
8. 2 nd hypothesis	5 pts	_____
9. 2 nd variable	5 pts	_____
10. 3 rd day launch	10 pts	_____
11. 3 rd description	5 pts	_____
12. 1 st M.A.	10 pts	_____
13. 2 nd M.A.	10 pts	_____
14. 3 rd M.A.	10 pts	_____
Total	100 pts	_____
Extra credit for no partner	10 pts	_____
Extra credit for trebuchet	10 pts	_____



Class 1 Lever



Class 2 Lever



Class 3 Lever

