

NAMES: _____

DATE: _____ ROCKET NUMBER(S): _____

3-2-1 BLAST-OFF!

Challenge: Determine which of the available launch angles (30° , 45° , or 60°) maximizes the horizontal range of an air-powered projectile (“rocket”).



Prediction: What angle do you predict will result in the farthest distance traveled? Why?

Observations: Work with your teammate(s) to collect and record data on the horizontal distances traveled for different launch angles and blast cap sizes. Please include units!

| CAP SIZE | LAUNCH ANGLE 30° | LAUNCH ANGLE 45° | LAUNCH ANGLE 60° |
|----------|----------------------------|----------------------------|----------------------------|
| LOW | Distance Traveled: | Distance Traveled: | Distance Traveled: |
| MEDIUM | Distance Traveled: | Distance Traveled: | Distance Traveled: |

Conclusion:

Using evidence from the above data table, make an argument for which launch angle generally results in the farthest distance travelled. (Are your results conclusive?)



Reflection:

Identify the following from the experiment...

Independent variable(s):

Dependent variable(s):

What are some potential sources of error?

What have you learned? Has your understanding of *the rockets themselves* and/or of *experimental design* changed as a result of this experiment? If so, how?

