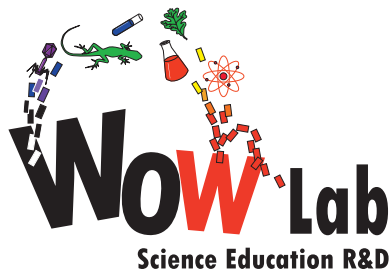


Student Handout

In the following handout, students will be required to:

- Record their observations of the rocket launches

Provided in this document are sample answers (page 2), a blank handout (page 3) and wing stencils (page 4). The blank handout should be made available to each group prior to the activity.



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Indoor Rockets - Handout Answers

Student Handout - Answers

Results

Use the table on this page to record your results.

Rocket Launch Trials					
Angle	Horizontal Distance				Vertical Distance Estimate
-	Trial 1	Trial 2	Trial 3	Average	-
45	117 cm	115 cm	121 cm	118 cm	150 cm
60	85 cm	91 cm	86 cm	87 cm	240 cm
30	88 cm	87 cm	87 cm	87 cm	80 cm
90	5 cm	1 cm	2 cm	3 cm	300 cm

At what angle did your rocket travel the furthest? Why?

The rocket travels the furthest when the angle is 45 degrees. This is because the velocity has equal vertical and horizontal components. Rockets launched at an angle smaller than 45 degrees have a greater horizontal velocity component, but they also do not climb as high resulting in shorter ranges overall.

At what angle did your rocket climb the highest? Why?

The rocket climbs the highest when the angle of launch is 90 degrees. This is because its initial velocity only has a vertical component. If all the rockets have initial velocity of approximately the same magnitude, then the 90 degree rocket travels the furthest in the vertical direction. From theory, this also means that the rocket should have no horizontal displacement. However, the presence of air currents generates some small displacement.



Student Handout

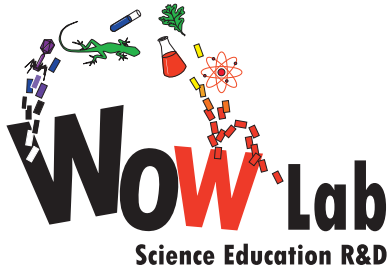
Results

Use the table on this page to record your results.

Rocket Launch Trials					
Angle	Horizontal Distance				Vertical Distance Estimate
-	Trial 1	Trial 2	Trial 3	Average	-
45					

At what angle did your rocket travel the furthest? Why?

At what angle did your rocket climb the highest? Why?



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Indoor Rockets - Student Handout

Wing Stencils

