

Water Rocket—Final Design Specifications/Construction (Rev 9.2.2015)

The first 10 simulations have been completed. The final design is due on Thursday.

There is no limit to the number of simulations for the second round

The following restrictions apply:

Each member of the group must do some of the simulation work independently

All simulations must be recorded on the spread sheet; The

Use effective graphical methods to reveal the relationships in your key results

Present clearly your final design specifications, compare these to the first round recommendations.

The maximum field pressure will be about 60 psia.

Hand in the spreadsheets, graphs, and conclusions from both rounds of simulations. Be sure to attach the with your first 10 results strategy sheet. The strategy sheet must be included.

The final design specification must be clearly labeled.

Construction:

After the design has been completed, fabricate the rocket as closely as possible to the design, matching both dimensions and materials of construction.

Document the construction. Particular emphasis should be placed on compromises and changes in specification during the construction.

Water Rocket Trial Data Sheet

Team	Distance from Pad to Measurement (m)	First Height Measurement		Second Height Measurement		Average Height (m)	Landing Distance from Pad (m)	Comments
		Angle (°)	Height (m)	Angle (°)	Height (m)			

Water Rocket Height Conversions from Measured Angle

Angle	Tan	Distance from Launch Pad		
		30.5 m (100ft) meters	22.9 m (75 ft) meters	15.2 m (50 ft) meter
10	0.18	5.5	4.1	2.7
20	0.36	11.0	8.2	5.5
30	0.57	17.4	13.1	8.7
40	0.84	25.6	19.2	12.7
45	1.00	30.5	22.9	15.2
50	1.19	36.3	27.3	18.1
60	1.73	52.7	39.6	26.3
70	2.74	83.6	62.7	41.6