Rocket Data Sheet and Launch Record

Rocket Description	
Owner:	Kourtney&Lexi
Rocket Name:	Crayola
Type:	Arcas
Length: (inches)	56"
Diameter: (inches)	2.6"
Fins:	4
Listed Mass: (g)	620
Date of Construction:	3/1/2016
Recommended Motors: (G only)	
G-53-5J, G64-7W, G71-7R, G76-7G, G38-7FJ, G40-7W, G77-7R, G78-7G	
Center Gravity(CG):	39.5"
Center Pressure(CP):	46.75"

Building Notes

Had Problems with fins staying in, and parachute tangled

Estimated Cd:	0.54
Predicted Altitude:	1880

Prediction Notes

Using the worksheet, our prediction is 1880 feet with the rocket camera. We had a problem with the parachute tangling, so we wouldn't be surprised if the parachute doesn't deploy properly.

Launch Information	
Date:	5/3/2016
Time of Launch:	9:00 AM
Location:	SW of driving rang
Rocket Mass(g):	612
Motor:	G80
Motor Mass(g):	128
Altimeter Mass(g):	9.9
Liftoff Mass(g):	749.9
Wind Direction:	North
Wind Speed:	2.5 mph
Igniter:	Copperhead
No. of tries to ignite:	4

Ignition

¨ Successfull	¨ Blow Out
¨ Caught on clips	¨ Motor Failure

Trajectory

¨ Straight-Up	¨ Spinning
¨ Corkscrew	¨ Non-vertical
¨ Into the wind	¨ Unstable

Launch Notes

Had Problems with the launcher staying on when trying to launch. First fire Igniter shot out and had to switch to copperhead. Parachute deployed before it was done ascending. Rocket coasted all the way to Collison addition. Minus the number of tries, was overall successful launch.

Recovery Information

Ejection Occurred

¨ During Ascent	¨ At Apogee
¨ After Apogee	¨ During Descent
¨ Ejection Failure	

Parachute Deployment

¨ Full	¨ Partial
¨ Did not deploy	

Parachute Descent

¨ Stable Descent	¨ Tangled lines
¨ Some swaying	¨ Sprial descent

Reason for Recovery Failure

¨ Damaged Chute
¨ Tight Upper Body tube
¨ Improper setup
¨ Chute Separated
¨ Motor Ejected
¨ Unplanned Separation
¨ Other _____

Descent Speed

¨ Slow	¨ Average speed
¨ Very fast	¨ Ballistic

Landing

¨ Soft	¨ Water
¨ Tree	¨ Caught on Wire
¨ Hard	¨ Crash
¨ Landed on Building	

Recovery

¨ Full Recovery	¨ Lost
¨ Not Recoverable	¨ Parts lost

Distance & Direction from pad:

Shot westward, but drifted eastward, landed in collison edition

Recovery Notes

Landed in backyard of collison edition

Post Launch Information

Flight Grade

¨ Excellent
¨ Good
¨ Fair
¨ Poor
¨ Rocket cannot launch again

Describe any damage to the rocket:

No noticable damage.

Altimeter Two Data

Apogee Altitude:	1819
Top Speed:	175
Burn Time (burn):	1.34
Peak Acc (Pacc):	11.3
Avg Acc (Aacc):	6
Coast Apogee (C2AP):	8.7
Apogee to Eject (AP2E):	-1
Ejection Alt. (EALt):	1801
Descent Speed (dESc):	13
Flight Duration (durA):	99.2

Altimeter Data Analysis

Was actually surprised at the height of the rocket. With the rocket cam and the amount of wind, I expected a much lower apogee height, but the apogee would have actually been higher, had the parachute ejected later. Prediction was fairly accurate though. Top Speed was low

Prediction vs Actual Analysis

Prediction and Actual were fairly close, probably would have been closer had the parachute not ejected as soon.

Lessons Learned

It's a good thing that we switched the parachutes out the day before, because it probably would have gotten tangled and had a crash landing rather then the smooth coast that it had. Only thing we probably would have changed was testing the battery before hand because it had problems keeping the controller on.

Rocket Project Suggestions

Great Project!