

After watching the NASA video, brainstorm questions that you have about the launching of a rocket?

My Questions:

### The Challenge:

In this exploration, your job is to construct a model rocket to simulate the launch of a real NASA rocket. Your challenge is to find what combination of fuel (Alka-Seltzer and water) produces the most effective launch. In order to do so, you will be given the following materials:

A film canister and cap, rocket launch tube, 2 tablets of Alka-Seltzer, safety goggles, cup and water, ruler.



### Procedure:

1. Obtain the materials listed above.
2. Determine how much Alka-Seltzer you want to use for each launch. (ex.  $\frac{1}{4}$  tablet,  $\frac{1}{2}$ , 1 tablet). Use fractions to express your amounts.
3. Record on the table below how much of these you will use for the first trial.
4. Fill canister  $\frac{1}{2}$  full of water each time.
5. When your group is ready to launch, put the piece of Alka-Seltzer into the canister. QUICKLY put the lid on tightly and then drop it cap side down into the launcher.
6. Be patient and wait for it to launch and make sure no one steps into the line of fire. When it launches, measure the distance that it traveled. Record your measurements below.
7. Repeat this procedure 3 more times using different amounts of Alka-Seltzer each time. Try to determine the most efficient amount of Alka-Seltzer.

Trial Number	Amount of Alka-Seltzer Used	Distance Rocket Traveled	Observations:
1			
2			
3			
4			

**Questions:**

1. According to your results, what amount of Alka-Seltzer produced the most effective rocket?
  
2. Describe how you think the force (push) was produced that caused the rocket to be propelled out of the launcher. Do you think this is an example of a cause-effect relationship?
  
3. Besides the amounts of Alka-Seltzer and water, describe two other factors that you think might have some effect on the flight distance of the rocket.
  
4. If time permits, change the factor that you think is most likely to impact the distance traveled by the rocket and try it. If you attempted this part, describe your result below.