

Name: _____ Period: _____ Date: _____

ROCKET LAB:

Objective: I will be able to write a claim supported by evidence and create a detailed drawing that shows what is happening in the experiment.

Focus Question: Which amount of water makes the rocket have the longest time in the air?

Lab Description: Students will be limited to a quarter of an alka seltzer tablet. Students choose different amounts of water to test and create a bar graph showing how long capsule was in air for.

Prediction:

As the amount of water _____ (*increases/decreases*), the time the rocket will stay in the air will _____ (*increase/decrease*).

Materials:

- Film Canister
- Effervescent tablet
- Graduated Cylinder
- Timer
- Safety Goggles

Teacher Demo.:

TWO Observations:	ONE Inference:
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Roles:

Cap Manager: _____ Job Description: Places the lid on the canister and places the canister on the ground. Follows directions from facilitator!	Timer/Recorder: _____ Job Description: Counts down for when tablet is dropped into canister. Times rocket time in air and records it.
Facilitator/Safety Advisor: _____ Job Description: Makes sure everyone follows the procedure and rules at ALL times!	Water Manager: _____ Job Description: Measures correct water amount for each trial.

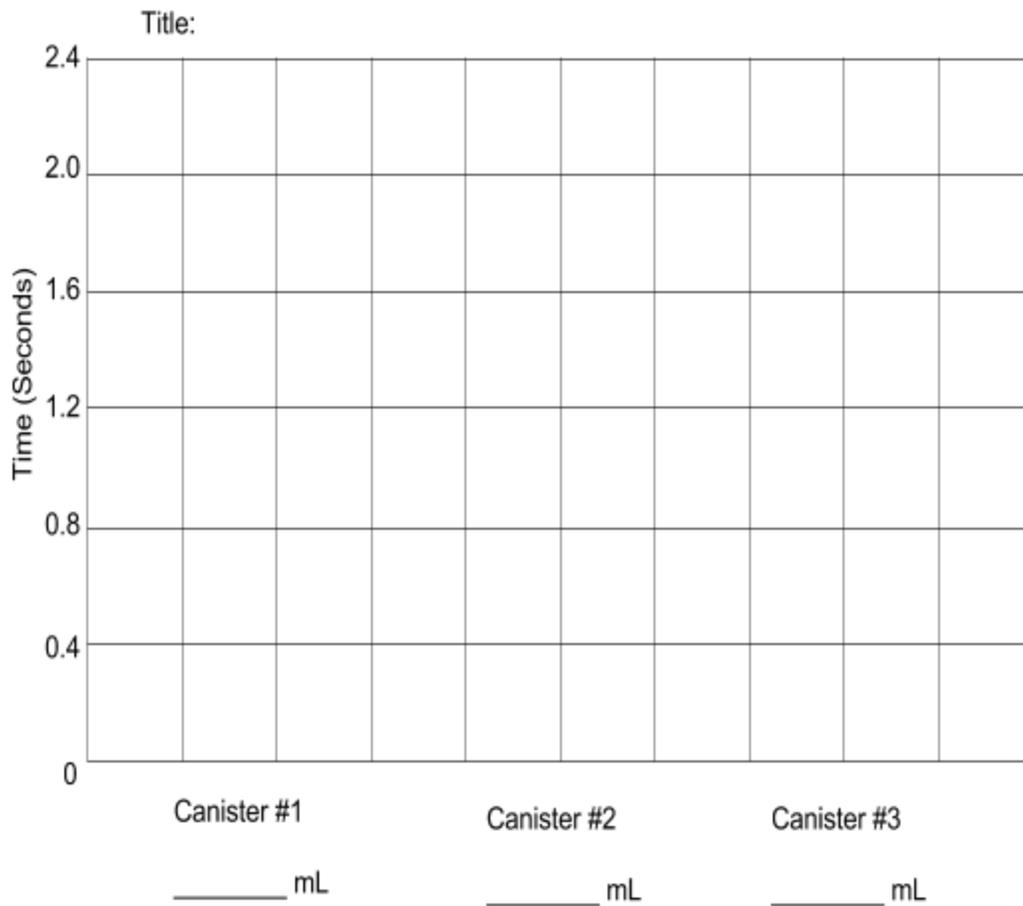
Procedure:

1. **Cap manager** pick up one film canister with lid (this will be the “rocket”).
2. **Water manager** measure **8 mL** of water using a graduated cylinder. Fill your rocket with the 8 mL of water.
3. **Cap manager** get Effervescent tablet (alka seltzer) from the teacher.
4. **Facilitator** ****Make sure everyone wears goggles the ENTIRE time!****
5. **Timer/Recorder** countdown from 3 (3,2,1) for when the Cap Manager places the tablet in the cap. Place the cap on the canister and place upside down on the ground. Test your rocket **twice** in the “testing area.” Record the amount of time the rocket stayed in the air.
6. Repeat the experiment using **16 mL** of water. Record your data.
7. When finished, repeat the experiment using **24 mL** of water. Record your data. (Calculate the average as a **group!**)

Data Table:

Amount of Water (mL)	Trial 1 (Time in Air)	Trial 2 (Time in Air)	Average Time in Air (<i>Trial 1 + Trial 2</i>) / 2 = ??
Canister #1: 8 mL	_____ seconds	_____ seconds	_____ seconds
Canister #2: 16 mL	_____ seconds	_____ seconds	_____ seconds
Canister #3: 24 mL	_____ seconds	_____ seconds	_____ seconds

Bar Graph:



Claim and Evidence:

Claim Which amount of water made the canister go the highest?	
Evidence #1 (info/data from table above)	

Rocket Final Model

Question: What amount of water makes the canister stay in the air the longest?

Your model should include the following

Drawing Checklist:

- Zoom in:** show what happened inside the canister (air bubbles? Water? Movement?)
- Zoom out:** show what happened in the different canisters as a result of putting the alka seltzer into your rocket (Height? Time in air?)
- Include **numbers** (relevant data from the data table)
- Include **labels** (label the objects and materials in your drawing)

Description Checklist:

- Write 3 complete sentences describing what happened

Use the space below to show what amount of water makes the canister stay in the air the longest:

1. What made the canister go?

Beforehand students will know:

- CER
- modeling criteria (practice drawing a detailed leaf)
- Observation and inference

Questions we have:

1. Which other skills should we focus on/include for them to successfully complete the experiment?
 - Emphasis on skills will be on modeling and CER practice
 - Wondering.. Should we include graphing skills?, measuring?, Analyzing graphs?, variables?, etc.
2. Do they have enough scientific background to make CER

KEY: We found the least amount of water makes the canister go the highest.