

# Lincoln Northeast

The diagram shows a red rocket with a conical nose pointing upwards. The rocket is labeled with a large black letter 'A' in its center. At the base of the rocket, there is a large, billowing cloud of fire and smoke, colored in shades of yellow and orange, labeled with a large black letter 'B'. To the right of the rocket, there are two large, light gray arrows. The top arrow points upwards and is labeled 'Reaction' in black text. The bottom arrow points downwards and is labeled 'Action' in black text. This visualizes the concept that the upward motion of the rocket (Reaction) is a result of the downward expulsion of exhaust gases (Action).

**Materials:** pop bottle 16.9 or 20 oz, rubber stopper, 2oz. vinegar, 4 oz. water, 2 spoonfuls baking soda, 3 craft sticks, 2 rubber bands, charging papers

- 1.) Stretch rubber bands around bottle. 2.) Place 3 craft sticks under rubber bands so they are held and provide a tripod base for the bottle(rocket) to stand upside down so that the cap of the bottle does not touch the ground. 3.) Pour water/vinegar solution into rocket(bottle).
- 4.)Cap bottle with original cap. 5.) Lay out charging paper flat and pour 2 spoonfuls of baking soda in a line down the middle. 6.) Fold in the two sides and bottom, then roll up the rest of the way.
- 7.) Proceed to Launch area. 8.) Remove cap, then quickly insert the baking soda charge and push rubber stopper into bottle as hard as you can. 9.) Shake the bottle, place cap down resting on the craft sticks and back away.

### Conclusion:

**Worksheet**

Altitude =  
Velocity =  
Acceleration =

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**Launch**

**Burnout**

**Powered Ascent**

**Coasting Flight**

**Apogee**

**Ejection Charge**

**Parachute Descent**

**Recovery**

Fill in the description for each phase of flight