|  |  |
| --- | --- |
| Day 1 | Day 2 |
| 1. Introduction:    1. “The first rockets were used as propulsion systems for arrows, and may have appeared as early as the 10th century in Song dynasty China.”    2. Question: “Before we talk about rockets, lets first talk about the general term of a projectile. A projectile is any object thrown with an initial force. I have a couple of projectiles here, and I’m going to toss them to you. Tell me what you notice about the path or trajectory they follow?” 2. Math (Maybe too complicated, might cut out):    1. Parabolas/Quadratics    2. Velocity/Acceleration due to gravity    3. Simple Projectile Motion   (Yf = Yi + Vi\*t + ½ \* a \* t^2)   1. Project 1 (Stomp-Rockets):    1. Students see prebuilt paper rockets launched using stomp rocket setup    2. Each or pairs of students design their own paper rockets with nose-cone and fin design    3. Test for distance and maybe aiming at a target (pyramid of cups) 2. Project 2 (Bottle Rockets if weather is okay):    1. Pair of students design a bottle rocket using similar fin design and nose cone design from their paper rockets    2. Go outside to the field and launch Rockets! 3. Clean-up:    1. Students pick up their rockets and head back to the school | 1. Introduction:    1. “Yesterday I talked to about the first ancient rockets were used to propel arrows. The first rocket which actually launched something into space was used to launch Sputnik, the first satellite, on October 4, 1957. Since then, over 8000 objects have been launched into space. These satellites are what give us, cellphone communication, GPS, weather, and satellite television” 2. Project 3 (Payload Stomp-Rockets)    1. Students see prebuilt payload carrying paper rockets launched using stomp rocket setup       1. What causes for separation? Drag    2. Pick a type of payload (aluminum foil, tape ball, paperball, etc.)    3. Each or pairs of students design their own paper rockets with a payload and fin design    4. Test for separation and maybe aiming at a target 3. Project 4 (Payload Bottle Rockets if weather is okay)    1. Pair of students design a bottle rocket using similar fin design and payload carry design from their paper rockets    2. Go outside to the field and launch Rockets! 4. Clean-up:    1. Students pick up their rockets and head back to the school |