



<p>This module is designed to help you explore how science affects your life each day.</p>										
<p>3A-2. Graph the results of your experiment. (Note: Using a high-speed camera or video camera may make the graphing easier, as will doing many repetitions using variable heights from which the projectile can be launched.)</p>										
<p>3A-3. Discuss with your counselor:</p>										
<p>3A-3a. What a projectile is</p>										
<p>3A-3b. What projectile motion is</p>										
<p>3A-3c. The factors affecting the path of a projectile</p>										
<p>3A-3d. The difference between forward velocity and acceleration due to gravity</p>										
<p>3B. Discover. Explain to your counselor the difference between escape velocity (not the game), orbital velocity, and terminal velocity. Then answer TWO of the following questions. (With your parent's or guardian's permission, you may explore websites to find this information.)</p>										
<p>3B-1. Why are satellites usually launched toward the east, and what is a launch window?</p>										
<p>3B-2. What is the average terminal velocity of a skydiver? (What is the fastest you would go if you were to jump out of an airplane?)</p>										
<p>3B-3. How fast does a bullet, baseball, airplane, or rocket have to travel in order to escape Earth's gravitational field? (What is Earth's escape velocity?)</p>										
<p>4. Choose A or B and complete ALL the requirements.</p>										
<p>4A. Visit an observatory or a flight, aviation, or space museum.</p>										
<p>4A-1. During your visit, talk to a docent or person in charge about a science topic related to the site.</p>										
<p>4A-2. Discuss your visit with your counselor</p>										
<p>4B. Discover the latitude and longitude coordinates of your current position. Then do the following:</p>										
<p>4B-1. Find out what time a satellite will pass over your area. (A good resource to find the times for satellite passes is the Heavens Above website at <a href="http://www.heavens-above.com">www.heavens-above.com</a> .)</p>										
<p>4B-2. Watch the satellite using binoculars. Record the time of your viewing, the weather conditions, how long the satellite was visible, and the path of the satellite. Then discuss your viewing with your counselor.</p>										
<p>5. Choose A or B or C and complete ALL the requirements.</p>										
<p>5A. Design and build a catapult that will launch a marshmallow a distance of 4 feet. Then do the following:</p>										
<p>5A-1. Keep track of your experimental data for every attempt. Include the angle of launch and the distance projected.</p>										

