

Names: _____

Group#: ____ Block# _____

Multimedia Project: The science of a Roller Coaster

Category	EXCEEDING	ACCOMPLISHED	DEVELOPING	BEGINNING
Content-Newton's First Law explained	<p>Video shows application and explanation in own words of Newton's 1st Law, including gravity, inertia, how and where these concepts are present.</p> <p>Explains why the marble does not fall off the track when it goes upside down. Subject knowledge is excellent.</p>	<p>Video shows explanation of Newton's 1st Law in own words, and how and where inertia and gravity are present. Application is good but at times, imprecise. Subject knowledge appears to be good throughout video.</p>	<p>Video shows a description of Newton's 1st Law but lacking explanation and application in own words.</p>	<p>Content of video is so minimal that assessment of Newton's 1st Law cannot be made based on video evidence.</p>
Content-Newton's Second Law explained	<p>Video shows application and explanation in own words of Newton's 2nd Law, including the relationship between force, mass and acceleration, and friction.</p> <p>Explains how and why best roller coasters make use of 2 and 3 g forces.</p> <p>Explains the relationship between force and mass and momentum and mass.</p>	<p>Video shows explanation of Newton's 2nd Law in own words, and the relationship mass force, acceleration and friction. Explains the relationship between force and mass, and mass and momentum. Application is good but at times, imprecise. Subject knowledge is good throughout video.</p>	<p>Video shows a description of Newton's 2nd Law but lacking explanation and application in own words.</p>	<p>Content of video is so minimal that assessment of Newton's 2nd Law cannot be made based on video evidence.</p>

<p>Potential and Kinetic Energy</p>	<p>Explains when and where the marble has the most/ least potential and kinetic energy and why.</p> <p>Explains the law of conservation of momentum with specific examples on the roller coaster.</p>	<p>Explains when and where the marble has the most/ least potential and kinetic energy and why.</p> <p>Explains the law of conservation of momentum with some errors.</p>	<p>Missing one or more components. Explanations are present but not clear throughout.</p>	<p>Lacking evidence of understanding energy conversion.</p>
<p>Forces</p>	<p>Video shows explanation of and location of all the forces acting on the marble roller coaster, including centripetal, friction, gravity, normal.</p> <p>Explains the concept of "weightlessness".</p>	<p>Video shows explanation of most the forces acting on the marble roller coaster.</p>	<p>Video only shows some of the forces and their specific location. Lacks further explanations of weightlessness.</p>	<p>Content of video is so minimal that assessment of forces cannot be made based on video evidence.</p>
<p>Video Presentation</p>	<p>Shows a functional rollercoaster.</p> <p>Ideas are creative and inventive.</p> <p>Duration is less than 5 minutes.</p> <p>Includes a creative title displayed originally.</p> <p>Includes appealing music, creative graphics. Voices are clearly heard even if music is playing.</p> <p>All work is divided equally among members in the video.</p> <p>Holds the attention of the audience.</p>	<p>Product shows some original thought. Work shows new ideas and insights.</p> <p>Missing one component from the exceeding category.</p>	<p>Uses other people's ideas (giving them credit), but there is little evidence of original thinking.</p> <p>Missing 2 or more than 2 components from the exceeding category.</p>	<p>Uses other people's ideas, but does not give them credit.</p> <p>Presentation is not acceptable.</p>

Final grade: