Future Flight Design			
2009 Science			
Core Curriculum Content Standards			
New Jersey Science			
Grades 5-6			
Activity/Lesson	**State**	**Standards**	
Aircraft Design Problem	NJ	SCI.5-6.5.2.6.E.a	An object's position can be described by locating the object relative to other objects or a background. The description of an object's motion from one observer's view may be different from that reported from a different observer's view.
Aircraft Design Problem	NJ	SCI.5-6.5.2.6.E.c	Friction is a force that acts to slow or stop the motion of objects.
Aircraft Design Problem	NJ	SCI.5-6.5.4.6.A.3	Predict what would happen to an orbiting object if gravity were increased, decreased, or taken away.
Future Flight Design			
2009 Science			
Core Curriculum Content Standards			
New Jersey Science			
Grades 7-8			
Activity/Lesson	**State**	**Standards**	
Air Transportation Problem	NJ	SCI.7-8.5.1.8.B.1	Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and revising models and explanations.
Air Transportation Problem	NJ	SCI.7-8.5.1.8.B.b	Mathematics and technology are used to gather, analyze, and communicate results.
Air Transportation Problem	NJ	SCI.7-8.5.1.8.B.2	Gather, evaluate, and represent evidence using scientific tools, technologies, and computational strategies.
Air Transportation Problem	NJ	SCI.7-8.5.1.8.D.1	Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.
Air Transportation Problem	NJ	SCI.7-8.5.1.8.D.2	Engage in productive scientific discussion practices during conversations with peers, both face-to-face and virtually, in the context of scientific investigations and model-building.
Aircraft Design Problem	NJ	SCI.7-8.5.2.8.D.a	When energy is transferred from one system to another, the quantity of energy before transfer equals the quantity of energy after transfer. As an object falls, its potential energy decreases as its speed, and consequently its kinetic energy, increases. While an object is falling, some of the object's kinetic energy is transferred to the medium through which it falls, setting the medium into motion and heating it.

Aircraft Design Problem	NJ	SCI.7-8.5.2.8.D.1	Relate the kinetic and potential energies of a roller coaster at various points on its path.
Aircraft Design Problem	NJ	SCI.7-8.5.2.8.E.a	An object is in motion when its position is changing. The speed of an object is defined by how far it travels divided by the amount of time it took to travel that far.
Aircraft Design Problem	NJ	SCI.7-8.5.2.8.E.1	Calculate the speed of an object when given distance and time.
Aircraft Design Problem	NJ	SCI.7-8.5.2.8.E.b	Forces have magnitude and direction. Forces can be added. The net force on an object is the sum of all the forces acting on the object. An object at rest will remain at rest unless acted on by an unbalanced force. An object in motion at constant velocity will continue at the same velocity unless acted on by an unbalanced force.
Aircraft Design Problem	NJ	SCI.7-8.5.2.8.E.2	Compare the motion of an object acted on by balanced forces with the motion of an object acted on by unbalanced forces in a given specific scenario.