Exploring Aeronautics			
2009 Science			
Core Curriculum			
Iowa Science			
Grades 3-5			
Activity/Lesson	**State**	**Standards**	
Fundamentals of Aeronautics (145-176)	IA	SCI.3-5.3.5.2	Changes in speed or direction of motion are caused by forces. The greater the force, the greater the change in motion. The more massive an object, the less effect a given force will have in changing its motion.
Airplane Control(209-256)	IA	SCI.3-5.3.5.1	The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph.
Airplane Control(209-256)	IA	SCI.3-5.3.5.2	Changes in speed or direction of motion are caused by forces. The greater the force, the greater the change in motion. The more massive an object, the less effect a given force will have in changing its motion.
Tools of Aeronautics(257-326)	IA	SCI.3-5.1.4.2	Students are introduced to the use of computers and calculators for conducting investigations.
How an Airplane Flies	IA	SCI.3-5.3.5.1	The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph.
How an Airplane Flies	IA	SCI.3-5.3.5.2	Changes in speed or direction of motion are caused by forces. The greater the force, the greater the change in motion. The more massive an object, the less effect a given force will have in changing its motion.
The Tools of Aeronautics	IA	SCI.3-5.1.4.2	Students are introduced to the use of computers and calculators for conducting investigations.
Science of Flight	IA	SCI.3-5.1.1.1	Students ask questions that they can answer with scientific knowledge combined with their own observations.
Science of Flight	IA	SCI.3-5.1.1.2	Students recognize that different questions lead to different types of investigations.
Science of Flight	IA	SCI.3-5.1.5.1	Mathematics is used to gather, organize and present data and to construct convincing explanations.
Science of Flight	IA	SCI.3-5.1.6.4	Students should check their explanations against scientific knowledge, their own experiences, and observations of others.
Science of Flight	IA	SCI.3-5.3.5.1	The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph.

Science of Flight	IA	SCI.3-5.3.5.2	Changes in speed or direction of motion are caused by forces. The greater the force, the greater the change in motion. The more massive an object, the less effect a given force will have in changing its motion.
Integrating with Aeronautics	IA	SCI.3-5.1.3.1	Students should engage in systematic observation, making accurate measurements, and identifying and controlling variables.
Integrating with Aeronautics	IA	SCI.3-5.1.6.2	Students should judge the merits or strengths of the data and information used to make explanations.
Scientific Method(124-144)	IA	SCI.3-5.1.1.1	Students ask questions that they can answer with scientific knowledge combined with their own observations.
Scientific Method(124-144)	IA	SCI.3-5.1.1.2	Students recognize that different questions lead to different types of investigations.
Scientific Method(124-144)	IA	SCI.3-5.1.4.3	Students' use of appropriate tools is guided by the questions asked and the investigations students design.
Scientific Method(124-144)	IA	SCI.3-5.1.5.1	Mathematics is used to gather, organize and present data and to construct convincing explanations.
Scientific Method(124-144)	IA	SCI.3-5.1.6.2	Students should judge the merits or strengths of the data and information used to make explanations.
Exploring Aeronautics			
2009 Science			
Core Curriculum			
Iowa Science			
Grades 6-8			
Activity/Lesson	**State**	**Standards**	
Fundamentals of Aeronautics (145-176)	IA	SCI.6-8.3.3.1	The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph.
Fundamentals of Aeronautics (145-176)	IA	SCI.6-8.3.3.2	An object that is not being subjected to a force will continue to move at a constant speed and in a straight line.
Fundamentals of Aeronautics (145-176)	IA	SCI.6-8.3.3.3	If more than one force acts on an object along a straight line, then the forces will reinforce or cancel one another, depending on their direction and magnitude. Unbalanced forces will cause changes in speed or direction of an object's motion.
Airplane Control(209-256)	IA	SCI.6-8.3.3.1	The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph.

Tools of Aeronautics(257-326)	IA	SCI.6-8.1.4.1	The use of tools and techniques, including computers, will be guided by the questions asked and the investigations students design. Students should be able to access, gather, store, retrieve, and organize data, using computer hardware and software designed for these purposes.
Tools of Aeronautics(257-326)	IA	SCI.6-8.1.6.3	Models are often used to think about processes that happen too slowly, too quickly, or on too small a scale to observe directly, or are too vast to be changed deliberately, or are potentially dangerous.
Tools of Aeronautics(257-326)	IA	SCI.6-8.1.6.4	Different models can be used to represent the same thing.
How an Airplane Flies	IA	SCI.6-8.3.3.1	The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph.
How an Airplane Flies	IA	SCI.6-8.3.3.3	If more than one force acts on an object along a straight line, then the forces will reinforce or cancel one another, depending on their direction and magnitude. Unbalanced forces will cause changes in speed or direction of an object's motion.
The Tools of Aeronautics	IA	SCI.6-8.1.4.1	The use of tools and techniques, including computers, will be guided by the questions asked and the investigations students design. Students should be able to access, gather, store, retrieve, and organize data, using computer hardware and software designed for these purposes.
The Tools of Aeronautics	IA	SCI.6-8.1.6.3	Models are often used to think about processes that happen too slowly, too quickly, or on too small a scale to observe directly, or are too vast to be changed deliberately, or are potentially dangerous.
The Tools of Aeronautics	IA	SCI.6-8.1.6.4	Different models can be used to represent the same thing.
Science of Flight	IA	SCI.6-8.1.1.2	Students should develop the ability to connect their questions with scientific ideas, concepts, and quantitative relationships that guide investigations.
Science of Flight	IA	SCI.6-8.1.2.2	Students should develop general abilities such as making systematic observations, taking accurate measurements, and identifying and controlling variables.
Science of Flight	IA	SCI.6-8.1.3.1	Some investigations involve observing and describing objects, organisms and events; some involve collecting specimens; some involve experiments; some involve seeking more information; some involve discovery of new objects and phenomena; and some involve making models.

Science of Flight	IA	SCI.6-8.1.4.1	The use of tools and techniques, including computers, will be guided by the questions asked and the investigations students design. Students should be able to access, gather, store, retrieve, and organize data, using computer hardware and software designed for these purposes.
Science of Flight	IA	SCI.6-8.1.5.1	Mathematics is used to gather, organize and present data and to construct convincing explanations.
Science of Flight	IA	SCI.6-8.1.9.1	Students should become competent in communicating experimental methods, describing observations and summarizing the results of investigations. Explanations can be communicated through various methods.
Integrating with Aeronautics	IA	SCI.6-8.1.2.2	Students should develop general abilities such as making systematic observations, taking accurate measurements, and identifying and controlling variables.
Integrating with Aeronautics	IA	SCI.6-8.1.2.4	Students formulate questions, design investigations, execute investigations, interpret data, use evidence to generate explanations, propose alternative explanations, and critique explanations and procedures.
Scientific Method(124-144)	IA	SCI.6-8.1.1.1	Students should develop the ability to refine and refocus broad and ill-defined questions. An important aspect of this ability consists of clarifying questions and inquiries and directing them toward objects and phenomena that can be described, explained, or predicted by scientific investigations.
Scientific Method(124-144)	IA	SCI.6-8.1.1.2	Students should develop the ability to connect their questions with scientific ideas, concepts, and quantitative relationships that guide investigations.
Scientific Method(124-144)	IA	SCI.6-8.1.2.1	Students understand that different kinds of questions suggest different kinds of scientific investigations.
Scientific Method(124-144)	IA	SCI.6-8.1.2.4	Students formulate questions, design investigations, execute investigations, interpret data, use evidence to generate explanations, propose alternative explanations, and critique explanations and procedures.