

Courage to Soar			
2007 Science			
Grade Expectations			
Vermont Science			
Grades 3-4			
Activity/Lesson	State	Standards	
Kite Flight	VT	SCI.3-4.S3-4:1.1	Identifying at least one variable that affects a system and using that variable to generate an experimental question that includes a cause and effect relationship
Kite Flight	VT	SCI.3-4.S3-4:2.1	Identifying simple patterns of evidence used to develop a prediction and propose an explanation.
Kite Flight	VT	SCI.3-4.S3-4:6.2	Relating data to the original question and prediction.
Kite Flight	VT	SCI.3-4.S3-4:7.2	Identifying differences between proposed predictions and experimental data.
Kite Flight	VT	SCI.3-4.S3-4:24.1	Building circuits, drawing diagrams of these electric circuits, and predicting whether electricity flows or will not flow through the circuit.
Kite Flight	VT	SCI.3-4.S3-4:48.1	Observing, recording and analyzing local weather data and making predictions based on that data.
Aviation Pioneers	VT	SCI.3-4.S3-4:1.1	Identifying at least one variable that affects a system and using that variable to generate an experimental question that includes a cause and effect relationship
Aviation Pioneers	VT	SCI.3-4.S3-4:3.1.c	A procedure that lists steps sequentially (beginning, middle, and end) and describes how the experimenter will manipulate or change only one variable at a time ("Fair Test").
Looking for Answers:A research project	VT	SCI.3-4.S3-4:4.6.b	Labeling significant parts of a scientific drawing or diagram and including a key if necessary.
The Matter of Air	VT	SCI.3-4.S3-4:2.1	Identifying simple patterns of evidence used to develop a prediction and propose an explanation.
The Matter of Air	VT	SCI.3-4.S3-4:4.1	Referring to and following a detailed plan for an investigation.
The Matter of Air	VT	SCI.3-4.S3-4:6.2	Relating data to the original question and prediction.
The Matter of Air	VT	SCI.3-4.S3-4:7.2	Identifying differences between proposed predictions and experimental data.
The Matter of Air	VT	SCI.3-4.S3-4:8.2	Creating a plan to investigate a scientific concept further.
The Matter of Air	VT	SCI.3-4.S3-4:12.a	Solids, liquids and gases are states of matter that can be observed, described, and measured.

The Matter of Air	VT	SCI.3-4.S3-4:24.1	Building circuits, drawing diagrams of these electric circuits, and predicting whether electricity flows or will not flow through the circuit.
The Matter of Air	VT	SCI.3-4.S3-4:24.2	Using experimental data to classify different materials as conductors and insulators.
The Matter of Air	VT	SCI.3-4.S3-4:48.1	Observing, recording and analyzing local weather data and making predictions based on that data.
The Matter of Air	VT	SCI.3-4.S3-4:48.a	Weather changes from day to day and over the seasons. Weather can be described by measurable quantities (such as temperature, wind direction and speed, precipitation and air pressure).
The Four Forces of Flight	VT	SCI.3-4.S3-4:4.1	Referring to and following a detailed plan for an investigation.
The Four Forces of Flight	VT	SCI.3-4.S3-4:8.2	Creating a plan to investigate a scientific concept further.
The Four Forces of Flight	VT	SCI.3-4.S3-4:21.1	Investigating and describing how different amounts of force can change the position or direction of motion of an object
The Four Forces of Flight	VT	SCI.3-4.S3-4:21.b	The greater the force, the greater the change.
The Four Forces of Flight	VT	SCI.3-4.S3-4:24.2	Using experimental data to classify different materials as conductors and insulators.
Controlling the Plane	VT	SCI.3-4.S3-4:2.1	Identifying simple patterns of evidence used to develop a prediction and propose an explanation.
Controlling the Plane	VT	SCI.3-4.S3-4:6.2	Relating data to the original question and prediction.
Controlling the Plane	VT	SCI.3-4.S3-4:7.2	Identifying differences between proposed predictions and experimental data.
Controlling the Plane	VT	SCI.3-4.S3-4:24.1	Building circuits, drawing diagrams of these electric circuits, and predicting whether electricity flows or will not flow through the circuit.
Controlling the Plane	VT	SCI.3-4.S3-4:48.1	Observing, recording and analyzing local weather data and making predictions based on that data.
Courage to Soar			
2007 Science			
Grade Expectations			
Vermont Science			
Grades 5-6			
Activity/Lesson	State	Standards	
Kite Flight	VT	SCI.5-6.S5-6:1.2	Identifying multiple variables that affect a system and using the variables to generate experimental questions that include cause and effect relationships.

Kite Flight	VT	SCI.5-6.S5-6:2.1	Using logical inferences derived from evidence to predict what may happen or be observed in the future.
Kite Flight	VT	SCI.5-6.S5-6:6.2	Questioning data that might not seem accurate or does not fit into the pattern of other findings.
Kite Flight	VT	SCI.5-6.S5-6:22.1	Predicting and explaining the effect of gravitational forces between pairs of objects (i.e., earth and objects' on the surface, earth and moon, earth and sun).
Soaring Higher	VT	SCI.5-6.S5-6:5.1	Determining an appropriate representation (line graph in addition to prior examples) to represent their findings accurately.
Soaring Higher	VT	SCI.5-6.S5-6:19.1	Measuring and calculating speed (the distance an object moves over a measured amount of time).
Soaring Higher	VT	SCI.5-6.S5-6:19.a	Speed indicates the rate at which an object is traveling.
Soaring Higher	VT	SCI.5-6.S5-6:19.b	Speed is a relationship between the distance an object travels and time elapsed.
Soaring Higher	VT	SCI.5-6.S5-6:21.1	Investigating variables that change an object's speed, direction, or both, and identifying and describing the forces that cause the change in motion.
Soaring Higher	VT	SCI.5-6.S5-6:21.a	A force applied to a moving object will change the object's speed, direction or both.
Aviation Pioneers	VT	SCI.5-6.S5-6:1.2	Identifying multiple variables that affect a system and using the variables to generate experimental questions that include cause and effect relationships.
Aviation Pioneers	VT	SCI.5-6.S5-6:3.1.d	A strategy for conducting multiple trials ("Fair Test").
Aviation Pioneers	VT	SCI.5-6.S5-6:4.2	Collecting data and recording accurate and complete data from multiple trials.
Aviation Pioneers	VT	SCI.5-6.S5-6:7.2	Using experimental results to support or refute original hypothesis.
Aviation Pioneers	VT	SCI.5-6.S5-6:45.2	Relating this phenomenon to lunar and solar eclipses and explaining how technology has allowed scientists to extend existing ideas about the solar system.
Flying a Styrofoam Plane	VT	SCI.5-6.S5-6:3.1.d	A strategy for conducting multiple trials ("Fair Test").
Flying a Styrofoam Plane	VT	SCI.5-6.S5-6:4.1	Choosing appropriate measurements for the task and measuring accurately.
Flying a Styrofoam Plane	VT	SCI.5-6.S5-6:4.2	Collecting data and recording accurate and complete data from multiple trials.
Flying a Styrofoam Plane	VT	SCI.5-6.S5-6:7.2	Using experimental results to support or refute original hypothesis.

Flying a Styrofoam Plane	VT	SCI.5-6.S5-6:19.1	Measuring and calculating speed (the distance an object moves over a measured amount of time).
Looking for Answers:A research project	VT	SCI.5-6.S5-6:4.2	Collecting data and recording accurate and complete data from multiple trials.
Looking for Answers:A research project	VT	SCI.5-6.S5-6:5.1	Determining an appropriate representation (line graph in addition to prior examples) to represent their findings accurately.
The Matter of Air	VT	SCI.5-6.S5-6:1.1	Distinguishing between observational, experimental, and research questions (e.g., Observational—How does a cricket chirp? Experimental—Does the amount of light affect how a cricket chirps? Research—Do all crickets chirp? Why do crickets chirp?).
The Matter of Air	VT	SCI.5-6.S5-6:2.1	Using logical inferences derived from evidence to predict what may happen or be observed in the future.
The Matter of Air	VT	SCI.5-6.S5-6:3.1.d	A strategy for conducting multiple trials (“Fair Test”).
The Matter of Air	VT	SCI.5-6.S5-6:4.2	Collecting data and recording accurate and complete data from multiple trials.
The Matter of Air	VT	SCI.5-6.S5-6:7.2	Using experimental results to support or refute original hypothesis.
The Matter of Air	VT	SCI.5-6.S5-6:13.a	Gas is a state of matter that has mass.
The Matter of Air	VT	SCI.5-6.S5-6:14.1	Predicting the effect of heating and cooling on the physical state and the mass of a substance.
The Matter of Air	VT	SCI.5-6.S5-6:22.1	Predicting and explaining the effect of gravitational forces between pairs of objects (i.e., earth and objects’ on the surface, earth and moon, earth and sun).
The Four Forces of Flight	VT	SCI.5-6.S5-6:1.1	Distinguishing between observational, experimental, and research questions (e.g., Observational—How does a cricket chirp? Experimental—Does the amount of light affect how a cricket chirps? Research—Do all crickets chirp? Why do crickets chirp?).
The Four Forces of Flight	VT	SCI.5-6.S5-6:3.1.d	A strategy for conducting multiple trials (“Fair Test”).
The Four Forces of Flight	VT	SCI.5-6.S5-6:4.2	Collecting data and recording accurate and complete data from multiple trials.
The Four Forces of Flight	VT	SCI.5-6.S5-6:21.1	Investigating variables that change an object’s speed, direction, or both, and identifying and describing the forces that cause the change in motion.
The Four Forces of Flight	VT	SCI.5-6.S5-6:21.a	A force applied to a moving object will change the object’s speed, direction or both.

The Four Forces of Flight	VT	SCI.5-6.S5-6:21.b	Friction is a force that often opposes motion.
The Four Forces of Flight	VT	SCI.5-6.S5-6:21.c	Gravity and magnetism are examples of long-range forces that do not require direct contact of the interacting objects.
The Four Forces of Flight	VT	SCI.5-6.S5-6:22.1	Predicting and explaining the effect of gravitational forces between pairs of objects (i.e., earth and objects' on the surface, earth and moon, earth and sun).
The Four Forces of Flight	VT	SCI.5-6.S5-6:22.a	Gravity is the force that holds objects to the earth's surface, keeps planets in orbit around the sun, and governs the rest of the motion in the solar system.
The Four Forces of Flight	VT	SCI.5-6.S5-6:22.b	The force of gravity pulls toward the center of mass of an object.
The Four Forces of Flight	VT	SCI.5-6.S5-6:25.2	Distinguishing between objects affected by magnetic force and objects affected by other non-contact forces, using evidence to explain this principle.
Controlling the Plane	VT	SCI.5-6.S5-6:2.1	Using logical inferences derived from evidence to predict what may happen or be observed in the future.
Controlling the Plane	VT	SCI.5-6.S5-6:14.1	Predicting the effect of heating and cooling on the physical state and the mass of a substance.
Controlling the Plane	VT	SCI.5-6.S5-6:22.1	Predicting and explaining the effect of gravitational forces between pairs of objects (i.e., earth and objects' on the surface, earth and moon, earth and sun).