

<b>Learning to Fly: The Wright Brother's Adventure</b>			
<b>2004 Science</b>			
<b>Grade Level Articulations</b>			
<b>Arizona Science</b>			
<b>Grade 6</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
The Society	AZ	SCI.6.1.1.PO 2	Formulate questions based on observations that lead to the development of a hypothesis.
The Society	AZ	SCI.6.1.3.PO 6	Formulate new questions based on the results of a completed investigation.
The Society	AZ	SCI.6.2.1.PO 1	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Jacques Cousteau [inventor, marine explorer], supports Strand 4; William Beebe [scientist], supports Strand 4; Thor Heyerdahl [anthropologist], supports Strand 6).
The Society	AZ	SCI.6.2.2.PO 3.b	Apply the following scientific processes to other problem solving or decision making situations (questioning)
Wright Brothers: 1900 Glider	AZ	SCI.6.2.1.PO 1	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Jacques Cousteau [inventor, marine explorer], supports Strand 4; William Beebe [scientist], supports Strand 4; Thor Heyerdahl [anthropologist], supports Strand 6).
Meet the Wrights	AZ	SCI.6.2.1.PO 1	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Jacques Cousteau [inventor, marine explorer], supports Strand 4; William Beebe [scientist], supports Strand 4; Thor Heyerdahl [anthropologist], supports Strand 6).
1901: The First Improvement	AZ	SCI.6.2.2.PO 3.k	Apply the following scientific processes to other problem solving or decision making situations (identifying variables)
New Data	AZ	SCI.6.1.3.PO 5	Analyze the results from previous and/or similar investigations to verify the results of the current investigation.
New Data	AZ	SCI.6.1.3.PO 6	Formulate new questions based on the results of a completed investigation.
1903: Powered Flight	AZ	SCI.6.1.2.PO 4	Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers).
1903: Powered Flight	AZ	SCI.6.1.3.PO 4	Interpret simple tables and graphs produced by others.

1903: Powered Flight	AZ	SCI.6.2.2.PO 3.e	Apply the following scientific processes to other problem solving or decision making situations (measuring)
1904: Improvement in Dayton	AZ	SCI.6.1.4.PO 2	Display data collected from a controlled investigation.
1904: Improvement in Dayton	AZ	SCI.6.1.4.PO 3	Communicate the results of an investigation with appropriate use of qualitative and quantitative information.
1904: Improvement in Dayton	AZ	SCI.6.1.4.PO 5	Communicate the results and conclusion of the investigation.
1904: Improvement in Dayton	AZ	SCI.6.2.2.PO 3.c	Apply the following scientific processes to other problem solving or decision making situations (communicating)
<b>Learning to Fly: The Wright Brother's Adventure</b>			
<b>2004 Science</b>			
<b>Grade Level Articulations</b>			
<b>Arizona Science</b>			
<b>Grade 7</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
The Society	AZ	SCI.7.1.3.PO 7	Formulate new questions based on the results of a previous investigation.
The Society	AZ	SCI.7.2.1.PO 1	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Rachel Carson [scientist], supports Strand 4; Luis Alvarez [scientist] and Walter Alvarez [scientist], support Strand 6; Percival Lowell [scientist], supports Strand 6; Copernicus [scientist], supports Strand 6).
The Society	AZ	SCI.7.2.2.PO 3.b	Apply the following scientific processes to other problem solving or decision making situations (questioning)
Meet the Wrights	AZ	SCI.7.2.1.PO 1	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Rachel Carson [scientist], supports Strand 4; Luis Alvarez [scientist] and Walter Alvarez [scientist], support Strand 6; Percival Lowell [scientist], supports Strand 6; Copernicus [scientist], supports Strand 6).
1901: The First Improvement	AZ	SCI.7.2.2.PO 3.k	Apply the following scientific processes to other problem solving or decision making situations (identifying variables)
New Data	AZ	SCI.7.1.3.PO 3	Analyze results of data collection in order to accept or reject the hypothesis.
New Data	AZ	SCI.7.1.3.PO 4	Determine validity and reliability of results of an investigation.
New Data	AZ	SCI.7.1.3.PO 6	Refine hypotheses based on results from investigations.

New Data	AZ	SCI.7.1.3.PO 7	Formulate new questions based on the results of a previous investigation.
1903: Powered Flight	AZ	SCI.7.1.2.PO 4	Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers).
1903: Powered Flight	AZ	SCI.7.2.2.PO 3.e	Apply the following scientific processes to other problem solving or decision making situations (measuring)
1904: Improvement in Dayton	AZ	SCI.7.1.4.PO 3	Communicate the results of an investigation with appropriate use of qualitative and quantitative information.
1904: Improvement in Dayton	AZ	SCI.7.1.4.PO 5	Communicate the results and conclusion of the investigation.
1904: Improvement in Dayton	AZ	SCI.7.2.2.PO 3.c	Apply the following scientific processes to other problem solving or decision making situations (communicating)
<b>Learning to Fly: The Wright Brother's Adventure</b>			
<b>2004 Science</b>			
<b>Grade Level Articulations</b>			
<b>Arizona Science</b>			
<b>Grade 8</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
The Society	AZ	SCI.8.1.3.PO 8	Formulate new questions based on the results of a previous investigation.
The Society	AZ	SCI.8.2.1.PO 1	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Watson and Crick [scientists], support Strand 4; Rosalind Franklin [scientist], supports Strand 4; Charles Darwin [scientist], supports Strand 4; George Washington Carver [scientist, inventor], supports Strand 4; Joseph Priestley [scientist], supports Strand 5; Sir Frances Bacon [philosopher], supports Strand 5; Isaac Newton [scientist], supports Strand 5).
The Society	AZ	SCI.8.2.2.PO 1.b	Apply the following scientific processes to other problem solving or decision making situations (questioning)
The Society	AZ	SCI.8.2.2.PO 3	Defend the principle that accurate record keeping, openness, and replication are essential for maintaining an investigator's credibility with other scientists and society.
The Society	AZ	SCI.8.2.2.PO 4	Explain why scientific claims may be questionable if based on very small samples of data, biased samples, or samples for which there was no control.

			Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Watson and Crick [scientists], support Strand 4; Rosalind Franklin [scientist], supports Strand 4; Charles Darwin [scientist], supports Strand 4; George Washington Carver [scientist, inventor], supports Strand 4; Joseph Priestley [scientist], supports Strand 5; Sir Frances Bacon [philosopher], supports Strand 5; Isaac Newton [scientist], supports Strand 5).
Meet the Wrights	AZ	SCI.8.2.1.PO 1	
Meet the Wrights	AZ	SCI.8.2.2.PO 3	Defend the principle that accurate record keeping, openness, and replication are essential for maintaining an investigator's credibility with other scientists and society.
1900: Kitty Hawks	AZ	SCI.8.1.3.PO 7	Critique scientific reports from periodicals, television, or other media.
1900: Kitty Hawks	AZ	SCI.8.2.2.PO 3	Defend the principle that accurate record keeping, openness, and replication are essential for maintaining an investigator's credibility with other scientists and society.
1901: The First Improvement	AZ	SCI.8.2.2.PO 1.k	Apply the following scientific processes to other problem solving or decision making situations (identifying variables)
1901: The First Improvement	AZ	SCI.8.2.2.PO 3	Defend the principle that accurate record keeping, openness, and replication are essential for maintaining an investigator's credibility with other scientists and society.
1901: The First Improvement	AZ	SCI.8.5.2.PO 3	Describe how the acceleration of a body is dependent on its mass and the net applied force (Newton's 2nd Law of Motion).
1901: The First Improvement	AZ	SCI.8.5.2.PO 4	Describe forces as interactions between bodies (Newton's 3rd Law of Motion).
New Data	AZ	SCI.8.1.3.PO 8	Formulate new questions based on the results of a previous investigation.
1903: Powered Flight	AZ	SCI.8.1.2.PO 4	Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers).
1903: Powered Flight	AZ	SCI.8.1.3.PO 6	Identify the potential investigational error that may occur (e.g., flawed investigational design, inaccurate measurement, computational errors, unethical reporting).
1903: Powered Flight	AZ	SCI.8.2.2.PO 1.e	Apply the following scientific processes to other problem solving or decision making situations (measuring)
1904: Improvement in Dayton	AZ	SCI.8.1.3.PO 7	Critique scientific reports from periodicals, television, or other media.
1904: Improvement in Dayton	AZ	SCI.8.1.4.PO 1	Communicate the results of an investigation.

1904: Improvement in Dayton	AZ	SCI.8.1.4.PO 3	Present analyses and conclusions in clear, concise formats.
1904: Improvement in Dayton	AZ	SCI.8.1.4.PO 5	Communicate the results and conclusion of the investigation.
1904: Improvement in Dayton	AZ	SCI.8.2.2.PO 1.c	Apply the following scientific processes to other problem solving or decision making situations (communicating)
1904: Improvement in Dayton	AZ	SCI.8.5.2.PO 4	Describe forces as interactions between bodies (Newton's 3rd Law of Motion).
<b>Learning to Fly: The Wright Brother's Adventure</b>			
<b>2004 Science</b>			
<b>Grade Level Articulations</b>			
<b>Arizona Science</b>			
<b>Grades 9-12</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
The Society	AZ	SCI.9-12.2.1.PO 2	Describe how diverse people and/or cultures, past and present, have made important contributions to scientific innovations.
The Society	AZ	SCI.9-12.2.2.PO 4	Describe how scientists continue to investigate and critically analyze aspects of theories.
Wright Brothers: 1901 Glider	AZ	SCI.9-12.1.2.PO 1	Demonstrate safe and ethical procedures (e.g., use and care of technology, materials, organisms) and behavior in all science inquiry.
Meet the Wrights	AZ	SCI.9-12.1.3.PO 3	Critique reports of scientific studies (e.g., published papers, student reports).
Meet the Wrights	AZ	SCI.9-12.2.1.PO 2	Describe how diverse people and/or cultures, past and present, have made important contributions to scientific innovations.
Meet the Wrights	AZ	SCI.9-12.2.2.PO 4	Describe how scientists continue to investigate and critically analyze aspects of theories.
1900: Kitty Hawks	AZ	SCI.9-12.2.2.PO 4	Describe how scientists continue to investigate and critically analyze aspects of theories.
1901: The First Improvement	AZ	SCI.9-12.1.1.PO 4	Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).
1901: The First Improvement	AZ	SCI.9-12.1.2.PO 3.a	Design an appropriate protocol (written plan of action) for testing a hypothesis (Identify dependent and independent variables in a controlled investigation)
1901: The First Improvement	AZ	SCI.9-12.1.3.PO 4.c	Evaluate the design of an investigation to identify possible sources of procedural error, including (controls)

1901: The First Improvement	AZ	SCI.9-12.2.2.PO 4	Describe how scientists continue to investigate and critically analyze aspects of theories.
1901: The First Improvement	AZ	SCI.9-12.5.2.PO 5	Use Newton's 3rd Law to explain forces as interactions between bodies (e.g., a table pushing up on a vase that is pushing down on it; an athlete pushing on a basketball as the ball pushes back on her).
1901: The First Improvement	AZ	SCI.9-12.5.2.PO 9	Represent the force conditions required to maintain static equilibrium.
New Data	AZ	SCI.9-12.1.3.PO 2	Evaluate whether investigational data support or do not support the proposed hypothesis.
New Data	AZ	SCI.9-12.1.4.PO 1	For a specific investigation, choose an appropriate method for communicating the results.
1902: Success at Last	AZ	SCI.9-12.1.1.PO 4	Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).
1903: Powered Flight	AZ	SCI.9-12.1.1.PO 4	Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).
1903: Powered Flight	AZ	SCI.9-12.1.2.PO 3.b	Design an appropriate protocol (written plan of action) for testing a hypothesis (Determine an appropriate method for data collection (e.g., using balances, thermometers, microscopes, spectrophotometer, using qualitative changes))
1903: Powered Flight	AZ	SCI.9-12.1.2.PO 5	Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.
1903: Powered Flight	AZ	SCI.9-12.1.4.PO 2	Produce graphs that communicate data.
1903: Powered Flight	AZ	SCI.9-12.5.2.PO 4.a	Using Newton's 2nd Law of Motion, analyze the relationships among the net force acting on a body, the mass of the body, and the resulting acceleration (graphically)
1904: Improvement in Dayton	AZ	SCI.9-12.1.4.PO 1	For a specific investigation, choose an appropriate method for communicating the results.
1904: Improvement in Dayton	AZ	SCI.9-12.1.4.PO 3	Communicate results clearly and logically.
1904: Improvement in Dayton	AZ	SCI.9-12.5.2.PO 5	Use Newton's 3rd Law to explain forces as interactions between bodies (e.g., a table pushing up on a vase that is pushing down on it; an athlete pushing on a basketball as the ball pushes back on her).
1904: Improvement in Dayton	AZ	SCI.9-12.5.2.PO 9	Represent the force conditions required to maintain static equilibrium.