

# Alignment of Learning Objectives and Standards

## *Temperature as a Key Indicator*

Learning Objective	<u>Climate Literacy Standard</u>	<u>National Science Content Standard</u> Grades 9–12	<u>West Virginia State Science Standard</u> Grades 9–12	NASA GCCE Related Activity
<p>Apply research skills to locate relevant data on an environmental issue.</p> <ul style="list-style-type: none"> <li>Students will learn how to locate, access and utilize data sets to support a selected physical phenomenon.</li> <li>Students will learn how to import data into Excel and produce an appropriate graph of that data.</li> </ul>	3	<p>A—Science As Inquiry</p> <p>C—Life Science</p> <p>D—Earth and Space Science</p>	<p>CS: 1—Nature of Science</p> <p>CS: 2—Content of Science—Conceptual Biology</p> <p>CS: 3—Application of Science</p>	<p><a href="#"><i>Analyzing Tree Rings to Determine Climate Change</i></a></p>
<p>Analyze data to identify trends occurring in global mean temperatures.</p>		<p>A—Science As Inquiry</p> <p>E—Science and Technology</p>	<p>CS: 1—Nature of Science</p> <p>CS: 2—Content of Science—Conceptual Biology</p> <p>Biology</p> <p>CS: 3—Application of Science</p>	<p><a href="#"><i>Seasons and Cloud Cover: Are they related?</i></a></p>
<p>Use scientific data to support a position on global mean temperatures as an environmental issue.</p>	4e 4f	<p>A—Science As Inquiry</p> <p>E—Science and Technology</p>	<p>CS: 1—Nature of Science</p> <p>CS: 2—Content of Science—Conceptual Biology</p> <p>CS: 3—Application of Science</p>	
<p>Relate historical perspectives to global climate change research.</p>	4e 4f	<p>E—Science and Technology</p> <p>G—History and the Nature of Science</p>	<p>CS: 2—Content of Science—Earth Science</p>	<p><a href="#"><i>Is Portland Oregon Experiencing Global Warming?</i></a></p>
<p>Explain the impacts of changes in environmental temperatures and understand these changes may be long-reaching and slow to develop.</p>		<p>C—Life Science</p> <p>F—Science in Personal and Social Perspectives</p>	<p>CS: 2—Content of Science—Biology</p> <p>Environmental Science</p>	

Learning Objective	Climate Literacy Standard	National Science Content Standard Grades 9–12	West Virginia State Science Standard Grades 9–12	NASA GCCE Related Activity
			Conceptual Science Earth Science	
Describe underlying environmental mechanisms that drive global mean temperature trends.	1 2c 3b 4f	C—Life Science  D—Earth and Space Science	CS: 2—Content of Science—Physical Science  Environmental Science  Earth Science	<a href="#"><i>Variables Affecting Earth's Albedo</i></a>
Identify anthropogenic sources of increased global mean temperatures.	1 4f	C—Life Science	CS: 2—Content of Science— Environmental Science	
Explain possible human consequences to predicted global climate change.		C—Life Science  F—Science in Personal and Social Perspectives	CS: 2—Content of Science— Environmental Science  Conceptual Science	
List key atmospheric greenhouse gases and explain their significance to the global temperature issue.	1 2c	D—Earth and Space Science	CS: 2—Content of Science— Environmental Science	
Explain the carbon cycle, carbon sources and sinks within the cycle, and its significance to global temperatures.		D—Earth and Space Science	CS: 2—Content of Science— Environmental Science	
Students investigate and understand that energy transfer between the sun and the Earth and its atmosphere drives weather and climate on Earth. Key concepts include weather phenomena and the factors that affect climate including radiation and convection				<a href="#"><i>Solar Cell Energy Availability from Around the Country.</i></a>