

**BIOLOGY**

**NJSLS-S-HS-ESS3-1 Earth and Human Activity**

**HS-ESS3-1: Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.**

**Clarification Statement:** Examples of key natural resources include access to fresh water (such as rivers, lakes, and groundwater), regions of fertile soils such as river deltas, and high concentrations of minerals and fossil fuels. Examples of natural hazards can be from interior processes (such as volcanic eruptions and earthquakes), surface processes (such as tsunamis, mass wasting and soil erosion), and severe weather (such as hurricanes, floods, and droughts). Examples of the results of changes in climate that can affect populations or drive mass migrations include changes to sea level, regional patterns of temperature and precipitation, and the types of crops and livestock that can be raised.

**Assessment Boundary:** N/A

**Evidence Statements:** HS-ESS3-1

Science & Engineering Practices	Disciplinary Core Ideas	Cross-Cutting Concepts
<p><b>Constructing Explanations and Designing Solutions</b></p> <p><a href="#">Constructing explanations and designing solutions in 9–12 builds on K–8 experiences and progresses to explanations and designs that are supported by multiple and independent student-generated sources of evidence consistent with scientific knowledge, principles, and theories.</a></p> <p><a href="#">Construct an explanation based on valid and reliable evidence obtained from a variety of sources (including students’ own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.</a></p>	<p><b>ESS3.A: Natural Resources</b></p> <p><a href="#">Resource availability has guided the development of human society.</a></p> <p><b>ESS3.B: Natural Hazards</b></p> <p><a href="#">Natural hazards and other geologic events have shaped the course of human history; [they] have significantly altered the sizes of human populations and have driven human migrations.</a></p>	<p><b>Cause and Effect</b></p> <p><a href="#">Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects.</a></p> <p><b>Connections to Engineering, Technology, and Applications of Science</b></p> <p><b>Influence of Science, Engineering, and Technology on Society and the Natural World</b></p> <p><a href="#">Modern civilization depends on major technological systems.</a></p>

**Connections to other DCIs in this grade-band:** N/A

**Articulation of DCIs across grade-bands:** MS.LS2.A ; MS.LS4.D ; MS.ESS2.A ; MS.ESS3.A ; MS.ESS3.B

**NJSLS ELA: RST.11-12.1, WHST.9-12.2**

**NJSLS Math: MP.2, HSN.Q.A.1, HSN.Q.A.2, HSN.Q.A.3**

**5E Model**

**HS-ESS3-1: Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.**

<p>Engage Anticipatory Set</p>	<p>PBS: Water World</p> <p>The following video will provide students with a look into the impacts that climate change is having in Bangladesh. <a href="http://www.pbs.org/now/shows/543/index.html">http://www.pbs.org/now/shows/543/index.html</a></p> <p>Sinking Islands</p> <p>View the following video and discuss how the negative impacts of climate change on island communities. <a href="http://www.emtv.com.pg/article.aspx?slug=Kivalina-Carteret-Similarities-of-the-Sinking-Islands&amp;">http://www.emtv.com.pg/article.aspx?slug=Kivalina-Carteret-Similarities-of-the-Sinking-Islands&amp;</a></p>
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	<p><u><a href="https://www.nasa.gov/feature/nasa-how-does-climate-change-affect-humans/">NASA: How Does Climate Change Affect Humans?</a></u>  <u><a href="https://www.opened.com/video/nasa-how-does-climate-change-affect-humans/5786128">https://www.opened.com/video/nasa-how-does-climate-change-affect-humans/5786128</a></u></p>
<p><b>Exploration</b> Student Inquiry</p>	<p>The following sites provide insight into how the availability of natural resources, the occurrence of natural hazards, and climate change have influenced human activity. After analyzing this information, students will construct an argument explaining how these factors have influenced human activity. Explanations should include specific evidence from these sources.</p> <p><u><a href="#">Indigenous Peoples</a></u>  <u><a href="#">Land Use and Land Cover</a></u>  <u><a href="#">Rural Communities</a></u>  <u><a href="#">Human Health</a></u></p>
<p><b>Explanation</b> Concepts and Practices</p>	<p><u><a href="#">In these lessons</a></u>  Teachers Should: Introduce formal labels, definitions, and explanations for concepts, practices, skills or abilities.  Students Should: Verbalize conceptual understandings and demonstrate scientific and engineering practices.  <u><a href="#">Topics to Be Discussed in Teacher Directed Lessons (Disciplinary Core Ideas):</a></u>  <u><a href="#">ESS3.A: Natural Resources</a></u>  <u><a href="#">Resource availability has guided the development of human society.</a></u>  <u><a href="#">ESS3.B: Natural Hazards</a></u>  <u><a href="#">Natural hazards and other geologic events have shaped the course of human history; [they] have significantly altered the sizes of human populations and have driven human migrations.</a></u></p>
<p><b>Elaboration</b> Extension Activity</p>	<p>Additional Online Activities: STEM on the Brain  <u><a href="https://www.stemonthebrain.com/resources/codes/NJSLS-S-HS-Ess3-1">https://www.stemonthebrain.com/resources/codes/NJSLS-S-HS-Ess3-1</a></u></p>
<p><b>Evaluation</b> Assessment Tasks</p>	<p><u><a href="#">Assessment Task A: Written Explanation</a></u>  Teacher will evaluate the students' explanations and the use of evidence to support arguments. See Evidence Statements.</p>