

## Climate Change the big Experiment

<b>Unit Author</b>	
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Course Name(s)	Earth and Environmental Science
Course Number(s)	8th and 9th grade
Course Section(s)	23-24
School City, State, Zip	Sanford, NC 28327
Instructor Name(s):	Heather Clevenger

<b>Unit Overview</b>	
<b>Unit Plan Title</b>	Climate Change the big Experiment
<b>Curriculum-Framing Questions</b>	
Essential Question	<p>Why is climate change regarded as the greatest public health challenge of the 21st century?</p> <p>Why is the Paris Agreement goal to keep global warming well below 2 degrees C so important to our health?</p>
Unit Questions	<p>How can you explain the impact of natural climate controls on climate? (topography and latitude)</p> <p>How can past climate data help predict future climate trends?</p> <p>How do natural processes like volcanic activity, solar activity, and ocean currents change the global climate?</p>
<b>Unit Summary</b>	
<p>Students will be completing different projects using current data from different websites about interactions between human activities and nature. By using data from these websites students will look at different theories to help discover ways to explain their understanding of the Paris Agreement and reasons they believe climate change is regarded as the greatest public health challenge. Using information they research in class they will start to discover new theories and thoughts about the different subjects.</p>	

<b>Subject Area(s):</b> (List all subjects that apply)
Science, Earth Science, Engineering

<b>Grade Level</b> (Click boxes of all grade levels that apply)
INTEL® TEACH TO THE FUTURE

## Climate Change the big Experiment

- |                              |                                   |
|------------------------------|-----------------------------------|
| <input type="checkbox"/> K-2 | <input type="checkbox"/> 3-5      |
| X 6-8                        | X 9-12                            |
| X ESL                        | <input type="checkbox"/> Resource |
| X Gifted and Talented        | Other:                            |

### Student Objectives/Learning Outcomes

Students will recognize properly graphed annual temperature increases.

Students will recognize correlation between CO<sub>2</sub> increases and global temperature increase as well as natural fluctuates in annual temperature.

Students interpret various forms of data (graphic, written, and visual) and identify relationships between population growth, greenhouse gas emissions, temperature rise, ice melt, and sea level rise.

### Targeted State Frameworks/Content Standards/Benchmarks

**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.

**HS-ESS3-3.** Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.

**HS-ESS2-4.** Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

**HS-ESS3-5.** Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems

**EEn.2.5.4** Predict the weather using available weather maps and data (including surface, upper atmospheric winds, and satellite imagery).

**EEn.2.5.5** Explain how human activities affect air quality.

**EEn.2.6** Analyze patterns of global climate change over time.

**EEn.2.6.1** Differentiate between weather and climate.

**EEn.2.6.2** Explain changes in global climate due to natural processes.

**EEn.2.6.3** Analyze the impacts that human activities have on global climate change (such as burning hydrocarbons, greenhouse effect, and deforestation).

**EEn.2.6.4** Attribute changes to Earth's systems to global climate change (temperature change, changes in pH of ocean, sea level changes, etc.).

### Procedures

All procedures will be described in the different lesson plans for the class.

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Please, go to the following Google Folder for the specific information.
<b>Approximate Time Needed</b> (Example: 45 minutes, 4 hours, 1 year, etc.)
5 lessons: Two: 90 minute class for each lesson. For a total of 10 days.
<b>Prerequisite Skills</b>
Basic computer skill, basic information required from grade levels 6-8, an understanding of Canvas learning management system.

<b>Materials and Resources Required For Unit</b>
Computer
Materials for each lesson will be included in the lesson plans in this folder.

Technology – Hardware (Click boxes of all equipment needed.)

<input checked="" type="checkbox"/> Computer(s)	<input checked="" type="checkbox"/> Projection System	
<input checked="" type="checkbox"/> Internet Connection	<input checked="" type="checkbox"/> Scanner	
Technology – Software (Click boxes of all software needed.)		
<input checked="" type="checkbox"/> Database/Spreadsheet	<input checked="" type="checkbox"/> Internet Web Browser	<input checked="" type="checkbox"/> Word Processing
<input checked="" type="checkbox"/> Desktop Publishing	<input checked="" type="checkbox"/> Multimedia	

Printed Materials	All materials will be on canvas. Students will completing all of the information through canvas to be graded by the teacher at a later date.
Supplies	See all lesson plans for materials
Internet Resources	<p><a href="http://www.teachervision.fen.com/curriculum-planning/new-teacher/48347.html">Http://www.teachervision.fen.com/curriculum-planning/new-teacher/48347.html</a></p> <p><a href="https://www.plt.org/activity-resources/focus-on-forests-activity-8-climate-change-and-forests/">https://www.plt.org/activity-resources/focus-on-forests-activity-8-climate-change-and-forests/</a></p> <p><a href="https://populationeducation.org/sites/default/files/people-and-climate-change_the-data-is-in.pdf">https://populationeducation.org/sites/default/files/people-and-climate-change_the-data-is-in.pdf</a></p> <p><a href="https://www.youtube.com/watch?v=CXTZJBIJIOw">https://www.youtube.com/watch?v=CXTZJBIJIOw</a></p> <p>Google notes and directions</p>
Others	None

### Accommodations for Differentiated Instruction

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Resource Student	Guided notes will be given to students.
Gifted Student	Note will be discussion type questions for the students to review the notes and then discuss amongst their groups or class.
<b>Student Assessment</b>	
Observation and hands on activities	