**KMT and Sea Level Change**

Climate change is something that we can no longer turn a blind eye to. Dramatic shifts in weather patterns are being seen across the globe. This year we started our Chemistry class by taking a look at local climate change by examining the pattern in the number of hot summer days over recent years. For this project, we are going to look around the world to find impacts of climate change happening **now**. Represented in our class are people who have connections to many other places than just Beaverton. The goal of this project is to choose a location somewhere else in the world and to research how the climate is different in that location now than it was ten, twenty, fifty or a hundred years ago. The place you choose should have some significance to you. Perhaps you once lived there, or you still have family there, perhaps it is the country from which your family came. It might be a place you are interested in. It could even be Beaverton or somewhere else in Oregon.

**Summative Assessment Task Choice Board**

| **Comic Strip**  Comic strip should include characters and text. | **Google Slides / Doc**  Slides or document should include images and text explanation. | **Video / Tik Tok**  Video should include verbal explanation and props. |
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| **Jamboard**  Jamboard should include images and text explanation. | **Poster**  Poster should include images and text or video explanation. | **Screencast**  Screencast should include verbal explanation and simulation or slides. |
| **Animation**  Animation should include characters and verbal explanation. | **Children’s Book**  Children’s book should include drawings, characters and text. | **Song/Poem/Story**  Song/poem/story should include lyrics and performance. |

Have another idea? Get permission from your teacher first!

**Task Specific Requirements:**

Make a display or poster (physical or digital-no bigger than 11x17”) that highlights your country or location of choice and how sea level change and/or ocean temperature has changed there, the problem(s) it has caused in that area, and how people are attempting to solve that problem.

Include the following:

* Name of country/location
* Map of where your country/location is located
* Pictures relevant to climate change in that area
* Describe how weather patterns are changing in the region of the world you have chosen to research
* Sea level/ocean temperature data
* Visualization of that data
* Written description of how climate change it is affecting people in that country and problem(s) that are caused by the shift in weather patterns
* Written description of how people in that area are attempting to solve the problem(s) climate change has caused.

**General Requirements:** (when your project is graded these are the things that your teacher will be looking for:)

* A clear, logical structure, which answers the question.
* A complete and correct explanation of how science is used to address how weather is changing in that area.
* Relevant weather data to explain how the climate has changed the weather patterns in that area.
* An interesting discussion of how the people in that area are trying to find solutions to the problems that climate change is causing in terms of a “factor”. You must choose at least **one** of these factors: **ethical, social, economic, political, cultural, environmental, moral.**
* Well chosen, reliable sources which are fully referenced using footnotes and/or in text citations.
* Above all your teacher is looking for EVIDENCE!
* You need at least 3 types of sources and 5-7 different SCIENTIFIC or EDUCATIONAL sources in total.

**Resources:**

[Library Resources Cheat Sheet](https://docs.google.com/document/d/1JFFzIr84DrchBKZY2gSNW-0_zAyc2kbz12ON1IN-Hsk/edit?usp=sharing)

World data and trends:

[Global Map Climate Portal](http://sdwebx.worldbank.org/climateportal/index.cfm?page=global_map)

[Climate Change Knowledge Portal](http://sdwebx.worldbank.org/climateportal/index.cfm)

[How every part of the world has warmed](https://www.carbonbrief.org/mapped-how-every-part-of-the-world-has-warmed-and-could-continue-to-warm)

USA: [climate data](https://www.globalchange.gov/browse/indicators)

[Climate Reanalyzer](https://climatereanalyzer.org/)

Articles on UN Climate Change Report

[Climate damage and extreme weather](https://www.npr.org/2018/10/08/655360909/grim-forecast-from-u-n-on-global-climate-change)

[12 years to limit climate change](https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report)

[Earth’s temperature to rise 1.5 C](https://www.telegraph.co.uk/news/2018/10/08/earths-temperature-rise-15c-early-2030-amid-dire-warnings-un/)

[Climate damage by 2030](https://abcnews.go.com/International/united-nations-report-details-looming-climate-crisis/story?id=58354235)

[NASA: Understanding Sea Level](https://sealevel.nasa.gov/understanding-sea-level/overview)

[Google Doc Link with screenshots for NASA: Understanding Sea Level](https://docs.google.com/document/d/1sKJh_P04KVNdTeqpEPPQerwwSCCHoXy9Yb7gTozZsfg/edit?usp=sharing)

**Social justice component resources**

[350.org](http://350.org/) ([here is a short film](https://350.org/matagimalohifilm/#takeaction) featuring high school students from Portland)

350.org [Fighting for Our Survival](https://350.org/survivalfilm/)

[Marshall Islands](https://www.youtube.com/watch?v=Uk_pBF82sQI): [Selina Neirok Leem](https://www.worldbank.org/en/country/pacificislands/brief/selina-neirok-leem-a-small-island-girl-with-big-dreams), Kathy Jetnil-Kijiner

[Bangladesh](https://www.nrdc.org/onearth/bangladesh-country-underwater-culture-move)

[Xiye Bastida](https://www.pbs.org/wnet/peril-and-promise/2019/09/meet-xiye-bastida-americas-greta-thunberg/)

[Portland Youth Climate Strike](https://www.pycs.org/)

[350 pacific.org](https://350.org/pacific/)

Portland Students in 2019 Climate Strike: [Oregonian](https://www.oregonlive.com/news/2019/09/oregon-students-are-ditching-class-to-push-for-a-green-new-deal-today-heres-what-to-expect.html), [KGW](https://www.kgw.com/article/news/education/portland-students-to-walk-out-friday-for-global-climate-strike/283-e0af63dc-2312-45be-ba3d-f014423464a6), [WW](https://www.wweek.com/news/city/2019/09/20/we-want-change-tens-of-thousands-of-portland-teens-call-for-action-in-global-climate-strike/), [OregonLive](https://www.oregonlive.com/portland/2019/12/portland-area-students-will-walk-out-of-class-friday-as-part-of-national-climate-strike.html)

[States of Matter PhET](https://phet.colorado.edu/sims/html/states-of-matter-basics/latest/states-of-matter-basics_en.html)

[Gas Properties PhET](https://phet.colorado.edu/sims/html/gas-properties/latest/gas-properties_en.html) Go to ideal tab

**Citation resources**

[OWL Purdue-APA Footnote citations](https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/footnotes_and_endnotes.html)

[APA Image Citation Guidelines](http://libguides.scf.edu/apa_image_citation)

[APA Interview/Personal Communication](https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/reference_list_other_non_print_sources.html)

[OSLIS APA Citation Maker](https://secondary.oslis.org/cite-sources/@@apa-citation)

**Infographic sites**

[Canva](https://www.canva.com/)

[Pictochart](https://piktochart.com/)

[Vengage](https://venngage.com/)

[Visme.co](https://www.visme.co/)

| **Climate Change Poster Project Rubric** | | | |
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|  | Description | | Task-specific clarification |
| **0** | If you do not reach a standard described by the descriptors below, you will receive a score of zero (0). | | |
| **1** | The student is able to:  · **outline** the ways in which science is used to address a specific problem or issue  · **outline** the implications of using science to solve a specific problem or issue, interacting with a factor  · **apply** scientific language to communicate understanding but does so **with limited success**  · document sources, with **limited success**. | The student is able to:  · give a brief summary of the changes in weather patterns due to climate change, the problem(s) this is causing, and what is being done to solve the problems with little to no evidence.  · give a brief summary of the benefits and drawbacks of the scientific solution in terms of one of the factors with little to no evidence.  · infrequently use scientific language in their product, or does so incorrectly.  · to cite sources using APA format but there are frequent errors and/or omissions. | |
| **2** | The student is able to:  · **summarizes** the ways in which science is applied and used to address a specific problem or issue  · **describe** the implications of using science and its application to solve a specific problem or issue, interacting with a factor  · **sometimes apply** scientific language to communicate understanding  · **sometimes** document sources correctly. | The student is able to:  · include the major points of the changes in weather patterns due to climate change, the problem(s) this is causing, and what is being done to solve the problems with at least one piece of supporting evidence.  · has given a detailed account of the benefits and drawbacks of the scientific solution in terms of one of the factors with at least one piece of supporting evidence.  · occasionally use scientific language in their product.  · inconsistently cite sources using APA format. | |
| **3** | The student is able to:  · **describe** the ways in which science is applied and used to address a specific problem or issue  · **discuss** the implications of using science and its application to solve a specific problem or issue, interacting with a factor  · **usually apply** scientific language to communicate understanding clearly and precisely  · **usually** document sources correctly. | The student is able to:  · has given a detailed account of the changes in weather patterns due to climate change, the problem(s) this is causing, and what is being done to solve the problems with two pieces of supporting evidence.  · has a considered and balanced review that includes a range of arguments about the benefits and drawbacks of the scientific solution in terms of one of the factors with two pieces of supporting evidence.  · frequently and regularly use scientific language in their product.  · credit sources of information, following APA conventions, with few omission or errors. | |
| **4** | The student is able to:  · **explain** the ways in which science is applied and used to address a specific problem or issue  · **discuss and evaluate** the implications of using science and its application to solve a specific problem or issue, interacting with a factor  · **consistently apply** scientific language to communicate understanding **clearly and precisely**  · document sources **completely**. | The student is able to:  · has given a detailed account of the changes in weather patterns due to climate change, the problem(s) this is causing, and and what is being done to solve the problems with three pieces of supporting evidence.  · has a considered and balanced review that includes a range of arguments about the benefits and drawbacks of the scientific solution in terms of one of the factors with at least three pieces of supporting evidence  · constantly and reliably use scientific language to communicate. The language in the product is clear and precise.  · credit all sources of information, following correct APA conventions. This includes footnotes, images, and a correctly formatted works cited list. | |