The UbD Template, version 2.0

Unit: Climate Change Grade: Elementary

|  |  |  |  |
| --- | --- | --- | --- |
| **Stage 1- Desired Results** | | | |
| **Established Goals**  **Practices**  \*Asking questions and defining problems  \*Developing and using models  \*Planning and carrying out investigation  \*Analyzing and interpreting data  \*Using mathematics and computational thinking  \*Constructing explanations and designing solutions  \*Obtaining, evaluating, communicating information  **Crosscutting Concepts**   * Cause and effect   - Stability and change  **Disciplinary Core Ideas**  *Life Sciences*  LS2 C: Ecosystem Dynamics, Functioning, and Resilience  LS2 D: Social Interactions and Group Behavior  *Earth & Space Systems*  ESS2 D: Weather and Climate  ESS3 A: Natural Resources  ESS3 C: Human Impacts on Earth System  ESS3D: Global Climate Change  *Technology, Engineering, and Applications of Science*  ETS1 B: Developing Possible Solutions   |  |  | | --- | --- | |  |  | | **Transfer** | | |
| Students will be able to independently use their learning to...  Students will be able to make informed and responsible decisions with regards to actions that affect climate and the environment.  May also include desired behaviors, attitudes & dispositions. | | |
| **Meaning** | | |
| UNDERSTANDINGS  Students will understand that…  -climate change is real and is happening right now.  -Earth’s climate is changing  -human activity affects our environment.  -the effects of climate change are being felt everywhere in different ways  -humans are able to take action to reduce the impacts of climate change  -there’s a connection between the land and the ocean  What specifically do you want students to understand?  What inferences should they make? | ESSENTIAL QUESTIONS  Students will keep considering…  -What is climate change?  -What human activities impact climate change?  -How is climate change influencing people’s lives around the world?  -What actions can humans take to reduce the impacts of climate change?  What thought-provoking questions will foster inquiry, meaning-making and transfer? | |
| **Acquisition of Knowledge and Skill** | | |
| Students will know - Facts & basic concepts to recall  -what human activities are contributing to climate change  -the impacts of climate change  -the difference between climate and weather  -basic facts about coral reefs and plants  -ways to promote stewardship to our environment  -The Scientific Method  (create hypothesis, determine dependent and independent variables, record observations, record data, draw conclusions & make inferences, reflect , adjust and adapt)  -Parts of a plant and parts of a coral  -Why plants and corals are important  -What humans can do to help preserve and protect life on the earth.  -**Vocabulary:** weather, climate, methane, greenhouse gas, temperature, drought, fossil fuel, renewable energy, coral reef, acidification, | Students will be skilled at - Skills & processes they are able to use  -Communicating about climate change in a meaningful way  -Compare and contrast  -Observing objectively  -Developing collaboration skills  -Conducting experiments | |
| **Stage 2 – Evidence** | | | |
| **Evaluative Criteria** | *Students will show their learning by…* | | |
| \*rubric | PERFORMANCE TASKS  -Create a Climate Change Action Plan  -Create a PSA video (green screen, etc) incorporating elements of performing arts (poetry, song, theater, dance, etc) to share with others (AS & DR) |  |  |
|  | OTHER EVIDENCE  -Create data from various activities from unit plan  -Growth demonstration shown in Pre/Post-Assessment |  |  |
| **Stage 3 – Learning Plan** | | | |
| Summary of Key Learning Events and Instruction | | | |
| Pre-Assessment:  In a small group, students make a poster to draw and/or write all they know about climate change. These posters can be displayed in class throughout the unit and added to after each lesson. (can also be done individually) | | | Progress Monitoring:  Students add to posters after each lesson.  Climate Change Looks, Sounds, Feels chart displayed in the classroom and added to throughout the unit.  Students make observations on their own to practice observation & notetaking. |
| Learning Events  **Kick-off event:** Skype session with partner schools between the Pacific (American Samoa, RMI, FSM) and the Dominican Republic (or wherever you are located in the world). What is your relationship with the ocean and the environment?  **Lesson 1:** Introduction to Climate Change: Differentiating Climate and Weather  Watch Brainpop Climate Change video  **Lesson 2** - Land and Ocean Connections (land impacts on water and vice versa)  [Build an Edible Coral Polyp](https://www.calacademy.org/educators/lesson-plans/build-a-coral-polyp)  **Lesson 3** - Cause and Effect: Human activities and climate change  AS & DR coral bleaching (temperature rise), ocean acidification, sea level rise, erosion   1. Ocean Acidification <https://web.stanford.edu/~ajspakow/downloads/outreach/ph-student-9-30-09.pdf> 2. Temperature Rise (Coral Bleaching, etc…) <http://www.explorationworks.org/wp-content/uploads/2016/09/Weather-Lesson-2-Lesson-Temperature1.pdf> 3. Sea Level Rise   <https://www.jpl.nasa.gov/edu/teach/activity/the-science-of-earths-rising-seas/>  <https://aquarius.umaine.edu/docs/hands_on_sea_level.pdf>   1. Erosion (sedimentation, cutting trees, etc…) 2. Greenhouse effect and greenhouse gases   <https://www.esrl.noaa.gov/gmd/outreach/lesson_plans/Modeling%20the%20Greenhouse%20Effect.pdf>  \*students interview parents about climate change and compare/contrast the past to present (did the notice any changes, their perspective on climate change, etc....)  **Lesson 4** - Natural Threat (natural disasters, diseases, other)  **Lesson 5** - Conservation Efforts (MPA, etc)- virtual field trip or field trip  **Lesson 6** - What can I/We do- Create a product to promote conservation (PSA, plan,)  **Culminating Event-** Exchange/Present (DR & AS)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Resources:**  <http://oceanservice.noaa.gov/education/literacy/climate_literacy.pdf>  <https://docs.wixstatic.com/ugd/3687d6_6a513846e5954c238ccaadbf5694d77e.pdf>  <https://www.lifeisagarden.co.za/soil-erosion-experiment/#.U3uAtVhdVmc>  <https://web.stanford.edu/~ajspakow/downloads/outreach/ph-student-9-30-09.pdf> -playing with acid/base  <http://ocean.si.edu/ocean-acidification> - video on oa  [Brainpop Climate Change](https://www.brainpop.com/science/earthsystem/climatechange/) | | |
| Reflection & Notes: | | | |

© 2011 by Grant Wiggins and Jay McTighe