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Lessons from the Ocean

Pedagogy Option 1: Ocean Literacy Resource List

Grade 5 - Integrated STEM

EP 2 - The ocean and life in the ocean shape the features of the Earth.	
1. Graham Cracker Tectonics Lab	This is a hands-on lab that involves using graham crackers and cool whip to represent the different types of tectonic plates and how they move and interact with one another. I like this lab because it hooks kids in with food and the hands-on practice really demonstrates how the plates work. It is a good visual for a concept that cannot be seen in a classroom.
2. 3-1 Skills Lab - Mapping Earthquakes and Volcanoes.	This activity has students mapping the location of volcanoes and earthquakes to recognize patterns on a map. I like that it uses latitude and longitude on a map, which are good skills for students to practice. They also recognize patterns and can make inferences about locations of the tectonic plates.
3. Interactives Dynamic Earth - Plates and Boundaries	Here is a great interactive activity that could be used for the whole group, in small groups, or individually. It shows students the different plates on a map and the different types of boundaries. There are also animations of the different boundaries to provide a visualization. It has an interactive game to challenge students to identify plates and label the types of boundaries they have. This could be used in conjunction with the other two activities.
4. The Forces that Shape Rocks - article a day set from Readworks.org	This is a set of articles about erosion from Readworks. I love Readworks because the articles are online and that saves on paper. They can be set up to have an audio recording with the article. There are also vocabulary and comprehension question sets. The teacher can set up an account for each student and monitor their progress. They have articles on every topic imaginable and have all different reading levels available for easy differentiation.

EP 3. The Ocean is a Major Influence on Weather and Climate

Ocean Exploration Facts - Weather and Climate (NOAA)	This is a great article about ocean currents. It could be used as an introductory read about the topic. The article is short and fairly easy to read for 5 th graders. Younger students might need this to be read in a whole group to help with technical terms.
Ocean Currents - multimedia discovery missions (NOAA)	This is a resource I found on NOAA. It has several lessons, this one in particular is about ocean currents. It has two short videos with animations explaining ocean currents. There are also two accompanying online activities; El Nino and ocean current and marine life. This would be easy to assign in Google Classroom and students could work in pairs or on their own. I am trying to reduce my paper use so this is a great resource to help with that goal.
Multimedia Discovery Missions (NOAA)	This is the list of multimedia discovery missions available from NOAA. They have a wide range of lessons on different ocean features such as tides, waves, and hurricanes. Could be used for several of the EPs of Ocean Literacy.

EP 4. The ocean makes Earth habitable

Save the Plankton, Breath Freely - National Geographic	In this activity, students calculate how many breathes they take come from phytoplankton. This is a short activity that can be done in one class period. This activity will help students understand the role of the ocean in their everyday lives. This is important for my rural students who are thousands of miles from the ocean. I like them to be aware of their connections to the outside world.
With Every Breath You Take, Thank the Ocean - Smithsonian	This is a nice article about how the ocean contributes to Earth's breathable oxygen. There is also an imbedded video about phytoplankton to support the reading.

<p>A collection of Cambrian Fossils- Smithsonian</p>	<p>This is a photo/image collection of ancient fossils from the Cambrian Period (Explosion). A good way to investigate the origin of life on Earth and discuss that life originated in the ocean.</p>
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<p>EP 5. The ocean supports a great diversity of life and ecosystems</p>	
<p>International Shark Attack File - Florida Museum</p>	<p>This link is the main page for the International Shark Attack File from the Florida Museum. It has great articles and information about sharks and shark attacks. There are also interactive maps and data available to incorporate graphing and data reading in class. Kids love learning about sharks!</p>
<p>Life in the Estuary -</p>	<p>Here is a resource from New Zealand about estuaries. It has a variety of information, articles, and activities to help students explore this type of ecosystem. There are also videos and infographs on the main page as well. There are links to other topics as well.</p>
<p>Ocean Animal Encyclopedia</p>	<p>An encyclopedia of ocean animals from invertebrates to mammals. There is information on bycatch and sustainable fishing practices as well. A good resource for reports or research presentations.</p>

<p>EP 6. The ocean and humans are inextricably interconnected</p>	
<p>Nasa Climate Kids - What is Happening in the Ocean</p>	<p>The main page has information about the ocean and its functions. There are also videos, games, and activities to engage students and teach them about climate change.</p>
<p>NOAA - Fisheries</p>	<p>This website has a lot of information on fisheries, sustainable fishing, and different articles related to the topic. I could see myself creating a webquest for students to search the site on their own and learn more on the topic. There are links to videos and data as well.</p>

[3D Geography - Coasts](#)

I found this website interesting, and there are lot activities, videos, and information about coastal geography. There a links to other types of events such as earthquakes and volcanoes.

Resources

Graham Cracker Plate Tectonics Lab. (N.d.). Retrieved from <https://www.paulding.k12.ga.us/cms/lib/GA01903603/Centricity/Domain/2517/GrahamCrackerPlateTectonicsLab.docx.pdf>

Mapping Earthquakes and Volcanoes. (N.d.) Retrieved from <http://www.cdschools.org/cms/lib04/PA09000075/Centricity/Domain/1437/lab%20on%20mapping%20earthquakes%20and%20volcanoes.pdf>

Plates and Boundaries. (2017). Retrieved from <https://www.learner.org/interactives/dynamicearth/tectonicsmap/>

Forces that Shape Rocks. (2016). Readworks. Retrieved from <https://www.readworks.org/article/The-Forces-that-Shape-Rocks/6cd72cc6-11da-4467-85f9-d99de98dce63#!articleTab:content/contentSection:4076a0aa-e9ed-4cc4-a66e-faefd288b07d/>

Ocean Exploration - Weather and Climate (May 2018). NOAA. Retrieved from <https://oceanexplorer.noaa.gov/facts/climate.html>

Ocean Currents - Multimedia Discovery Missions. (N.d.). NOAA. Retrieved from <https://oceanexplorer.noaa.gov/edu/learning/player/lesson08.html>

Multimedia Discovery Missions. (N.d.). NOAA. Retrieved from <https://oceanexplorer.noaa.gov/edu/learning/welcome.html#lesson8>

Save the Plankton, Breathe Freely. (2019). National Geographic. Retrieved from <https://www.nationalgeographic.org/activity/save-the-plankton-breathe-freely/>

With Every Breath You Take, Thank the Ocean. (July, 2017). Smithsonian. Retrieved from <https://ocean.si.edu/ocean-life/plankton/every-breath-you-take-thank-ocean>

Cambrian Fossil Collection. (N.d.). Smithsonian. Retrieved from <https://ocean.si.edu/through-time/ancient-seas/collection-cambrian-fossils>

International Shark Attack File. (2019). Retrieved July 11, 2019, from <https://www.floridamuseum.ufl.edu/shark-attacks/>

Life in the estuary. (2019). Retrieved July 11, 2019, from <https://www.sciencelearn.org.nz/resources/1230-life-in-the-estuary>

Ocean Animal Encyclopedia. (n.d.). Retrieved from <https://oceana.org/marine-life/cephalopods-crustaceans-other-shellfish>

What Is Happening in the Ocean? (n.d.). Retrieved from <https://climatekids.nasa.gov/ocean/>

Noaa. (n.d.). Sustainable Fisheries. Retrieved from <https://www.fisheries.noaa.gov/topic/sustainable-fisheries>

All about coasts. (2018). Retrieved from <https://www.3dgeography.co.uk/coastal-geography>