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Standards in Global Education Assignment
Week #6
November 3, 2016

From the Next Generation Science Standards these are the new science standards that are being implemented within our school system.

Make observations of plants and animals to compare the diversity of life in different habitats.

LS4.D: Biodiversity and Humans

- There are many different kinds of living things in any area, and they exist in different places on land and in water.

Observable features of the student performance by the end of the grade:

1 Identifying the phenomenon under investigation a Students identify and describe* the phenomenon and purpose of the investigation, which includes comparisons of plant and animal diversity of life in different habitats.

2 Identifying the evidence to address the purpose of the investigation a Based on the given plan for the investigation, students describe* the following evidence to be collected:

- i. Descriptions* based on observations (firsthand or from media) of habitats, including land habitats (e.g., playground, garden, forest, parking lot) and water habitats (e.g., pond, stream, lake).
- ii. Descriptions* based on observations (firsthand or from media) of different types of living things in each habitat (e.g., trees, grasses, bushes, flowering plants, lizards, squirrels, ants, fish, clams).
- iii. Comparisons of the different types of living things that can be found in different habitats. Students describe how these observations provide evidence for patterns of plant and animal diversity across habitats.

3. Planning the investigation

- a. Based on the given investigation plan, students describe how the different plants and animals in the habitats will be observed, recorded, and organized.
- b. Collecting the data a Students collect, record, and organize data on different types of plants and animals in the habitats.

2. Third grade students learn about the diamondback terrapin, an iconic species of the Chesapeake Bay. These turtles are experiencing declines in parts of their range due to a variety of factors including over collection, pollution, habitat loss, pollution, and drowning in crab pots. On a global level, the world's sea turtles have experienced similar declines because of very similar reasons. In fact nearly all of the sea turtle species on Planet Earth are considered endangered. Students will research some of the global issues impacting sea turtles and compare them to issues facing the diamondback terrapin. Students will then use this knowledge to assess a local Chesapeake Bay beach as potential terrapin habitat and search for threats to terrapin safety.

3. Students will ***Investigate the World***, by researching articles and websites that focus on global issues facing sea turtles. Using the WWF site <http://www.worldwildlife.org/species/sea-turtle> students will be divided into groups and assigned one of five different locations that WWF lists as important sea turtle habitats (Mesoamerican Reef, Coastal East Africa, Coral Triangle, The Galápagos, Gulf of California). Students will add to a ThingLink, their findings from their web research and share with the class. Students will watch video footage from the 1947 *arribada*, a mass nesting of turtles in Rancho Nuevo, Mexico. <https://www.youtube.com/watch?v=W4u3GL9SyyM> Students will review graphs showing changes in sea turtle populations today.

Students will work with naturalist educators from the local nature center to collect data on the habitat needs of the local diamondback terrapins by assessing a Chesapeake Bay beach. Students will look for signs of predators (raccoon, fox, opossum); use a seine net to collect data on fish and shellfish as terrapin food sources, and make measurements of the beach as a potential site for terrapin nesting.

4. Students will ***Communicate Ideas***, by creating informative posters or flyers about the need to protect terrapins now, before they become endangered like the world's sea turtles. Students may create Maplets citing their ideas for protecting terrapins. Students can also ***Take Action***, by promoting the use of By-Catch Reduction Devices (BRDs). These are rings that are placed on crab pots to keep terrapins from entering the traps, but allowing crabs to enter the traps.

Maryland Environmental Literacy Standards

These are standards developed by the Maryland State Department of Education and are required for high school graduation. They are normally infused into Science and Social Studies instruction.

STANDARD 5 HUMANS AND NATURAL RESOURCES The student will use concepts from chemistry, physics, biology, and ecology to analyze and interpret both positive and negative impacts of human activities on earth's natural systems and resources.

Topic A: Human Impact on Natural Processes Indicator 1: Analyze the effects of human activities on earth's natural processes. Indicator 2: Analyze the effects of human activities that deliberately or inadvertently alter the equilibrium of natural processes.

Topic B: Human Impact on Natural Resources Indicator 1: Analyze, from local to global levels, the relationship between human activities and the earth's resources.

Second grade students complete a unit on Natural Resources and learn that all of the products that we use in our daily lives come from the Earth. For example, students learn that paper comes from trees, metal comes from rock, glass is made from sand, plastic is made from oil, and t-shirts are made from cotton plants. Students learn about reducing, re-using and recycling to extend the lifespan of our natural resources and prevent our landfills from becoming too full.

To globalize this lesson, it would be interesting for the students to ***Gain Perspectives*** by learn about how children in other countries around the world work to conserve resources. One site,

The WorldCounts (<http://www.theworldcounts.com/stories/Recycle-Facts-for-Kids>), maintains a running tally of the amount of recycling taking place around the world and explores issues related to natural resource consumption. This site looks at recycling around the world, in a kid friendly way, <http://planetpals.com/recyclingworld.html>.

3. After their classroom investigation of global recycling projects and natural resource conservation. Students will visit the local landfill and recycling center to learn about the importance of recycling. Students will learn about the various items that can be recycled through the county recycling program. Students will then visit the Transfer Station, where the garbage trucks dump the trash hauled in from local homes and businesses. From the safety of the school bus, students will tally up all of the trash that they observe being dumped that should have been recycled (i.e. # of metal cans, # of glass bottles, # of cardboard boxes). Students will **Take Action** and **Communicate Ideas** by using this information and what they learned about natural resources conservation to create an informative message that they will design and use to decorate onto a reusable grocery bag. These bags will be distributed on Earth Day by local grocery stores to spread the message about resource conservation and protecting the planet.

4. Student grocery bag projects will be assessed to ensure that they have included essential elements such as data from their landfill trip, an appropriate and relevant message, and a demonstrated understanding of the connection between human activity and the Earth's resources.