2012

Scrubbing the Skunk

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Created by: Tim Sheeley
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Grade Level (Req.): 11th-12th grade	Content Area (Req.): Earth Science	Unit (Opt.):

Connections to Other Disciplines (Opt.):

- Geography
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Time Frame (Req.): One 80 minute class period	Goal (Req.): To help students understand human impact on water ecosystems.
	Objective (Req.): Students will be able to identify and locate latitude and longitude coordinates using a GPS unit.

Materials Needed (Req.):

- "A River Ran Wild" book
- Landscape Change Picture Set
- Garmin GPS
- Canoes and Equipment and Trash Bags
- IOWATER Test Kits
- Google Earth pictures
- Mimio Board and Overhead projector or LCD projector with PowerPoint

New Vocabulary (Opt.):

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Anticipatory Set/Introduction [Inquiry Question is required] (Req.): Is there any pattern with illegal dumping?

Instructional Sequence/Procedure (Req.):

1. Leading Activities – Read Aloud and Discuss "A River Ran Wild" (Robert Crumb?) – see Kathy Sundstedt lesson
2. Picture Progression & Journal Reflection >> 'Where does the aquatic life go?'
3. Geocaching Challenge (and practice)
4. Canoe Clean-up Trip on Skunk River marking trash waypoints and type.
5. Current Activities – Begin the lesson with an introduction to Google Earth website and discussing how to note each waypoint (locale) of trash collection from the Skunk River onto the website.
6. The students would then collaborate in their clean-up groups using laptops to mark these points online. **A low-tech option is for each group to have their own transparency and own color of marker to note waypoints so all can be combined and shared with the class at the end.
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Formative Evaluation (Req.): Check for understanding of the book during discussion	Assessment (Req.): Following the discussion of possible dumping patterns. The class will elect one of the sites to test water quality (IOWATER testing kits). Once a site is selected, the class will determine the relative and absolute location (understanding the difference) and add it to the "Iowater Website" – then planning the testing day.

Iowa Core Curriculum Standards Used (Req.):

- Geography, grade 9-12: Understand the use of geographic tools to locate/analyze data about people, places, and environments.
- Geography, grade 9-12: Understand how physical and human processes shape the Earth's surface and major ecosystems.
- Geography, grade 9-12: Understand how human actions modify the environment and how the environment affects humans.
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Common Core Curriculum Standards Used (Opt.):

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NGS Standards Used (Req.):

- How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information
- The physical processes that shape the patterns of Earth's surface
- The characteristics and spatial distribution of ecosystems and biomes on Earth's surface
- How human actions modify the physical environment
- How physical systems affect human systems
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Five Themes of Geography Used (Req.): • Location • Human-Environmental Interaction •	School District Standards and Benchmarks (Opt.): • • •

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21st Century Universal Constructs (Opt.):	
Other Disciplinary Standards (Opt.): • • • • •	
Other Essential Information (Opt.):	
Other Resources (Opt.): • • • •	