Teaching with Technology: Using EPA’s EnviroAtlas in the classroom to empower tomorrow’s decision-makers

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Introduction to EnviroAtlas

EnviroAtlas is a web-based tool developed by the EPA and its partners which provides interactive tools and resources for users to explore the benefits people receive from nature, often referred to as “ecosystem goods and services.”

Using EnviroAtlas, users can access, view, and analyze diverse information to better understand the potential impacts of decisions on natural resources and the services they provide. EnviroAtlas provides two primary interactive tools, the Interactive Map and the Eco-Health Relationship Browser, as well as GIS and analysis tools and informational resources.

EnviroAtlas tools and resources are well-suited for educational use, as they are freely available and do not require specialized software to use. To use EnviroAtlas requires only a computer and an internet connection.

Goals: Make it fun, relevant, and useful

The EnviroAtlas educational curriculum has been designed to align with the Next Generation Science Standards (NGSS), which were released in 2013 and have been adapted or adopted by adaptations by many states. The lesson plans are also aligned to State educational science standards by grade and topic.

The lesson plans have been designed to be universal so that teachers anywhere in the US can use them for their specific course curricula.

Relevant classroom courses

- Biology
- Health
- Earth Science
- Environmental Science
- Geography / GIS
- City Planning

EnviroAtlas Tools: The Interactive Map & The Eco-Health Relationship Browser

The EnviroAtlas curriculum makes use of the two primary interactive tools in EnviroAtlas to introduce students to concepts such as watershed geography and management, the water cycle, biodiversity, and connections between the environment and human health.

The tools and resources in the Interactive Map allow for analysis of relationships between people and the environment. Below is an example of the types of elements that can be mapped using EnviroAtlas.

The HUC Navigation Tool allows students to navigate upstream and downstream along waterways.

The Raindrop Tool allows students to follow the path of a raindrop from any point (like their school) to the nearest downstream waterbody.

Elevation Profile tool can be used to explore topographic variation.

All lesson plans were developed and reviewed by teachers and experienced educators.

Grades K-6: Exploring Your Watershed

- Includes a hands-on portion where students model a watershed, a portion where students analyze their school’s watershed using the Interactive Map, and an outdoor, exploratory portion.
- Available with or without internet, in English and in Spanish, for ESL classrooms, and with adaptations for grades K-3.
- Engages students with their local environment.

Grades 4-12+: Connecting Ecosystems and Human Health

- Includes technology portion using the Eco-Health Relationship Browser and a hands-on “connectivity” portion that uses string to connect human health outcomes to environmental conditions.
- Promotes discussion of human health outcomes that can have personal significance to students and their families, involves evidence from existing scientific literature; establishes role of ecosystems in human health.

Grades 9-Undergraduate: Building a Greenway Case Study

- Intended to showcase ways in which EnviroAtlas can support decision-making with maps, analysis tools, fact sheets, and downloadable data.

Impact of EnviroAtlas Curriculum #EPAEnviroAtlasEd

- 2,687 Total Participants
  1,159 Elementary students 203 Middle School students 229 High School students
- 72% of students from low-income/low-resource schools
- 1,096 teachers, educators, and professional staff
- 5 formal classroom visits
- 17 formal Conference presentations (NSTA, ESA, NCSE, EENC, etc.)
- 20+ teacher collaborators (K-5, including ESL & AIG, Grades 6-8, 9-12, including High School AP & High School IB, and K-12 Science Education Professionals with UNC Institute for the Environment)
- 54 classroom visits

All materials are FREE here: bit.ly/EPAEnviroAtlasED

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