Basic Environmental Science

Media Type: Microsoft® PowerPoint® Presentation
Duration: 95 slides

Goal: To learn basic elements related to environments and the sciences known to analyze and define them.

Description: This production includes information and descriptions related to the basic elements of environmental science. The importance of environments and the methods used to define and manage them are detailed within this production.

Objectives:
1. To define environmental science.
2. To evaluate atmosphere and weather.
3. To analyze biomes.
4. To identify human populations and resources.
5. To discuss the application of environmental science.

Horizontal Alignment

Core-Subject Area	Foundation Concept	Basic Understanding
Science	***Scientific Thinking & Investigating***	• Field and laboratory investigations • Critical thinking and scientific problem solving • Real-world investigations and applications • Analytical skills • Hypothesis development • Researching and proving theories • Collecting data • Technology-based research • Evaluating conclusions • Compare/contrast findings • Classification/organization skills
	Scientific Laws & Principles	• Cycles, structures and processes • Principles of biology, chemistry, anatomy, physiology or psychology • Human development • Horticulture • Patterns of behavior • Physical or kinesthetic activity

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Lesson Plan

Student and Teacher Notes are available to print in outline format. You can access these documents under the "Printable Resources" section. If student licenses have been purchased, an interactive version of the Student Notes is available in the "Interactive Activities" section. If printing the full PowerPoint® is desired, you may download the file and print the handouts as needed.

Class 1:

Slides 1-18

Begin class by distributing the *Basic Environmental Science Vocabulary Handout.* Present and discuss the *Basic Environmental Science - Introduction to Environmental Science* segment. Distribute the corresponding *Assessment* and instruct students to complete it. Distribute the *Physics Study Activity* and allow the remainder of class for students to work. Distribute the *Famous Environmental Scientists Project* for students to begin as homework.

Class 2:

Slides 19-33

Distribute *The Earth's Atmosphere Student Handout*. Present and discuss the *Basic Environmental Science - Atmosphere & Weather* segment. Remind students to use the *Vocabulary Handout* as a reference. Distribute the corresponding *Assessment* and instruct students to complete it. Hand out the *Global Resource Use Activity* and instruct students to begin working on it.

Class 3:

Slides 34-52

Remind students to use the *Vocabulary Handout*. Present and discuss the *Basic Environmental Science - Biomes* segment. Distribute the corresponding *Assessment* and instruct students to complete it. Pass out the *New Regulation Project* and allow the remainder of the class for students to work.

Class 4:

Slides 53-70

Present and discuss the *Basic Environmental Science - Human Populations & Resources* segment. Remind students to use the *Vocabulary Handout* as references. Distribute the *Assessment* and instruct students to complete it. Have students begin *The Environment & The Economy Activity.* Allow the remainder of the class for students to work.

Class 5:

Slides 70-90

Present and discuss the *Basic Environmental Science - Application of Environmental Science* segment. Remind students to use the *Vocabulary Handout* as a reference. Distribute the *Assessment* and instruct students to complete it. Allow the remainder of the class for student to work on their *Projects* and *Activities*.

Class 6:

Distribute the *Basic Environmental Science Final Assessment* and instruct students to complete it. Allow students to complete any unfinished work and present the *New Regulation Project*.

Lesson Links

USGS Forest and Rangeland Ecosystem Science Center

- http://fresc.usgs.gov/index.html

USDA Plants Database

- http://plants.usda.gov/index/java/

Career & Technical Student Organizations

Society for Range Management

- Student Competitions
- Student Conclave
- Masonic-Range Science Scholarship

National FFA

- Agronomy CDE
- Rangeland Assessment Career Development Event (CDE)

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LESSON PLAN

Career Connections

Using the *Career Connections Activity*, allow students to explore the various careers associated with this lesson. See the *Activity* for more details. *If student licenses have been purchased:* Students will select the interviews to watch based on your directions. *If only a teacher license is purchased:* Show students all the career interviews and instruct them to only complete the interview form for the required number of interviews.

- iCEV50025, Brock Dolman, Biologist, Occidental Arts & Ecology Center

Lab Activities

Physics Study

Directions:
Students should research the components of physics including heat, light, radiation, sound and the structure of atoms. Using this research, students should write a one page paper or create a small graph detailing the impact of those components on various environments. Remind students to use credible sources ending in .edu, .gov or .org.

Resource Competition

Directions:
Students should conduct research about resource use around the globe. Using this research, students should select five different countries and create an organized list based one the use of one particular resource within their selected countries.

The Environment and The Economy

Directions:
Students will research the connection between the environment and the economy and include resources consumption, pollution and sustainable development. Students must create a list which describes the relationship between the environment and the economy and participate in a classroom discussion and share their findings.

Projects

Famous Environmental Scientists

Students should conduct further research about the history of environmental science. Using this research, students should identify three well-known scientists who have made considerable contributions to their field. Once they have identified the scientists they should create a small worksheet with titles and details about each scientist, including various pertinent details.

New Regulation

Directions:
After learning about the basics of regulation students should conduct further research and craft a regulation of their own. Using research, students should select their proposed regulation and use a poster board or other presentation materials to explain their new regulation to the class. Remind students to use credible sources ending in .edu, .gov or .org.