

# 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.



Agriculture, Food & Natural Resources Career Cluster (AG)

Cluster	Standard
Natural Resources Systems Career Pathway (AG-NR)	Plan and conduct natural resource management activities that apply logical, reasoned and scientifically based solutions to natural resource issues and goals.
	Analyze the interrelationships between natural resources and humans.
	Develop plans to ensure sustainable production and processing of natural resources.
	Demonstrate responsible management procedures and techniques to protect or maintain natural resources.
Plant Systems Career Pathway (AG-PL)	Apply the principles of classification, plant anatomy and plant physiology to plant production and management.

College & Career Readiness Anchor Standards for Reading

Reading Standards for Informational Text	
Key Ideas & Details	Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
	<i>9-10.1</i> Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
	<i>11-12.1</i> Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

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## College & Career Readiness Anchor Standards for Reading

### Reading Standards for Informational Text

Craft & Structure	Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
Integration of Knowledge & Ideas	Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.
	Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
Range of Reading & Level of Text Complexity	Read and comprehend complex literary and informational texts independently and proficiently.

## College & Career Readiness Anchor Standards for Writing

### Writing Standards

Text Types & Purposes	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
Production & Distribution of Writing	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
	Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
Research to Build & Present Knowledge	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
	Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
	Draw evidence from literary or informational texts to support analysis, reflection, and research.

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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:** 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.



Slides  
1-18

**Class 2:** 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.



Slides  
19-33

**Class 3:** 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.



Slides  
34-52

**Class 4:** 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*



Slides  
53-70

*Environment & The Economy Activity*. Allow the remainder of the class for students to work.

**Class 5:** 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*.



Slides  
70-90

**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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## 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 on 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.