

# FRANKLIN-SIMPSON HIGH SCHOOL

**Course Name:** AP Environmental Science

**Unit Name:** Cycles and Climate Change

## **Objectives:**

### **Pollution**

#### A. Pollution Types

##### 1. Air pollution

(Sources—primary and secondary; major air pollutants; measurement units; smog; acid deposition—causes and effects; heat islands and temperature inversions; indoor air pollution; remediation and reduction strategies; Clean Air Act and other relevant laws)

#### B. Impacts on the Environment and Human Health

##### 1. Hazards to human health

(Environmental risk analysis; acute and chronic effects; dose-response relationships; air pollutants; smoking and other risks)

### **The Living World**

#### E. Natural Biogeochemical Cycles

(Carbon, nitrogen, phosphorus, sulfur, water, conservation of matter)

### **Purpose of the Unit:**

To understand the major air indoor and outdoor pollutants, smog and ozone depletion.

### **Prerequisites:**

Previous units of this class, Chemistry, Biology, and Earth Science.

**Daily Lesson Guide**

<b>Day</b>	<b>Lesson Content and Objectives</b>	<b>Focus Questions</b>	<b>Critical Thinking (High Yield / Literacy /LTF/etc.)</b>	<b>Engagement</b>	<b>Assessment and/or Accommodations</b>
<b>1</b> M	Review Cycles (Nitrogen, Water, Carbon, Phosphorus, Sulfur) Answer questions based on cycles.	Explain the major biogeochemical cycles, and how we influence them, and how they influence us.	Application	Learning with others, novelty/variety	Bell Ringer, Review
<b>2</b> T	Learn outdoor air pollutants, where they come from, causes and effects.	Identify major air pollutants and where they come from.	Comprehension	Personal response, Clear/modeled expectations	Bell Ringer
<b>3</b> W	Model the formation of smog. Case studies of smog and acid deposition.	Explain how photochemical smog and acid deposition are formed and describe the effects of each.	Application	Learning with others, Authenticity	Bell Ringer
<b>4</b> R	Use case studies to come up with solutions to smog and outdoor air pollution.	Examine various approaches to the control and prevention of outdoor air pollution.	Evaluation	Learning with others, Authenticity, Personal Response	Bell Ringer, assess work on case study
<b>5</b> F	Discuss ozone and indoor air pollution,	Explain the causes and	Comprehension	Personal response, Clear/modeled	Bell Ringer

	“sick building syndrome”	effects of stratospheric ozone depletion. Discuss the hazards of indoor air pollution (developing countries).		expectations	
<b>6</b> M	Analyze feedback loops to determine definitions, and gather information on human effects.	Discuss feedback loops, where they naturally occur, and how humans affect them.	Analysis	Personal response, Clear/modeled expectations, Authenticity	Bell Ringer, assess work
<b>7</b> T	Project over the effects of global warming	Explain Global Warming and its causes and effects.	Evaluation	Choice, Sense of Audience, Authenticity	Bell Ringer, assess work
<b>8</b> M	Project over the effects of global warming	Explain Global Warming and its causes and effects.	Evaluation	Choice, Sense of Audience, Authenticity	Bell Ringer, assess work
<b>9</b> T	Present project over the effects of global warming	Present your work.	Evaluation	Choice, Sense of Audience, Authenticity	Bell Ringer, Presentation
<b>10</b> W	Review Day	Review for Unit Test	Evaluation	Clear/modeled expectations	Bell Ringer, Assess through review
<b>11</b> R	MC Test Day	Unit Test	Evaluation	Clear/modeled expectations	Bell Ringer, Summative Assessment
<b>12</b> F	FRQ Test Day	Unit Test	Evaluation	Clear/modeled expectations	Bell Ringer, Summative Assessment