OLEAN HIGH SCHOOL

Course Name Environmental Science
Text: Environmental Science/ Nebel & Wright
Other Resources Laboratory Manual/ Report Book

Grades 11-12

Month	Topic Content	Skills	Concepts	Major Assessments	Learning Standards	Resource/Text Page
Sept.	• Environmental Science & Sustainability • Ecosystems: Units of Sustainability • Ecosystems: How They Work	• Basic Vocabulary • Lab Techniques/ Cooperative Learning • Note Taking • Critical Thinking • Problem Solving • Applying Concepts • Class Participation	• Environmentalism • The Global Picture • Sustainable Development • The Structure of Ecosystems • How Ecosystems Work	• Exams • Lab Reports • Projects • Portfolios • Class Participation	1.2a, .2b, 1.1a, 1.1c, 1.2c, 1.3a, 1.3c, 1e, 4.2a, 4.2b, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c 7.1a,7.1c	CH. 1-3
Oct.	• Ecosystems: In & Out of Balance • Ecosystems: Adapting to Change • The Global Human Population Explosion	• Basic Vocabulary • Lab Techniques/ Cooperative Learning • Note Taking • Critical Thinking • Problem Solving • Applying Concepts • Class Participation	• Population Balance • Growth Curves • Ecological Successions • Principles of Sustainability • Selection • Traits & Genes • Evolution • Global Changes • Population Explosion – Causes • Different Worlds • Population Growth Dynamics	• Exams • Lab Reports • Projects • Portfolios • Class Participation	1.1a, 1.1c, 1.2c, 1.1d, 4.2a, 4.2b, 4.3a, .3b, 4.4a, .5b, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c	CH. 4-6
Nov.	• Addressing the Population Problem • The Production & Distribution of Food	• Basic Vocabulary • Lab Techniques/ Cooperative Learning • Note Taking • Critical Thinking • Problem Solving • Applying Concepts • Class Participation	• Population & Development • Demographic Transition • New Direction • Crops & Animals: Major Patterns of Food Production • Food Distribution & Trade • Hunger, Malnutrition, & Famine • Sustainability & Food • Critical Thinking	• Exams • Lab Reports • Projects • Portfolios • Class Participation	1.1a, 1.1b, 1.2c, 1.3a, 4.2a, 4.2b, 4.3a, .3b, 4.4a, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c	CH. 7-8

Dec.	• Soil & the Soil Ecosystem • Pests & Pest Controls • Water, the Water Cycle, & Water Management	• Basic Vocabulary • Lab Techniques/ Cooperative Learning • Note Taking • Critical Thinking • Problem Solving • Applying Concepts • Class Participation	• Plants & Soil • Losing Ground • Need for Pest Control • Chemical Approach • Alternative Pest Controls • Socio. Issues in Pest management • Public policy • The Water Cycle • Human Impact • Sources & Uses of Fresh Water • Overdrawing Water Resources • ? More Water • Using Less Water • Stormwater Management	• Exams • Lab Reports • Projects • Portfolios • Class Participation	1.1a, 1.1b, 1.2c, 1.3a, 4.2a, 4.2b, 4.3a, .3b, 4.4a, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c	CH. 9-11
Jan.	• Sediments, Nutrients, & Eutrophication • Sewage Pollution & Rediscovering the Nutrient Cycle • Pollution form Hazardous Chemicals	• Basic Vocabulary • Lab Techniques/ Cooperative Learning • Note Taking • Critical Thinking • Problem Solving • Applying Concepts • Class Participation	• The Process of Eutrophication • Combating Symptoms of Eutrophication • Long Term Strategies • Sewage Hazards • Sewage Management & Treatment • HAZMATS • History • Cleanup • Management of New Wastes • Pollution Avoidance	• Exams • Lab Reports • Projects • Portfolios • Class Participation	1.1a, 1.1b, 1.2c, 1.3a, 4.2a, 4.2b, 4.3a, .3b, 4.4a, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c	CH. 12-14
Feb.	• Air Pollution & its Control • Major Atmospheric Changes	• Basic Vocabulary • Lab Techniques/ Cooperative Learning • Note Taking • Critical Thinking • Problem Solving • Applying Concepts • Class Participation	• Atmospheric & Air Pollution Essentials • Major Air Pollutants • Sources • Under Control • Indoor Pollution • Acid Deposition • Global Warming • Depletion of the Ozone	• Exams • Lab Reports • Projects • Portfolios • Class Participation	1.1a, 1.1b, 1.2a,1.2c, 1.3a, 3.1a, 4.1a,4.2a, 4.2b, 4.3a, 4.3b, 4.4a, 4.5a, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c	CH. 15-16

Mar.	• **Pollution & Public Policy** • **Wild Species: Biodiversity** • **Ecosystems as Resources**	• **Basic Vocabulary** • **Lab Techniques/ Cooperative Learning** • **Note Taking** • **Critical Thinking** • **Problem Solving** • **Applying Concepts** • **Class Participation**	• **Origins of Environmental Public Policy** • **Economic Effects** • **Implementing Policies** • **Cost-Benefit Analysis** • **Risk Analysis** • **Saving Wild Species** • **Value of Wild Species** • **Biodiversity** • **Ecosystems Under Pressure** • **Conservation & Preservation**	• **Exams** • **Lab Reports** • **Projects** • **Portfolios** • **Class Participation**	**1.1a, 1.1b, 1.2a,1.2c, 1.3a, 3.1a, 4.1a,4.2a, 4.2b, 4.3a, 4.3b, 4.4a, 4.5a, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c**	**CH. 17-19**
Apr.	• **Converting Trash to Resources** • **Energy Resources: The rise & Fall of Fossil Fuels**	• **Basic Vocabulary** • **Lab Techniques/ Cooperative Learning** • **Note Taking** • **Critical Thinking** • **Problem Solving** • **Applying Concepts** • **Class Participation**	• **Solid Waste Problems** • **Solutions** • **Public Policy & Waste Management** • **Energy Sources & Uses** • **Declining Reserves of Crude Oil** • **Alternative Fossil Fuels** • **Global Warming** • **Sustainable Energy Options**	• **Exams** • **Lab Reports** • **Projects** • **Portfolios** • **Class Participation**	**1.1a, 1.1b, 1.2a,1.2c, 1 4.1a,4.2a, 4.2b, 4.3a, 4.3b, 4.4a, 4.5a, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c**	**CH. 20-21**
May	• **Nuclear Power: Promise & Problems** • **Solar & Other Renewable Energy Sources** • **Lifestyle & Sustainability**	• **Basic Vocabulary** • **Lab Techniques/ Cooperative Learning** • **Note Taking** • **Critical Thinking** • **Problem Solving** • **Applying Concepts** • **Class Participation**	• **How Nuclear Power Works** • **Radioactive Materials & Their Hazards** • **Advanced Reactors** • **Future & Nuclear Power** • **Principles of Solar Energy** • **Indirect Solar Energy** • **Hydropower, Wind, Geothermal Energy** • **Urban Sprawl** • **Exurban Migration** • **Sustainable Cities**	• **Exams** • **Lab Reports** • **Projects** • **Portfolios** • **Class Participation**	**1.2a,1.2c, 1 4.1a,4.2a, 4.2b, 4.3a, 4.3b, 4.4a, 4.5a, 4.6a, 4.6b, 4.6c, 4.7a, 4.7b, 4.7c**	**CH. 22 -24**
June	• **Dream House Project** • **Final Exam**	• **Lab Techniques/ Cooperative Learning** • **Critical Thinking** • **Problem Solving** • **Applying Concepts**	• **All Previous Knowledge applies**	• **Final exam** • **Dream House Blueprints & House**	**All Previous STDs apply**	**All chapters and lab techniques.**