**Mr. Taylor’s Procedures**

Mr. Taylor **voice mail number**- 732-981-0700 ext. 7081

Mr. Taylor **e-mail address**- dftaylor@pway.org

(Best to reach me through email)

**Procedures**

When you enter the classroom each day please:

1. Put your books and belongings by your desk

2. Open your text book(if instructed to do so) and notebook and get

 homework out

3. When the bell rings, begin the "Do Now" which will be projected on

 screen

 If you have to use the bathroom, please ask me before the period has begun

 and after you have all materials ready for class.

**Other Important Information**

 1. **Notebook, 3 ring binder, plus highlighter**

 A good notebook with college ruled paper is best.

 Also, you will need a 3 ring binder for all of the hand-outs which you will be

 receiving throughout the whole year. All hand-outs will have the holes cut

 out for your binder, plus, I will have them numbered.

(It will help to keep you organized.)

 2. **Textbook** must be brought to class every day(THIS INCLUDES DAYS

 OF TESTS!), unless I can get a class set for us.

 3. **Homework**

 Most of the time we will finish assignments in class, however, you may

 have reading and/or projects to work on at home.

 4. **Grading**- The marking period grade is broken down as follows:

 Tests and quizzes- 50-60% Labs- 30-40% Homework- 10%

 \*\*\*note- these percentages will vary according to the number of labs or

 tests/quizzes

 \*\*\*note- labs are a very important part of science class and lab reports will

 be required for most labs. A sufficient amount of time (usually 1

 week) will be given to hand in labs and the due dates will be posted.

 Lab reports which are handed in late will be penalized 1 grade for

 every day the report is late.

 5. **Extra Help- :** After school**-** Monday , Wednesday , Thursday

 Before school**-** by arrangement (just let me know)

PISCATAWAY TOWNSHIP SCHOOLS

Course Syllabus

Course Title: Environmental Science

Textbook: **Holt, *Environmental Science***

Teacher: Daniel Taylor

 732-981-0700 ext. 7081

 dftaylor@pway.org Best to reach me through email.

Extra help Available By Appointment

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| --- | --- | --- | --- |
| **UNIT** | **TEXT****HOLT** | **TITLE and SCOPE** | **TEACHING DAYS (approximate time)** |
|  | **Chapter** |  |  |
| **I** | 1 and 2 | **Introduction to Environmental Science*** **Understanding Our Environment**
* **The Environment and Society**
* **Statistics and Models**
 |  16 days |
|  |  |  |  |
| **II** | 4,5,6 and 7 | **Ecology*** **Ecosystems**
* **Energy Flow in Ecosystems**
* **The Cycling of Materials**
* **How Ecosystems Change**
* **Biomes**
* **Freshwater Ecosystems**
* **Marine Ecosystems**
 |  20 days |
|  |  |  |  |
| **III** | 8,9 and 10 | **Populations*** **How Populations Change in Size**
* **How Species Interact with Each Other**
* **Studying Human Populations**
* **Changing Population Trends**
* **What is Biodiversity?**
 |  14 days |
|  |  |  |  |
| **IV** | 11,12,13 and 15 | **Water, Air, and Land*** **Water Use and Management**
* **Water Pollution**
* **What Causes Air Pollution**
* **Acid Precipitation**
* **The Ozone Shield**
* **Global Warming**
* **Feeding the World**
 | 21 days |
|  |  |  |  |
| **V** | 17 and 18 | **Energy Resources*** **Fossil Fuels**
* **Nuclear Energy**
* **Renewable Energy**
* **Alternative Energy and Conservation**
 |  10 days |
|  |  | **Total:** |  81 days |

**PHS CURRICULUM PLAN: (Days Noted Are Approximate Teaching Days Including Labs)**

|  |
| --- |
| **UNIT I Introduction to Environmental Science** |
| **UNDERSTANDING OUR ENVIRONMENT****( 5 Days)** |
| * **Define environmental science**
* **List major fields of study related to environmental science**
* **Environmental effects man has had throughout history**
* **Renewable and nonrenewable resources**
* **Classify environmental problems into 3 major categories**
 |
| **THE ENVIRONMENT AND SOCIETY****(9 Days)** |
| * **Describe “Tragedy of the commons”**
* **Explain the law of supply and demand**
* **List the differences between developed and developing countries**
* **Sustainability and the environment**
 |
| **STATISTICS AND MODELS****( 2 days)** |
| * **Three types of models used by scientists**
* **Conceptual verses mathematical models**
 |
|  **Total Unit I Teaching Days: 16** |

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| **UNIT II Ecology** |
| **ECOSYSTEMS****( 3 Days)** |
| * **Abiotic and biotic factors in an ecosystem**
* **Population differences within a species**
* **Habitats and their relationship with organisms**
 |
| **ENERGY FLOW IN ECOSYSTEMS****( 3 Days)** |
| * **Energy transfer from the sun to producers to consumers**
* **Examples of producers and consumers in different ecosystems**
* **Food webs and food chains**
* **Energy pyramids and trophic levels**
 |
| **THE CYCLING OF MATERIALS****( 3 Days)** |
| * **Carbon cycle**
* **How humans affect the carbon cycle**
* **Three stages of the nitrogen cycle**
* **Importance of nitrogen-fixing bacteria for all life**
* **Fertilizer use and the nitrogen/phosphorus cycles**
 |

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|  **UNIT II Ecology (continued)****HOW ECOSYSTEMS CHANGE****( 2 days)** |
| * **Two types of ecological succession**
* **How pioneer species contribute to ecological succession**
* **What happens during old-field succession**
 |
| **BIOMES****( 3 days)** |
| * **Why biomes are named based on the vegetation present**
* **Effects of temperature and precipitation on type of plant vegetation in an ecosystem**
* **The effect of latitude and altitude on types of plant vegetation in an ecosystem**
 |
| **FRESHWATER ECOSYSTEMS****(3 days)** |
| * **Factors that determine where an organism lives in an aquatic ecosystem**
* **Littoral and benthic zones that make up a lake or pond**
* **Environmental function of wetlands**
* **Fragility of a River ecosystem**
 |
| **MARINE ECOSYSTEMS****( 3 days)** |
| * **Estuary ecosystems**
* **Salt marshes verses mangrove swamps**
* **Threats to coral reefs and other ocean organisms**
 |
| **Total Unit II Teaching Days: 20** |

**PHS CURRICULUM PLAN: (Days Noted Are Approximate Teaching Days Including Labs)**

|  |
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| **UNIT III Populations** |
| **HOW POPULATIONS CHANGE IN SIZE****( 3 Days)** |
| * **3 main properties of a population**
* **Exponential population growth**
* **Reproductive behavior and growth rate of population**
* **Regulating population size in nature**
 |
| **HOW SPECIES INTERACT WITH EACH OTHER****( 3 Days)** |
| * **Difference between niche and habitat**
* **Five types of interactions between species**
* **Difference between parasitism and predation**
* **How symbiotic relationships evolve**
 |
| **STUDYING HUMAN POPULATION****( 3 Days)** |
| * **Human population growth throughout history**
* **Properties that scientist use to predict population sizes**
* **Four stages of demographic transition**
* **Why different countries may be at different stages of demographic transition**
 |
| **CHANGING POPULATION TRENDS****( 3 Days)** |
| * **Problems associated with rapid human population growth**
* **Comparing population**
 |
| **WHAT IS BIODIVERSITY?****(2 Days)** |
| * **Diversity of species types on earth**
* **Three levels of biodiversity**
* **Importance of biodiversity to humans and ecosystems**
* **Endangered and threatened species**
 |
| **Total Unit III Teaching Day: 14** |

**PHS CURRICULUM PLAN: Days Noted Are Approximate Teaching Days Including Labs)**

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| **Unit IV Water, Air, and Land** |
| **WATER USE AND MANAGEMENT****( 2 Days)** |
| * **Patterns of global water use**
* **Treating water for human consumption**
* **Water use in home, industry, and agriculture**
* **How to conserve water**
 |
| **WATER POLLUTION****( 4 Days)** |
| * **Point-source pollution and nonpoint-source pollution**
* **Classification of water pollutants**
* **Ground water pollution clean up challenges**
* **Sources of ocean pollution and how it effects the ecosystem**
* **Environmental laws governing water pollution**
 |
| **WHAT CAUSES AIR POLLUTION****( 3 Days)** |
| * **Five primary air pollutants and their sources**
* **Causes of air pollution in urban areas**
* **How smog forms**
* **Thermal inversion and air pollution**
 |
| **ACID PRECIPITATION****( 3 Days)** |
| * **Causes of acid precipitation**
* **How acid precipitation affects plants, soils, and aquatic ecosystems**
 |
| **THE OZONE SHIELD****(3 days)** |
| * **How the ozone layer shields the earth from much of the sun’s harmful radiation**
* **How chlorofluorocarbons damage the ozone layer**
* **Process of how ozone hole forms**
* **Damaging effects of ultraviolet radiation**
 |
| **GLOBAL WARMING****(4 days)** |
| * **How the earth’s atmosphere is like the glass in a greenhouse**
* **Why the carbon dioxide content of the Earth’s atmosphere is increasing**
* **Possible explanations for the increase in average global temperature**
* **What a warmer Earth might be like**
 |
| **FEEDING THE WORLD****(2 days)** |
| * **Major causes of malnutrition**
* **Environmental costs of producing different types of food**
* **Green revolution**
 |
| **Total Unit IV Teaching Day: 21** |

**PHS CURRICULUM PLAN: Days Noted Are Approximate Teaching Days Including Labs)**

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| **UNIT V Energy Resources** |
| **FOSSIL FUELS****(2 Days)** |
| * **Factors that influence the value of a fuel**
* **How fuels are used to generate electricity in electric power plant**
* **Patterns of energy consumption and production in the world and in the United States**
* **Fossil fuel formation and use**
* **Advantages and disadvantages of fossil fuels**
 |
| **NUCLEAR ENERGY****(2 Days)** |
| * **Nuclear fission**
* **How nuclear power works**
* **Advantages and disadvantages of nuclear fuel**
 |
| **RENEWABLE ENERGY****(3 Days)** |
| * **Forms of renewable energy**
* **Similarities and differences between passive and active solar heating**
* **Wind energy**
* **Hydroelectric and geothermal energy**
 |
| **ALTERNATIVE ENERGY AND CONSERVATION****( 3 Days)** |
| * **Alternative energy technologies**
* **Hydrogen as a fuel source in the future**
* **Difference between energy efficiency and energy conservation**
* **Energy efficient transportation**
* **How to conserve energy in your daily life**
 |