

Basics of Environmental Science

Unit Outline

1. Team Members: Joann Ewing, John Ewing, and Frank Wasco
2. Title of Course: Technology Major 9 (9th grade)
3. Title of Unit: Basics of Environmental Science
4. Approximate length: 3 Weeks
5. Brief description of the Unit with expected final outcomes:

Students will explore environmental concerns of the community, identify basic needs of people, wildlife and domestic animals, define natural resources, and compare and contrast conservation and preservation. They will build these fundamentals of environmental science individually and in groups.

6. Major Goals of the Unit

Student will be able to:

- Discuss and categorize the environmental concerns of some school and community members
- Identify the similar basic needs of people, wildlife, and domestic animals.
- Define a natural resource
- List the five major natural resources.
- Demonstrate the importance of caring for our natural resources.
- Compare and contrast conservation and preservation.
- Generate several programs that are in place to conserve or preserve our natural resources.

7. Sequence of balance and integrated activities for the students

Students will complete the following activities:

Community Survey – Create student-generated questions to ask three community members concerning environmental issues. In small groups categorize and summarize the group answers. (Use Rubric #1)

Group Activity – In groups of four read the instructions for ‘What Will the Land Support?’ activity. (Activity from Project Food, Land and People, 1998 pg. 337) Each member is assigned or chooses a role either recorder, settler, natural resource, or builder. Upon completion of the activity students will gather the information from the recorder for the data sheet and complete the summary questions in complete sentences. (Use Rubric #2)

Poster – Select one of the natural resources discussed in class to develop an informational poster describing the natural resource and benefits to or uses by

humans. Posters should be attractive, creative and identify and categorize the natural resource. (Use Rubric #3)

Article Review – In pairs read the assigned article on Gifford Pinchot, John Muir, Forest Service, or National Park Service. Compile a summary of the text identifying five important points or events and organizing in an outline form. In the course of this summary the definition of conservation and preservation must be included. Your person or organization should be identified as either conservation or preservation. You should provide support for your decision. (Use Rubric #4)

Journal – Students are required to sustain a journal of weekly environmental encounters. (i.e. walk in woods, squirrels in yard, sighted a robin and bluebird) All entries must be relevant. Environmental news articles that are collected or pictures of student encounters are encouraged to add insight and creativity. (Use Rubric #5)

8. Checklist or rubric of assessment components for the students – Five different rubrics are attached to this document. One for each activity.

9. Specific Standards Addressed in This Unit

| <i>Name of Standard</i> | <i>Title Individual Standard</i> | <i>Ref. #</i> |
|-------------------------|------------------------------------|---------------|
| PA RWLS | Learning to Read Independently | 1.1.8 |
| PA RWLS | Quality of Writing | 1.5.8 |
| PA RWLS | Speaking and Listening | 1.6.11 |
| PA E & E | Renewable & Nonrenewable Resources | 4.2.10 |
| PA E & E | Renewable & Nonrenewable Resources | 4.2.7 |
| PA E & E | Environmental Health | 4.3.10 |
| PA E & E | Humans and the Environment | 4.8.10 |
| SCANS | Foundation skills | |
| | Reading | |
| | Writing | |
| | Listening | |
| | Speaking | |
| | Thinking Skills | |
| | Creative Thinking | |
| | Decision Making | |
| | Problem Solving | |
| | Seeing Things in Mind's Eye | |
| | Reasoning | |

Rubric #1**Environmental Concerns Interview Rubric**

Name: _____ Date: _____

Class: _____

| Interview Criteria | Possible Points | Earned Points |
|--|------------------------|----------------------|
| Identified issues discussed in class | 10 | |
| Written interview questions from class | 20 | |
| Interview from three community members | 30 | |
| Categorize answers from small groups | 10 | |
| Summary of group findings | 30 | |
| Total Possible Points | 100 | |

Grade Scale:

100 – 98 A+

97 – 93 A

92 – 90 A-

89 – 88 B+

87 – 83 B

82 – 80 B-

79 – 78 C+

77 – 73 C

72 – 70 C-

69 – 68 D+

67 – 63 D

62 – 60 D-

59 – 50 E

< 50 F

Teacher Comments:

Rubric #2

Group Activity

“What Will the Land Support” (Carrying Capacity)

Name: _____ Date: _____

Class: _____

- 5** Read and follow game rules
Fulfilled team role
Summary Questions answered in complete sentences and at least 8 answered correctly.
Data sheet completed
- 4** Read and follow game rules
Fulfilled team role
Summary questions answered in complete sentences and at least 6 answered correctly
Data sheet completed
- 3** Read and follow game rules
Fulfilled team role
Summary questions in complete sentences and at least 5 answered correctly.
Data sheet completed
- 2** Read and follow game rules
Did not fulfill team role
Summary questions not in complete sentences and at least 4 answered correctly
Data sheet completed
- 1** Did not read and follow game rules
Did not fulfill team role
Summary questions not in complete sentences and less than 4 answered correctly
Did not complete data sheet

Grade Scale:

A = 5

B = 4

C = 3

D = 2

F = 1

Teacher Comments:

Rubric #3

Poster of Natural Resources Rubrics

Name: _____ Date: _____

Class: _____

| POSTER CRITERIA | POSSIBLE POINTS | EARNED POINTS |
|---|------------------------|----------------------|
| Attractiveness, neatness and organization | 20 | |
| Natural Resource identified and categorized | 20 | |
| Human benefit/use stated | 20 | |
| Quality of Poster | 20 | |
| Imagination and creativity of work | 20 | |
| TOTAL POINTS | 100 | |

Grade Scale:

100 – 98 A+

97 – 93 A

92 – 90 A-

89 – 88 B+

87 – 83 B

82 – 80 B-

79 – 78 C+

77 – 73 C

72 – 70 C-

69 – 68 D+

67 – 63 D

62 – 60 D-

59 – 50 E

< 50 F

Teacher Comments:

Rubric #4

Article Review Rubric

Name: _____ Date: _____

Class: _____

| THE STUDENT HAS... | EXCELLENT 4 | GOOD 3 | NEEDS IMPROVEMENT 2 | UNACCEPTABLE 1 |
|---|----------------|-----------|---------------------------|-------------------|
| Described five important points/events of the article | | | | |
| Summarize in proper outline form | | | | |
| Identified the person/article as a conservationist or preservationist? | | | | |
| Provided supporting statements for id of conservationist or preservationist | | | | |
| Participated in group discussion | | | | |

Graded according to the following scale:

18 – 20 = Excellent

11 – 14 = Needs Improvement

14 – 16 = Good

10 – 0 = Unacceptable

Teacher Comments:

Rubric #5**Journal**

Name: _____ Date: _____

Class: _____

- 5** Journal up-to-date (every week has an entry)
Entries relevant and realistic
Journal neat and organized
Pictures/news articles/sketches/maps (or other “extras”) included
- 4** Journal up-to-date (every week has an entry)
Entries relevant and realistic
Journal neat and organized
No pictures/news articles/sketches/maps (or other “extras”) included
- 3** Journal up-to-date (every week has an entry)
Entries relevant and realistic
Journal not neat and organized
No pictures/new articles/sketches/map (or other “extras”) included
- 2** Journal up-to-date (every week has an entry)
Entries not relevant and realistic
Journal not neat and organized
No pictures/new articles/sketches/map (or other “extras”) included
- 1** Journal not up-to-date (every week has an entry)
Entries not relevant and realistic
Journal not neat and organized
No pictures/new articles/sketches/map (or other “extras”) included

Grade Scale:

A = 5

B = 4

C = 3

D = 2

F = 1

Teacher Comments: