Everett SD Framework: AP Environmental Science

CIP Code: 030103	**Total Framework Hours:** 180 Hours
Course: Environmental Studies	**Type:** Exploratory
Career Cluster: Agriculture, Food and Natural Resources	**Date Last Modified:** Monday, April 04, 2011

Resources and Standard used in Framework Development:

Standards used for this framework are taken from the OSPI Model Framework for this course as developed through the Pierce County Skills Center

Unit 1 INTRODUCTION TO AP ENVIRONMENTAL SCIENCE — Hours: 5

Performance Assessment(s)

Formative assesment about environmental issues

Industry Standards and Competencies

Standard 1: Introduction to AP Environmental Science

- Science is a process.
- Energy conversions underlie all ecological processes.
- The Earth itself is one interconnected system.
- Humans alter natural systems.
- Environmental problems have a cultural and social context.
- Human survival depends on developing practices that will achieve sustainable systems.
- Define the term environment
- Describe natural resources and explain their importance to human life
- Characterize the interdisciplinary nature of environmental science

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Health and Fitness

Mathematics

Reading

Science

9-11 ES2C: Earth is a system that contains a fixed amount of each stable chemical element existing in different chemical forms. Each element on Earth moves among reservoirs in the solid Earth, oceans, atmosphere, and organisms as part of biogeochemical cycles driven by energy from Earth's interior and from the Sun.

Inquiry (Conducting Analysis and Thinking Logically)

9-12 INQA: Scientists generate and evaluate questions to investigate the natural world.

9-12 INQF: Science is a human endeavor that involves logical reasoning and creativity and entails the testing, revision, and occasional discarding of theories as new evidence comes to light

Application (Science, Technology, and Society)

9-12 APPA: Science affects society and cultures by influencing the way many people think about themselves, others, and the environment. Society also affects science by its prevailing views about what is important to study and by deciding what research will be funded.

9-12 APPC: Choosing the best solution involves comparing alternatives with respect to criteria and constraints, then building and testing a model or other representation of the final design.

9-12 APPE: Perfect solutions do not exist. All technological solutions involve trade-offs in which decisions to include more of one quality means less of another. All solutions involve consequences, some intended, others not.

9-12 APPF: It is important for all citizens to apply science and technology to critical issues that influence society.

Life Science – Ecosystems (Maintenance and Stability of Populations)

9-11 LS2D: Scientists represent ecosystems in the natural world using mathematical models.

9-11 LS2F: The concept of sustainable development supports adoption of policies that enable people to obtain the resources they need today without limiting the ability of future generations to meet their own needs. Sustainable processes include substituting renewable for nonrenewable resources, recycling, and using fewer resources.

Social Studies

Civics 1.3: Understands the purposes and organization of international relationships and United States foreign policy.

1.3.1 (11) Analyzes and evaluates the causes and effects of U.S. foreign policy on people in the United States and the world in the past or present.

1.3.1 (12) Evaluates the impact of international agreements on contemporary world issues.

Writing

Other Skills

Leadership Skills

Leadership 2.0 Group Skills

2.1 The student will communicate, participate, and advocate effectively in pairs, small groups, teams, and large groups in order to reach common goals.

Leadership 3.0 Community and Career Skills

3.1 The student will analyze the roles and responsibilities of citizenship.

3.2 The student will demonstrate social responsibility in family, community, and business and industry.

3.7 The student will participate in the development of a program of work or strategic plan and will work to implement the organization's goals.

Employability Skills

SCANS 3.0 The student acquires and uses information

3.1: Acquires and evaluates information

SCANS 4.0 The student understands complex systems and inter-relationships

4.1: Understands Systems - Knows how social, organizational, and technological systems work and operates effectively with them.

Analytical, Logical, and Creative Thinking Skills

☐ Observe	☑ Cause/Effect	☑ Finding Evidence	☐ Reasoning	☐ Originality
☐ Patterns	☑ Fact/Opinion	☐ Evaluation	☑ Problem Solving	☐ Risking
☐ Sequence	☐ Main Idea	☐ Detect Bias	☐ Goal Setting	☐ Inquisitiveness
☐ Classify	☐ Summary	☐ Inference	☐ Fluency	☐ Attending
☑ Compare/Constrast	☐ Point of View	☐ Conclusion	☐ Elaboration	☐ Persistence
☑ Predict	☐ Analysis	☐ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

Unit 2 EARTH SYSTEMS AND RESOURCES	Hours: 20

Performance Assessment(s)

Formative and Summative Assesments based on AP standards
Lab assesments on Soil and Water
Begin long range water qulaity testing of local watershed.

Industry Standards and Competencies

Standard 2: Earth Systems and Resources

Earth Science Concepts

- Outline the major geologic events that shaped our Earth.
- Outline our knowledge regarding early life and give supporting evidence for each major concept.
- Explain how plate tectonics and the rock cycle shape the landscape around us and the earth beneath our feet

Atmosphere

- Describe the composition, structure and function of Earth's atmosphere
- Describe Earth's climate system and explain the many factors influencing global climate

Global Water Resources and Use

- Explain the importance of water and the hydrologic cycles to ecosystems, human health and economic pursuits
- Define various terms used in water ecology
- Delineate the distribution of fresh water on Earth
- Identify physical, geographical, chemical and biological aspects of the marine environment

Soil and Soil Dynamics

- Explain the importance of soils to agriculture, and describe the impacts of agriculture on soils
- Delineate the fundamentals of soil science, including soil formation and the properties of soil
- State the causes and predict the consequences of soil erosion and soil degradation
- Explain the history and the principles of soil conservation

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Communication 1.2: Understands, analyzes, synthesizes, or evaluates information from a variety of sources.

1.2.1 Evaluates effectiveness of and creates a personal response to visual and auditory information.

1.2.2 Evaluates the effect of bias and persuasive techniques in mass media.

Health and Fitness

Mathematics

Reading

Science

Earth and Space Science – Earth Systems, Structures, and Processes

9-11 ES2A: Global climate differences result from the uneven heating of Earth's surface by the Sun. Seasonal climate variations are due to the tilt of Earth's axis with respect to the plane of Earth's nearly circular orbit around the Sun.

9-11 ES2B: Climate is determined by energy transfer from the sun at and near Earth's surface. This energy transfer is influenced by dynamic processes such as cloud cover and Earth's rotation, as well as static conditions such as proximity to mountain ranges and the ocean. Human activities, such as burning of fossil fuels, also affect the global climate.

9-11 ES2C: Earth is a system that contains a fixed amount of each stable chemical element existing in different chemical forms. Each element on Earth moves among reservoirs in the solid Earth, oceans, atmosphere, and organisms as part of biogeochemical cycles driven by energy from Earth's interior and from the Sun.

9-11 ES2D: The earth does not have infinite resources; increasing human consumption places severe stress on the natural processes that renew some resources and it depletes those resources that cannot be renewed.

Earth and Space Science – Earth History (Evolution of the Earth)

9-11 ES3A: Interactions among the solid Earth, the oceans, the atmosphere, and organisms have resulted in the ongoing evolution of the Earth system. We can observe changes such as earthquakes and volcanic eruptions on a human time scale, but many processes such as mountain building and plate movements take place over hundreds of millions of years.

9-11 ES3D: Data gathered from a variety of methods have shown that Earth has gone through a number of periods when Earth was much warmer and much colder than today.

Systems (Predictability and Feedback)

9-12 SYSC: In complex systems, entirely new and unpredictable properties may emerge. Consequently, modeling a complex system in sufficient detail to make reliable predictions may not be possible.

9-12 SYSD: Systems can be changing or in equilibrium.

Social Studies

Econ 2.1: Understands that people have to make choices between wants and needs and evaluate the outcomes of those choices.

2.1.1 (9-10) Analyzes how the costs and benefits of economic choices have shaped events in the world in the past or present.

Econ 2.2: Understands how economic systems function.

2.2.1 (11) Understands that nations have competing philosophies about how best to produce, distribute, and consume goods, services, and resources.

Econ 2.4: Understands the economic issues and problems that all societies face.

2.4.1 (9-10) Analyzes and evaluates how people across the world have addressed issues involved with the distribution of resources and sustainability in the past or present.

2.4.1 (11) Analyzes and evaluates how people in the United States have addressed issues involved with the distribution of resources and sustainability in the past or present.

2.4.1 (12) Analyzes and evaluates how individuals affect and are affected by the distribution of resources and sustainability.

Writing

Other Skills

Leadership Skills

Leadership 1.0 Individual Skills

1.4 The student will be involved in activities that require applying theory, problem-solving, and using critical and creative thinking skills while understanding outcomes of related decisions.

Leadership 2.0 Group Skills

2.1 The student will communicate, participate, and advocate effectively in pairs, small groups, teams, and large groups in order to reach common goals.

2.3 The student will analyze the complex responsibilities of the leader and follower and demonstrate the ability to both lead and follow.

Leadership 3.0 Community and Career Skills

3.1 The student will analyze the roles and responsibilities of citizenship.

3.2 The student will demonstrate social responsibility in family, community, and business and industry.

3.3 The student will understand their role, participate in and evaluate community service and service learning activities.

3.4 The student will understand the organizational skills necessary to be a successful leader and citizen and practices those skills in real-life.

3.5 The student will understand and utilize organizational systems to advocate for issues on the local, state, and international level.

3.6 The student will understand the importance of and utilize the components and structure of community based organizations.
3.7 The student will participate in the development of a program of work or strategic plan and will work to implement the organization's goals.

Employability Skills

SCANS 1.0 The student identifies, organizes, plans and allocates resources
SCANS 2.0 The student demonstrates interpersonal skills in working well with others.
2.1: Participates as a member of a team
2.4: Exercises Leadership
SCANS 3.0 The student acquires and uses information
3.1: Acquires and evaluates information
3.2: Organizes and maintains information
3.3: Interprets and communicates information
3.4: Uses computers to process information
SCANS 5.0 The student works with a variety of technologies
5.1: Selects Technology - Chooses procedures, tools or equipment including computers and related technologies.

Analytical, Logical, and Creative Thinking Skills

☐ Observe	☑ Cause/Effect	☑ Finding Evidence	☑ Reasoning	☐ Originality
☑ Patterns	☐ Fact/Opinion	☑ Evaluation	☑ Problem Solving	☐ Risking
☑ Sequence	☐ Main Idea	☐ Detect Bias	☐ Goal Setting	☐ Inquisitiveness
☐ Classify	☐ Summary	☐ Inference	☐ Fluency	☐ Attending
☐ Compare/Constrast	☐ Point of View	☐ Conclusion	☐ Elaboration	☐ Persistence
☑ Predict	☐ Analysis	☐ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

Water quality testing
Agriculture
Meteorology
Geology

Unit 3 THE LIVING WORLD	Hours: 20

Performance Assessment(s)

Case studies on specific organisms affected by climate change.
Worm Composition Lab
Formative / Summative Assesments based on AP standards
Predator / Prey activity

Industry Standards and Competencies

Standard 3: The Living World

Ecosystem Structure

- Distinguish characteristics of a keystone species
- Describe and illustrate the terrestrial and aquatic biomes of the world
- List the levels of ecological organization
- Compare and contrast the major types of species interactions
- Define ecosystems and evaluate how living and nonliving entities interact in ecosystem-level ecology
- Define carrying capacity.
- Discuss why edges (ectones) are traps as it relates to predation.

Energy Flow

- Differentiate among the types of energy and recite the basics of energy flow
- Distinguish photosynthesis, respiration and chemosynthesis and summarize their importance to living things
- Characterize feeding relationships and energy flow, using them to construct trophic levels and food webs
- Define and give an example of the relationship: primary consumer, secondary consumer, food chain

Ecosystem Diversity

- Explain the process of natural selection and cite evidence for this process
- Describe the ways in which evolution results in biodiversity

Natural Ecosystem Change

- Characterize the process of succession and the debate over the nature of communities
- Perceive and predict the potential impacts of invasive species in communities

Natural Biogeochemical Cycles

- Explain the fundamentals of environmental chemistry and apply them to real world situations
- Describe the molecular building blocks of living organisms
- Compare and contrast how carbon, phosphorus, nitrogen and water cycle through the environment

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Health and Fitness

Mathematics

Reading

Reading 1.2 Use vocabulary (word meaning) strategies to comprehend text.

Reading 2.1 Demonstrate evidence of reading comprehension.

Reading 2.3 Expand comprehension by analyzing, interpreting, and synthesizing information and ideas in literary and informational text.

Reading 2.4 Think critically and analyze author's use of language, style, purpose, and perspective in literary and informational text.

Science

Life Science – Ecosystems (Maintenance and Stability of Populations)

9-11 LS2A: Matter cycles and energy flows through living and nonliving components in ecosystems. The transfer of matter and energy is important for maintaining the health and sustainability of an ecosystem.

9-11 LS2B: Living organisms have the capacity to produce very large populations. Population density is the number of individuals of a particular population living in a given amount of space.

9-11 LS2C: Population growth is limited by the availability of matter and energy found in resources, the size of the environment, and the presence of competing and/or predatory organisms.

9-11 LS2D: Scientists represent ecosystems in the natural world using mathematical models.

9-11 LS2E: Interrelationships of organisms may generate ecosystems that are stable for hundreds or thousands of years. Biodiversity refers to the different kinds of organisms in specific ecosystems or on the planet as a whole.

9-11 LS2F: The concept of sustainable development supports adoption of policies that enable people to obtain the resources they need today without limiting the ability of future generations to meet their own needs. Sustainable processes include substituting renewable for nonrenewable resources, recycling, and using fewer resources.

Life Science – Biological Evoluation (Mechanisms of Evolution)

9-11 LS3A: Biological evolution is due to: (1) genetic variability of offspring due to mutations and genetic recombination, (2) the potential for a species to increase its numbers, (3) a finite supply of resources, and (4) natural selection by the environment for those offspring better able to survive and produce offspring.

9-11 LS3B: Random changes in the genetic makeup of cells and organisms (mutations) can cause changes in their physical characteristics or behaviors. If the genetic mutations occur in eggs or sperm cells, the changes will be inherited by offspring. While many of these changes will be harmful, a small minority may allow the offspring to better survive and reproduce.

9-11 LS3C: The great diversity of organisms is the result of more than 3.5 billion years of evolution that has filled available ecosystem niches on Earth with life forms.

9-11 LS3D: The fossil record and anatomical and molecular similarities observed among diverse species of living organisms provide evidence of biological evolution.

9-11 LS3E: Biological classifications are based on how organisms are related, reflecting their evolutionary history. Scientists infer relationships from physiological traits, genetic information, and the ability of two organisms to produce fertile offspring.

Application (Science, Technology, and Society)

9-12 APPB: The technological design process begins by defining a problem in terms of criteria and constraints, conducting research, and generating several different solutions.

9-12 APPE: Perfect solutions do not exist. All technological solutions involve trade-offs in which decisions to include more of one quality means less of another. All solutions involve consequences, some intended, others not.

9-11 ES2B: Climate is determined by energy transfer from the sun at and near Earth's surface. This energy transfer is influenced by dynamic processes such as cloud cover and Earth's rotation, as well as static conditions such as proximity to mountain ranges and the ocean. Human activities, such as burning of fossil fuels, also affect the global climate.

9-11 ES2C: Earth is a system that contains a fixed amount of each stable chemical element existing in different chemical forms. Each element on Earth moves among reservoirs in the solid Earth, oceans, atmosphere, and organisms as part of biogeochemical cycles driven by energy from Earth's interior and from the Sun.

9-11 ES2D: The earth does not have infinite resources; increasing human consumption places severe stress on the natural processes that renew some resources and it depletes those resources that cannot be renewed.

Social Studies

Writing

Writing 1.1: Pre-writes to generate ideas and plan writing.

Writing 1.2: Produces draft(s).

Writing 1.3: Revises to improve text.

Writing 1.6: Adjusts writing process as necessary.

Writing 2.1: Adapts writing for a variety of audiences.

Other Skills

Leadership Skills

Leadership 1.0 Individual Skills

1.4 The student will be involved in activities that require applying theory, problem-solving, and using critical and creative thinking skills while understanding outcomes of related decisions.

Leadership 2.0 Group Skills

2.1 The student will communicate, participate, and advocate effectively in pairs, small groups, teams, and large groups in order to reach common goals.

Leadership 3.0 Community and Career Skills

3.6 The student will understand the importance of and utilize the components and structure of community based organizations.

Employability Skills

SCANS 2.0 The student demonstrates interpersonal skills in working well with others.

2.1: Participates as a member of a team

2.2: Teachers others new skills

SCANS 4.0 The student understands complex systems and inter-relationships

SCANS 5.0 The student works with a variety of technologies

5.2: Applies Technology to Task - Understands overall intent and proper procedures for setup and operation of equipment.

5.3: Maintains and Troubleshoots Equipment - Prevents, identifies, or solves problems with equipment, including computers and other technologies.

Analytical, Logical, and Creative Thinking Skills

☑ Observe	☑ Cause/Effect	☐ Finding Evidence	☐ Reasoning	☐ Originality
☑ Patterns	☐ Fact/Opinion	☐ Evaluation	☐ Problem Solving	☐ Risking
☐ Sequence	☐ Main Idea	☐ Detect Bias	☐ Goal Setting	☐ Inquisitiveness
☐ Classify	☐ Summary	☐ Inference	☐ Fluency	☐ Attending
☑ Compare/Constrast	☐ Point of View	☐ Conclusion	☐ Elaboration	☐ Persistence
☑ Predict	☑ Analysis	☐ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

Composting
Department of fish and wildlife

Unit 4 POPULATIONS	Hours: 20

Performance Assessment(s)

Analysis of Sustainability case Study
calculate the population density of specific organisms
Analysis of human population growth and it's impact.
Summative Assesment based on AP Standards
population desnisty and biomass lab
Natural Selection Lab
Wildlife camera monitoring

Industry Standards and Competencies

Standard 4: Population

Population Change

- Explain how large populations can be maintained.
- Population density is controlled by limiting factors.
- Outline the characteristics of populations that help predict population growth (use mathematical models of populations)
- Sustainability of a community is dependent on resource use
- Over-consumption—materials use
- K and R selected species
- Discuss reasons for species extinction and mass extinction events
- population growth leads to variety through natural selection

Changes in Human Population

- Assess the scope of human population growth
- Evaluate how human population, affluence and technology affect the environment

Impacts of Human population growth

- Characterize the dimensions of epidemic, such as malaria, HIV/AIDS, current disease migration
- Hunger
- Apply science and technology to issues of population growth

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Health and Fitness

Mathematics

Algebra 1.1 Core Content: Solving Problems

1.1.A Select and justify functions and equations to model and solve problems.
1.1.B Solve problems that can be represented by linear functions, equations, and inequalities.
1.1.C Solve problems that can be represented by a system of two linear equations or inequalities.
1.1.D Solve problems that can be represented by quadratic functions and equations.
1.1.E Solve problems that can be represented by exponential functions and equations.

Reading

Reading 2.3 Expand comprehension by analyzing, interpreting, and synthesizing information and ideas in literary and informational text.

Reading 2.4 Think critically and analyze author's use of language, style, purpose, and perspective in literary and informational text.

Reading 3.1 Read to learn new information.

Science

Life Science – Ecosystems (Maintenance and Stability of Populations)

9-11 LS2B: Living organisms have the capacity to produce very large populations. Population density is the number of individuals of a particular population living in a given amount of space.

9-11 LS2C: Population growth is limited by the availability of matter and energy found in resources, the size of the environment, and the presence of competing and/or predatory organisms.

Systems (Predictability and Feedback)

9-12 SYSB: Systems thinking can be especially useful in analyzing complex situations. To be useful, a system needs to be specified as clearly as possible.

9-12 SYSC: In complex systems, entirely new and unpredictable properties may emerge. Consequently, modeling a complex system in sufficient detail to make reliable predictions may not be possible.

Inquiry (Conducting Analysis and Thinking Logically)

9-12 INQB: Scientific progress requires the use of various methods appropriate for answering different kinds of research questions, a thoughtful plan for gathering data needed to answer the question, and care in collecting, analyzing, and displaying the data.

9-12 INQF: Science is a human endeavor that involves logical reasoning and creativity and entails the testing, revision, and occasional discarding of theories as new evidence comes to light

9-12 INQG: Public communication among scientists is an essential aspect of research. Scientists evaluate the validity of one another's investigations, check the reliability of results, and explain inconsistencies in findings

Application (Science, Technology, and Society)

9-12 APPC: Choosing the best solution involves comparing alternatives with respect to criteria and constraints, then building and testing a model or other representation of the final design.

9-12 APPD: The ability to solve problems is greatly enhanced by use of mathematics and information technologies.

9-12 APPE: Perfect solutions do not exist. All technological solutions involve trade-offs in which decisions to include more of one quality means less of another. All solutions involve consequences, some intended, others not.

9-12 APPF: It is important for all citizens to apply science and technology to critical issues that influence society.

Social Studies

Writing

Other Skills

Leadership Skills

Leadership 1.0 Individual Skills

1.3 The student will demonstrate oral, interpersonal, written, and electronic communication and presentation skills and understands how to apply those skills.

1.4 The student will be involved in activities that require applying theory, problem-solving, and using critical and creative thinking skills while understanding outcomes of related decisions.

Leadership 2.0 Group Skills

2.1 The student will communicate, participate, and advocate effectively in pairs, small groups, teams, and large groups in order to reach common goals.

2.4 The student will demonstrate skills that assist in understanding and accepting responsibility to family, community, and business and industry.

2.6 The student will use knowledge, build interest, guide and influence decisions, organize efforts, and involve members of a group to assure that a pre-planned group activity is completed.

Employability Skills

SCANS 1.0 The student identifies, organizes, plans and allocates resources

1.2: Money - Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives.

1.3: Materials and facilities - Acquires, stores, allocates, and uses materials or space efficiently.

SCANS 5.0 The student works with a variety of technologies

5.1: Selects Technology - Chooses procedures, tools or equipment including computers and related technologies.

5.2: Applies Technology to Task - Understands overall intent and proper procedures for setup and operation of equipment.

5.3: Maintains and Troubleshoots Equipment - Prevents, identifies, or solves problems with equipment, including computers and other technologies.

Analytical, Logical, and Creative Thinking Skills

☑ Observe	☐ Cause/Effect	☐ Finding Evidence	☐ Reasoning	☐ Originality
☐ Patterns	☐ Fact/Opinion	☑ Evaluation	☐ Problem Solving	☐ Risking
☐ Sequence	☐ Main Idea	☐ Detect Bias	☐ Goal Setting	☐ Inquisitiveness
☑ Classify	☐ Summary	☑ Inference	☐ Fluency	☐ Attending
☐ Compare/Constrast	☐ Point of View	☐ Conclusion	☐ Elaboration	☐ Persistence
☑ Predict	☑ Analysis	☐ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

Department of Fish and Wildlife careers

Unit 5 LAND AND WATER USE	Hours: 25

Performance Assessment(s)

Formative and Summative assesments based on AP standards
Evaluation of current public policy
Analysis of the agriculture, timber and fishing industy practices past and present
Presentations making recommendations for future sustainable use.

Industry Standards and Competencies

Standard 5A: Land and Water Use

Land Use for Food Production

- Explain the challenge of feeding a growing human population
- Describe the science behind and evaluate the debate over genetically modified food
- Assess feedlot agriculture for livestock and poultry
- Evaluate sustainable agriculture—corn vs. soybean vs. grass

Land Use for Forestry and Range

- Summarize the ecological roles and economic contributions of forests, and outline the history and scale of forest loss
- Explain the fundamentals of forest management and describe the major methods of harvesting timber
- Analyze the scale and impacts of agricultural land use (rangeland)
- Identify major federal land management agencies and the lands they manage
- List 5 site classes found in forest succession and give one advantage and one disadvantage of each size class for wildlife as it relates to the needs of wildlife (particularly food, shelter and protection)

Non-Agricultural Land and Water Use

- Recognize the types of parks and reserves and evaluate issues involved in their design
- Assess urban and suburban sprawl
- Describe the three characteristics required to identify a wetland.
- Discuss how we use water and alter freshwater systems
- Assess problems of water supply and propose solutions to address depletion of fresh water
- Describe why food, water and cover are important to wildlife.
- Describe and give an example of shelter and protection.

Standard 5B: Land and Water Use (Forestry, Mining, Fishing, Global Economics)

- Compare and contrast the role and purpose of the National Parks Service and the Forest Service
- Explain policy differences between the various land, forest, and natural resource management agencies.
- Describe the Forest Practices Regulations and how they are managed within the government.
- Explain the structure of the government that directs various natural resources related agencies.
- Explain which agency originally controlled the public domain and which group owns over the commercial forest land in the United States.
- Describe the role, philosophy and legacy of various important individuals on American forest.

Mining

- Evaluate a mining proposal for environmental and economic cost vs. benefit analysis.

Fishing

- Weigh approaches in aquaculture Outline historic and current human uses of marine resources
- Review the current state of ocean fisheries and reasons for their decline

Global Economics

- Discuss how protecting the environment can be compatible with promoting economic welfare

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Health and Fitness

Mathematics

Algebra 1.1 Core Content: Solving Problems

1.1.A Select and justify functions and equations to model and solve problems.

1.1.B Solve problems that can be represented by linear functions, equations, and inequalities.

1.1.C Solve problems that can be represented by a system of two linear equations or inequalities.

Reading

Reading 2.3 Expand comprehension by analyzing, interpreting, and synthesizing information and ideas in literary and informational text.

Reading 3.1 Read to learn new information.

Reading 3.2 Read to perform a task.

Science

9-11 ES2D: The earth does not have infinite resources; increasing human consumption places severe stress on the natural processes that renew some resources and it depletes those resources that cannot be renewed.

Application (Science, Technology, and Society)

9-12 APPA: Science affects society and cultures by influencing the way many people think about themselves, others, and the environment. Society also affects science by its prevailing views about what is important to study and by deciding what research will be funded.

9-12 APPB: The technological design process begins by defining a problem in terms of criteria and constraints, conducting research, and generating several different solutions.

9-12 APPC: Choosing the best solution involves comparing alternatives with respect to criteria and constraints, then building and testing a model or other representation of the final design.

9-12 APPD: The ability to solve problems is greatly enhanced by use of mathematics and information technologies.

Earth and Space Science – Earth Systems, Structures, and Processes

9-11 ES2C: Earth is a system that contains a fixed amount of each stable chemical element existing in different chemical forms. Each element on Earth moves among reservoirs in the solid Earth, oceans, atmosphere, and organisms as part of biogeochemical cycles driven by energy from Earth's interior and from the Sun.

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Social Studies

Writing

Other Skills

Leadership Skills

Leadership 1.0 Individual Skills

1.4 The student will be involved in activities that require applying theory, problem-solving, and using critical and creative thinking skills while understanding outcomes of related decisions.

Leadership 2.0 Group Skills

2.1 The student will communicate, participate, and advocate effectively in pairs, small groups, teams, and large groups in order to reach common goals.

2.2 The student will demonstrate knowledge of conflict resolution and challenge management.

Leadership 3.0 Community and Career Skills

3.1 The student will analyze the roles and responsibilities of citizenship.

Employability Skills

SCANS 3.0 The student acquires and uses information

3.1: Acquires and evaluates information

3.2: Organizes and maintains information

3.3: Interprets and communicates information

3.4: Uses computers to process information

SCANS 4.0 The student understands complex systems and inter-relationships

Analytical, Logical, and Creative Thinking Skills

☐ Observe	☑ Cause/Effect	☑ Finding Evidence	☑ Reasoning	☑ Originality
☐ Patterns	☑ Fact/Opinion	☑ Evaluation	☑ Problem Solving	☑ Risking
☐ Sequence	☐ Main Idea	☑ Detect Bias	☐ Goal Setting	☐ Inquisitiveness
☐ Classify	☐ Summary	☑ Inference	☐ Fluency	☐ Attending
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☐ Predict	☐ Analysis	☑ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

Agriculture
Timber Industry
Managing resources
Public Policy
Urban Planning
Department of Fish and Wildlife

Unit 6 ENERGY RESOURCES AND CONSUMPTION	Hours: 20

Performance Assessment(s)

Calculate a personal energy audit.
Interpret a monthly energy bill.
Summative assesment based on AP standards
Analysis of the Alberta Tar Sands
Presentations reagrding future energy production.

Industry Standards and Competencies

Standard 6: Energy Resources and Consumption

Energy Concepts

- Identify the energy sources that we use

Non-Renewable Energy: Coal, Propane, Petroleum, Natural Gas, Nuclear

- Evaluate the nature, origin and potential of non-renewable energy including advantages and disadvantages
- Describe the nature and origin of all non-renewable resources and evaluate their extraction, use and future depletion
- Outline the societal debate over non-renewable energy sources
- Evaluate political, social and economic impacts of fossil fuel use
- Describe nuclear energy and how it is harnessed
- Outline the societal debate over nuclear power

Renewable Energy: Biomass, Solar, Hydro, Geothermal, Wind

- Evaluate the nature, origin and potential of renewable energy sources including advantages and disadvantages.
- Discuss the reasons for seeking energy alternatives to fossil fuels
- Summarize the contributions to world energy supplies of conventional alternatives to fossil fuels
- Describe other energy sources and the ways they could be harnessed (ocean energy, hydrogen fuel cells and future options for energy and transportation.

Energy Conservation

- Specify strategies for conserving energy and enhancing efficiency

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Communication 1.2: Understands, analyzes, synthesizes, or evaluates information from a variety of sources.
Communication 3.1: Uses knowledge of topic/theme, audience, and purpose to plan presentations.
Communication 3.2: Uses media and other resources to support presentations.
Communication 3.3: Uses effective delivery.

Health and Fitness

Mathematics

Reading

Science

Life Science – Ecosystems (Maintenance and Stability of Populations)

9-11 LS2F: The concept of sustainable development supports adoption of policies that enable people to obtain the resources they need today without limiting the ability of future generations to meet their own needs. Sustainable processes include substituting renewable for nonrenewable resources, recycling, and using fewer resources.

Earth and Space Science – Earth Systems, Structures, and Processes

9-11 ES2C: Earth is a system that contains a fixed amount of each stable chemical element existing in different chemical forms. Each element on Earth moves among reservoirs in the solid Earth, oceans, atmosphere, and organisms as part of biogeochemical cycles driven by energy from Earth's interior and from the Sun.

9-11 ES2D: The earth does not have infinite resources; increasing human consumption places severe stress on the natural processes that renew some resources and it depletes those resources that cannot be renewed.

Application (Science, Technology, and Society)

9-12 APPD: The ability to solve problems is greatly enhanced by use of mathematics and information technologies.

9-12 APPE: Perfect solutions do not exist. All technological solutions involve trade-offs in which decisions to include more of one quality means less of another. All solutions involve consequences, some intended, others not.

9-12 APPF: It is important for all citizens to apply science and technology to critical issues that influence society.

9-11 PS1H: Electricity and magnetism are two aspects of a single electromagnetic force. Moving electric charges produce magnetic forces, and moving magnets produce electric forces.

Physical Science – Matter Properties and Change (Chemical Reactions)

9-11 PS2F: All forms of life are composed of large molecules that contain carbon. Carbon atoms bond to one another and other elements by sharing electrons, forming covalent bonds. Stable molecules of carbon have four covalent bonds per carbon atom.

9-11 PS2K: Nuclear reactions convert matter into energy, releasing large amounts of energy compared with chemical reactions. Fission is the splitting of a large nucleus into smaller pieces. Fusion is the joining of nuclei and is the process that generates energy in the Sun and other stars.

Systems (Predictability and Feedback)

9-12 SYSA: Feedback is a process in which the output of a system provides information used to regulate the operation of the system. Positive feedback increases the disturbance to a system. Negative feedback reduces the disturbance to a system.

9-12 SYSB: Systems thinking can be especially useful in analyzing complex situations. To be useful, a system needs to be specified as clearly as possible.

9-12 SYSD: Systems can be changing or in equilibrium.

Social Studies

Writing

Other Skills

Leadership Skills

Leadership 1.0 Individual Skills

1.5 The student will demonstrate self-advocacy skills by achieving planned, individual goals.

1.6 The student will conduct self in a professional manner in practical career applications, organizational forums, and decision-making bodies.

Leadership 2.0 Group Skills

2.1 The student will communicate, participate, and advocate effectively in pairs, small groups, teams, and large groups in order to reach common goals.

Leadership 3.0 Community and Career Skills

3.1 The student will analyze the roles and responsibilities of citizenship.

3.2 The student will demonstrate social responsibility in family, community, and business and industry.

Employability Skills

SCANS 2.0 The student demonstrates interpersonal skills in working well with others.

2.1: Participates as a member of a team

2.4: Exercises Leadership

2.5: Negotiates

SCANS 3.0 The student acquires and uses information

3.3: Interprets and communicates information

3.4: Uses computers to process information

SCANS 4.0 The student understands complex systems and inter-relationships

4.1: Understands Systems - Knows how social, organizational, and technological systems work and operates effectively with them.

SCANS 5.0 The student works with a variety of technologies

5.1: Selects Technology - Chooses procedures, tools or equipment including computers and related technologies.

5.2: Applies Technology to Task - Understands overall intent and proper procedures for setup and operation of equipment.

5.3: Maintains and Troubleshoots Equipment - Prevents, identifies, or solves problems with equipment, including computers and other technologies.

Analytical, Logical, and Creative Thinking Skills

☐ Observe	☐ Cause/Effect	☑ Finding Evidence	☑ Reasoning	☑ Originality
☐ Patterns	☑ Fact/Opinion	☑ Evaluation	☐ Problem Solving	☑ Risking
☐ Sequence	☐ Main Idea	☑ Detect Bias	☐ Goal Setting	☑ Inquisitiveness
☑ Classify	☑ Summary	☐ Inference	☐ Fluency	☐ Attending
☑ Compare/Constrast	☑ Point of View	☐ Conclusion	☑ Elaboration	☐ Persistence
☐ Predict	☐ Analysis	☐ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

Public utilities (PUD, Puget Sound Energy)
HVAC
Power Plants - renewable and non-renewable
geology
Auto Industy

Unit 7 POLLUTION	Hours: 25

Performance Assessment(s)

Testing for air pollution lab
Stream and water quality testing lab
Communicate results and make recommendations based on data
Summative assement based on AP standards

Industry Standards and Competencies

Standard 7: Pollution

Pollution Types

- Describe the types, abundance, distribution and movement of toxicants in the environment
- Summarize and compare the types of waste we generate
- List the major approaches to managing waste
- Describe conventional waste disposal methods: landfills and incineration
- Evaluate approaches for reducing waste: source reduction, reuse, composting and recycling
- Discuss industrial solid waste management and principles of industrial ecology
- Assess problems of water quality and propose solutions to address water pollution
- Explain how wastewater is treated
- Outline the scope of outdoor air pollution and assess potential solutions
- Characterized the scope of indoor air pollution and assess potential solutions

Impacts on the Environment and Human Health

- Identify the major types of environmental health hazards and explain the goals of environmental health
- Discuss the study of hazards and their effects, including case histories, epidemiology, animal testing and dose-response analysis
- Assess risk assessment and risk management and compare philosophical approaches to risk
- Assess issues in managing hazardous waste

Economic Impact

- Describe policy and regulation in the United States and internationally
- Compare the concepts of economic growth, economic health and sustainability
- Explain the fundaments of environmental economics and ecological economics
- Describe environmental policy and assess its societal context
- Identify the institutions important to US environmental policy and recognize major US environmental laws
- List the institutions involved with international environmental policy and describe how nations handle transboundary issues
- Pollution Reduction Measures (carbon sinks, green roof, porous concrete)

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Communication 1.2: Understands, analyzes, synthesizes, or evaluates information from a variety of sources.
Communication 3.1: Uses knowledge of topic/theme, audience, and purpose to plan presentations.
Communication 3.2: Uses media and other resources to support presentations.
Communication 3.3: Uses effective delivery.

Health and Fitness

Mathematics

Algebra 1.1 Core Content: Solving Problems

1.1.A Select and justify functions and equations to model and solve problems.

Reading

Science

Systems (Predictability and Feedback)

9-12 SYSB: Systems thinking can be especially useful in analyzing complex situations. To be useful, a system needs to be specified as clearly as possible.

9-12 SYSC: In complex systems, entirely new and unpredictable properties may emerge. Consequently, modeling a complex system in sufficient detail to make reliable predictions may not be possible.

9-12 SYSD: Systems can be changing or in equilibrium.

Application (Science, Technology, and Society)

9-12 APPA: Science affects society and cultures by influencing the way many people think about themselves, others, and the environment. Society also affects science by its prevailing views about what is important to study and by deciding what research will be funded.

9-12 APPC: Choosing the best solution involves comparing alternatives with respect to criteria and constraints, then building and testing a model or other representation of the final design.

9-12 APPD: The ability to solve problems is greatly enhanced by use of mathematics and information technologies.

9-12 APPE: Perfect solutions do not exist. All technological solutions involve trade-offs in which decisions to include more of one quality means less of another. All solutions involve consequences, some intended, others not.

9-12 APPF: It is important for all citizens to apply science and technology to critical issues that influence society.

Social Studies

Econ 2.1: Understands that people have to make choices between wants and needs and evaluate the outcomes of those choices.

2.1.1 (9-10) Analyzes how the costs and benefits of economic choices have shaped events in the world in the past or present.

Econ 2.4: Understands the economic issues and problems that all societies face.

2.4.1 (9-10) Analyzes and evaluates how people across the world have addressed issues involved with the distribution of resources and sustainability in the past or present.

2.4.1 (11) Analyzes and evaluates how people in the United States have addressed issues involved with the distribution of resources and sustainability in the past or present.

2.4.1 (12) Analyzes and evaluates how individuals affect and are affected by the distribution of resources and sustainability.

Writing

Other Skills

Leadership Skills

Leadership 1.0 Individual Skills

1.4 The student will be involved in activities that require applying theory, problem-solving, and using critical and creative thinking skills while understanding outcomes of related decisions.

Leadership 3.0 Community and Career Skills

3.1 The student will analyze the roles and responsibilities of citizenship.

3.2 The student will demonstrate social responsibility in family, community, and business and industry.

3.5 The student will understand and utilize organizational systems to advocate for issues on the local, state, and international level.

3.6 The student will understand the importance of and utilize the components and structure of community based organizations.

Employability Skills

SCANS 4.0 The student understands complex systems and inter-relationships

4.1: Understands Systems - Knows how social, organizational, and technological systems work and operates effectively with them.

4.3: Improves or Designs Systems - Suggests modifications to existing systems and develops new or alternative systems to improve performance.

SCANS 5.0 The student works with a variety of technologies

5.1: Selects Technology - Chooses procedures, tools or equipment including computers and related technologies.

5.2: Applies Technology to Task - Understands overall intent and proper procedures for setup and operation of equipment.

Analytical, Logical, and Creative Thinking Skills

☐ Observe	☑ Cause/Effect	☐ Finding Evidence	☑ Reasoning	☐ Originality
☐ Patterns	☐ Fact/Opinion	☐ Evaluation	☑ Problem Solving	☐ Risking
☐ Sequence	☐ Main Idea	☑ Detect Bias	☐ Goal Setting	☐ Inquisitiveness
☑ Classify	☑ Summary	☐ Inference	☐ Fluency	☐ Attending
☑ Compare/Constrast	☐ Point of View	☐ Conclusion	☐ Elaboration	☐ Persistence
☐ Predict	☐ Analysis	☐ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

waste water treatment (sewer and septic)
solid waste disposal
air quality testing
water quality testing

Unit 8 GLOBAL CHANGE	Hours: 20

Performance Assessment(s)

Calculate personal carbon footprints
Formative and Summative assessments based on AP standards
Design a program that lessens human impact, yet maintains qulaity of life.

Industry Standards and Competencies

Standard 8: Global Change

Stratospheric Ozone

- Explain stratospheric ozone depletion and identity steps taken to address it
- Characterize human influences on the atmosphere and global climate

Global Warming

- Diagnose and illustrate some of the pressures on the global environment

Loss of Biodiversity

- Characterize the scope and benefits of biodiversity on Earth
- Contrast background extinction rates with periods of mass extinction
- Evaluate the primary causes of biodiversity loss and impact of invasive species
- Assess conservation biology practices and analyze traditional
- and innovative biodiversity conservation efforts
- Explain loss of Biodiversity in Water Systems including
- Acidification, Nitrification, and supply demands
- Describe the importance of the Endangered Species Act.

Sustainability

- Explain the concept of sustainable development
- Describe and assess key approaches to designing sustainable solutions
- Evaluate the concepts of sustainability and sustainable development
- Define and give examples of a Habitat Conservation Plan.

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Communication 1.1: Uses listening and observation skills and strategies to focus attention and interpret information.
Communication 1.2: Understands, analyzes, synthesizes, or evaluates information from a variety of sources.
Communication 2.1: Uses language to interact effectively and responsibly in a multicultural context.
Communication 2.2: Uses interpersonal skills and strategies in a multicultural context to work collaboratively, solve problems, and perform tasks.

Health and Fitness

Mathematics

Reading

Science

Earth and Space Science – Earth Systems, Structures, and Processes

9-11 ES2A: Global climate differences result from the uneven heating of Earth's surface by the Sun. Seasonal climate variations are due to the tilt of Earth's axis with respect to the plane of Earth's nearly circular orbit around the Sun.

9-11 ES2B: Climate is determined by energy transfer from the sun at and near Earth's surface. This energy transfer is influenced by dynamic processes such as cloud cover and Earth's rotation, as well as static conditions such as proximity to mountain ranges and the ocean. Human activities, such as burning of fossil fuels, also affect the global climate.

9-11 ES2C: Earth is a system that contains a fixed amount of each stable chemical element existing in different chemical forms. Each element on Earth moves among reservoirs in the solid Earth, oceans, atmosphere, and organisms as part of biogeochemical cycles driven by energy from Earth's interior and from the Sun.

9-11 ES2D: The earth does not have infinite resources; increasing human consumption places severe stress on the natural processes that renew some resources and it depletes those resources that cannot be renewed.

9-11 ES3D: Data gathered from a variety of methods have shown that Earth has gone through a number of periods when Earth was much warmer and much colder than today.

9-12 SYSA: Feedback is a process in which the output of a system provides information used to regulate the operation of the system. Positive feedback increases the disturbance to a system. Negative feedback reduces the disturbance to a system.

9-12 SYSB: Systems thinking can be especially useful in analyzing complex situations. To be useful, a system needs to be specified as clearly as possible.

9-12 SYSC: In complex systems, entirely new and unpredictable properties may emerge. Consequently, modeling a complex system in sufficient detail to make reliable predictions may not be possible.

9-12 SYSD: Systems can be changing or in equilibrium.

Application (Science, Technology, and Society)

9-12 APPE: Perfect solutions do not exist. All technological solutions involve trade-offs in which decisions to include more of one quality means less of another. All solutions involve consequences, some intended, others not.

9-12 APPF: It is important for all citizens to apply science and technology to critical issues that influence society.

Social Studies

History 4.2: Understands and analyzes causal factors that have shaped major events in history.

4.2.3 (12) Evaluates the ethics of current and future uses of technology based on how technology has shaped history.

History 4.4: Uses history to understand the present and plan for the future.

4.4.1 (9-10) Analyzes how an understanding of world history can help us prevent problems today.

4.4.1 (12) Evaluates positions on a current issue based on an analysis of history.

Writing

Other Skills

Leadership Skills

Leadership 1.0 Individual Skills

1.3 The student will demonstrate oral, interpersonal, written, and electronic communication and presentation skills and understands how to apply those skills.

Leadership 3.0 Community and Career Skills

3.1 The student will analyze the roles and responsibilities of citizenship.

3.2 The student will demonstrate social responsibility in family, community, and business and industry.

3.3 The student will understand their role, participate in and evaluate community service and service learning activities.
3.6 The student will understand the importance of and utilize the components and structure of community based organizations.

Employability Skills

SCANS 1.0 The student identifies, organizes, plans and allocates resources
1.4: Human resources - Assesses skills and distributes work accordingly, evaluates performance and provides feedback.
SCANS 2.0 The student demonstrates interpersonal skills in working well with others.
2.1: Participates as a member of a team
2.4: Exercises Leadership
SCANS 3.0 The student acquires and uses information
3.1: Acquires and evaluates information
3.3: Interprets and communicates information
SCANS 4.0 The student understands complex systems and inter-relationships
4.3: Improves or Designs Systems - Suggests modifications to existing systems and develops new or alternative systems to improve performance.

Analytical, Logical, and Creative Thinking Skills

☐ Observe	☐ Cause/Effect	☑ Finding Evidence	☐ Reasoning	☑ Originality
☑ Patterns	☑ Fact/Opinion	☐ Evaluation	☑ Problem Solving	☑ Risking
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☐ Classify	☑ Summary	☐ Inference	☐ Fluency	☐ Attending
☐ Compare/Constrast	☑ Point of View	☑ Conclusion	☑ Elaboration	☑ Persistence
☐ Predict	☑ Analysis	☑ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

Public Policy
Land Development
Transportation

Unit 9 CAREERS AND FIELD INVESTIGATIONS IN ENVIRONMENTAL SCIENCE | Hours: 25

Performance Assessment(s)

Unit 9 is done after the completion of the AP exam.
Students will be required to design and implement their own research project.

Through internships and field experience, students will prepare for the various career options in Environmental Science and will prepare for post-high school opportunities.

Service Learnin opportunties
Class presentations on Environmental careers
Job Shadow

Industry Standards and Competencies

Standard 9: Careers and Field Investigations in Environmental Science
- Through internships and field experience, students will prepare for the various career options in Environmental Science and will prepare for post-high school opportunities.

EALRs AND GLEs Taught and Assessed in the Standards

Arts

Communications

Communication 1.1: Uses listening and observation skills and strategies to focus attention and interpret information.
Communication 1.2: Understands, analyzes, synthesizes, or evaluates information from a variety of sources.
Communication 2.1: Uses language to interact effectively and responsibly in a multicultural context.
Communication 2.2: Uses interpersonal skills and strategies in a multicultural context to work collaboratively, solve problems, and perform tasks.
Communication 2.3: Uses skills and strategies to communicate interculturally.
Communication 3.1: Uses knowledge of topic/theme, audience, and purpose to plan presentations.
Communication 3.2: Uses media and other resources to support presentations.
Communication 3.3: Uses effective delivery.
Communication 4.1: Assesses effectiveness of one's own and others' communication.
Communication 4.2: Sets goals for improvement.

Health and Fitness

Mathematics

Reading

Reading 1.3 Build vocabulary through wide reading.
Reading 2.1 Demonstrate evidence of reading comprehension.
Reading 2.3 Expand comprehension by analyzing, interpreting, and synthesizing information and ideas in literary and informational text.
Reading 2.4 Think critically and analyze author's use of language, style, purpose, and perspective in literary and informational text.
Reading 3.1 Read to learn new information.
Reading 3.3 Read for career applications.

Science

Application (Science, Technology, and Society)

9-12 APPA: Science affects society and cultures by influencing the way many people think about themselves, others, and the environment. Society also affects science by its prevailing views about what is important to study and by deciding what research will be funded.

9-12 APPF: It is important for all citizens to apply science and technology to critical issues that influence society.

Social Studies

Writing

Writing 1.5: Publishes text to share with audience.

1.5.1 Publishes in formats that are appropriate for specific audiences and purposes.

Writing 2.4: Writes for career applications.

2.4.1 Produces documents used in a career setting.

Other Skills

Leadership Skills

Leadership 1.0 Individual Skills

1.3 The student will demonstrate oral, interpersonal, written, and electronic communication and presentation skills and understands how to apply those skills.

1.5 The student will demonstrate self-advocacy skills by achieving planned, individual goals.

1.6 The student will conduct self in a professional manner in practical career applications, organizational forums, and decision-making bodies.

Leadership 2.0 Group Skills

2.3 The student will analyze the complex responsibilities of the leader and follower and demonstrate the ability to both lead and follow.

Employability Skills

SCANS 2.0 The student demonstrates interpersonal skills in working well with others.

2.3: Serves clients/customers

2.5: Negotiates

2.6: Works with diversity

SCANS 3.0 The student acquires and uses information

3.1: Acquires and evaluates information

3.4: Uses computers to process information

SCANS 4.0 The student understands complex systems and inter-relationships

4.1: Understands Systems - Knows how social, organizational, and technological systems work and operates effectively with them.

Analytical, Logical, and Creative Thinking Skills

☑ Observe	☐ Cause/Effect	☐ Finding Evidence	☐ Reasoning	☐ Originality
☐ Patterns	☐ Fact/Opinion	☑ Evaluation	☐ Problem Solving	☐ Risking
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☑ Compare/Constrast	☐ Point of View	☐ Conclusion	☐ Elaboration	☐ Persistence
☐ Predict	☐ Analysis	☑ Metacognition	☐ Flexibility	☐ Precision

Relevance to Work

Career Exploration in the area of Environmental issues