

Guidelines for Learning (K-12)

Strand 1-- Questioning and Analysis Skills

- A) Questioning--Learners are able to develop, focus, and explain questions that help them learn about the environment and do environmental investigations.
- B) Designing investigations--Learners are able to design environmental investigations to answer particular questions--often their own questions.
- C) Collecting information--Learners are able to locate and collect reliable information about the environment or environmental topics using a variety of methods and sources.
- D) Evaluating accuracy and reliability--Learners are able to judge the weaknesses and strengths of the information they are using.
- E) Organizing information--Learners are able to classify and order data, and to organize and display information in ways that help analysis and interpretation.
- F) Working with models and simulations--Learners understand many of the uses and limitations of models.
- G) Developing explanations--Learners are able to synthesize their observations and findings into coherent explanations.

Strand 2-- Knowledge of Environmental Processes and Systems

Strand 2.1--The Earth as a Physical System

- A) Processes that shape the Earth--Learners have a basic understanding of most of the physical processes that shape the Earth. They are able to explore the origin of differences in physical patterns.
- B) Changes in matter--Learners understand the properties of the substances that make up objects or materials found in the environment.
- C) Energy--Learners begin to grasp formal concepts related to energy by focusing on energy transfer and transformations. They are able to make connections among phenomena such as light, heat, magnetism, electricity, and the motion of objects.

Strand 2.2--The Living Environment

- A) Organisms, populations, and communities--Learners understand that biotic communities are made up of plants and animals that are adapted to live in particular environments.
- B) Heredity and evolution--Learners have a basic understanding of the importance of genetic heritage.
- C) Systems and connections. Learners understand major kinds of interactions among organisms or populations of organisms.
- D) Flow of matter and energy--Learners understand how energy and matter flows among the abiotic and biotic components of the environment.

Strand 2.3--Humans and Their Societies

- A) Individuals and groups--Learners understand that how individuals perceive the environment is influenced in part by individual traits and group membership or affiliation.
- B) Culture--As they become familiar with a wider range of cultures and subcultures, learners gain an understanding of cultural perspectives on the environment and how the environment may, in turn, influence culture.
- C) Political and economic systems--Learners become more familiar with political and economic systems and how these systems take the environment into consideration.
- D) Global connections--Learners become familiar with ways in which the world's environmental, social, economic, cultural, and political systems are linked.
- E) Change and conflict--Learners understand that human systems change over time and that conflicts sometimes arise over differing and changing viewpoints about the environment.

Strand 2.4--Environment and Society

- A) Human/environment interactions-- Learners understand that human-caused changes have consequences for the immediate environment as well as for other places and future times.
- B) Places-- Learners begin to explore the meaning of places both close to home and around the world.
- C) Resources--Learners understand that uneven distribution of resources influences their use and perceived value.
- D) Technology--Learners understand the human ability to shape and control the environment as a function of the capacities for creating knowledge and developing new technologies.
- E) Environmental issues--Learners are familiar with a range of environmental issues at scales that range from local to national to global. They understand that people in other places around the world share many of the issues they are concerned about locally.

Strand 3-- Skills for Understanding and Addressing Environmental Issues

Strand 3.1--Skills for Analyzing and Investigating Environmental Issues

- A) Identifying and investigating issues--Learners are able to use primary and secondary sources of information, and apply growing research and analytical skills, to investigate environmental issues, beginning in their own community.
- B) Sorting out the consequences of issues--Learners are able to apply their knowledge of ecological and human processes and systems to identify the consequences of specific environmental issues.
- C) Identifying and evaluating alternative solutions and courses of action--Learners are able to identify and develop action strategies for addressing particular issues.
- D) Working with flexibility, creativity, and openness--Learners are able to consider the assumptions and interpretations that influence the conclusions they and others draw about environmental issues.

Strand 3.2--Decision-Making and Citizenship Skills

- A) Forming and evaluating personal views--Learners are able to identify, justify, and clarify their views on environmental issues and alternative ways to address them.
- B) Evaluating the need for citizen action--Learners are able to evaluate whether they believe action is needed in particular situations, and decide whether they should be involved.
- C) Planning and taking action--As learners begin to see themselves as citizens taking active roles in their communities, they are able to plan for and engage in citizen action at levels appropriate to their maturity and preparation.
- D) Evaluating the results of actions--Learners are able to analyze the effects of their own actions and actions taken by other individuals and groups.

Strand 4-- Personal and Civic Responsibility

- A) Understanding societal values and principles--Learners understand that societal values can be both a unifying and a divisive force.
- B) Recognizing citizens' rights and responsibilities--Learners understand the rights and responsibilities of citizenship and their importance in promoting the resolution of environmental issues.
- C) Recognizing efficacy--Learners possess a realistic self-confidence in their effectiveness as citizens.
- D) Accepting personal responsibility--Learners understand that their actions can have broad consequences and that they are responsible for those consequences.

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