

ENVIRONMENTAL STRANDS

The NEED approach to environmental awareness is through thematic strands, or major concepts, that apply to every thing in nature and, like strands of rope, tie large notions about the universe into packages that can be easily recognized by students. Unlike specific taxonomic phraseology, the NEED strands apply to all environments - and arouse acute curiosity in the viewer, who may apply these strands to any objects in any environment.

Variety and Similarities: Many likenesses and differences occur among living and non-living things. A variety of function, size, and structure exists in plants and stars, rocks and animals, processes and people. However, there are sufficient similarities to permit man to classify them into orderly patterns. These classifications enhance man's understanding of the universe.

Patterns: Organizational patterns are kinds of structures which may be found in geological formations, sociological groupings, and in the social arrangements of animals into ecological systems. Anatomical structures are also functional patterns (or physiological); the structure of the atmosphere is a functional relationship where its movements form patterns of weather and climate. Some patterns may have neither structural nor functional relationships, and their organization may be found in the beauty of their spacial arrangements.

Interaction and Interdependence: No thing exists in isolation. Interactions occur among living and non-living things due to their relationships in time, position, and energy. Cause-and-effect interactions, including interdependence and interchange of energy and materials among living things, among non-living things, and among all things and their environments, occur everywhere.

Continuity and Change: Continual change occurs with living and non-living things. Multitudes of changes of energy and materials occur among living things and among each other - among galaxies and stars, cells and systems. Some changes seem to occur in cycles and some do not. Throughout all these changes there run patterns of continuity and constancy. Identities often continue in spite of changes; for example, matter and energy may be changed in form, or from one to the other, but they can be neither created nor destroyed. Organisms change as they live out their lives, yet a continuity is expressed as new organisms carry on where the old leave off.

Evolution and Adaptation: Throughout time living and non-living things undergo evolutionary development; long-range developments have occurred and continue to occur. These developments occur relatively slowly as compared to the life span of organisms. Organisms modify and are modified by their environment; heredity preserves elements of continuity. Such processes include the development of galaxies and planetary systems, the evolution of the planet Earth into its modern state and its future states, and the development of life from non-living entities, to simple forms, to complex forms, and perhaps back to more simplistic forms.