Aligning Iowa CORE Curriculum with NAAEE Guidelines for Excellence in Environmental Education

Yellow Indicates an Iowa CORE Curriculum content area.

Strand 1: Questioning, Analysis and Interpretation Skills

	Fourth Grade	Eighth Grade	Twelfth Grade
1.A Questioning	Learners are able to develop questions that help them learn about the environment and do simple investigations. ***Science as Inquiry, Writing***	Learners are able to develop, focus, and explain questions that help them learn about the environment and do environmental investigations. ***Science as Inquiry***	Learners are able to develop, modify, clarify, and explain questions that guide environmental investigations of various types. They understand factors that influence the questions they pose. ***Science as Inquiry***
1.B Designing Investigations	Learners are able to design simple investigations. ***Science as Inquiry***	Learners are able to design environmental investigations to answer particular questions—often their own questions. ***Science as Inquiry***	Learners know how to design investigations to answer particular questions about the environment. They are able to develop approaches for investigating unfamiliar types of problems and phenomena, select appropriate means of inquiry, including scientific investigations, historical inquiry, and social science observation and research. ***Science as Inquiry***
1.C Collecting Information	Learners are able to locate and collect information about the environment and environmental topics. ***Writing***	Learners are able to locate and collect reliable information about the environment or environmental topics using a variety of methods and sources. ***Science as Inquiry***	Learners are able to locate and collect reliable information for environmental investigations of many types. They know how to use sophisticated technology to collect information, including computer programs that access, gather, store, and display data. ***Science as Inquiry***
1.D Evaluating Accuracy and Reliability	Learners understand the need to use reliable information to answer their questions. They are familiar with some basic factors to consider in judging the merits of information. ***Science as Inquiry***	Learners are able to judge the weaknesses and strengths of the information they are using. ***Science as Inquiry***	Learners can apply basic logic and reasoning skills to evaluate completeness and reliability in a variety of information sources. ***Science as Inquiry***

1.E Organizing Information	Learners are able to describe data and organize information to search for relationships and patterns concerning the environment and environmental topics. ***Science as Inquiry***	Learners are able to classify and order data, and to organize and display information in ways that help analysis and interpretation. ***Science as Inquiry***	Learners are able to organize and display information in ways appropriate to different types of environmental investigations and purposes. ***Science as Inquiry***
1.F Working with Models and Simulations	Learners understand that relationships, patterns, and processes can be represented by models. ***Science as Inquiry***	Learners understand many of the uses and limitations of models. ***Science as Inquiry***	Learners are able to create, use, and evaluate models to understand environmental phenomena. ***Science as Inquiry***
1.G Drawing Conclusions and Developing Explanations	Learners can develop simple explanations that address their questions about the environment. ***Science as Inquiry***	Learners are able to synthesize their observations and findings into coherent explanations. ***Science as Inquiry***	Learners are able to use evidence and logic in developing proposed explanations that address their initial questions and hypotheses. ***Science as Inquiry***
Strand 2: Knowledge of Environmental Processes and Systems			
Strand 2.1–The Earth as a Physical System			
	Fourth Grade	**Eighth Grade**	**Twelfth Grade**
2.1.A Processes that Shape the Earth	Learners are able to identify changes and differences in the physical environment. ***Earth & Space Science***	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. ***Earth & Space Science***	Learners understand the major physical processes that shape the Earth. They can relate these processes, especially those that are large-scale and long term, to characteristics of the Earth. ***Earth & Space Science***
2.1.B Changes in Matter	Learners are able to identify basic characteristics of and changes in matter. ***Physical Science***	Learners understand the properties of the substances that make up objects or materials found in the environment. ***Physical Science***	Learners apply their understanding of chemical reactions to round out their explanations of environmental characteristics and everyday phenomena. ***Physical Science***

2.1.C **Energy**	While they may have little understanding of formal concepts associated with energy, learners are familiar with the basic behavior of some different forms of energy. ***Earth & Space Science***	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. ***Physical Science***	Learners apply their knowledge of energy and matter to understand phenomena in the world around them. ***Physical Science***
Strand 2.2–The Living Environment			
2.2.A **Organisms, Populations, and Communities**	Learners understand basic similarities and differences among a wide variety of living organisms. They understand the concept of habitat. ***Life Science***	Learners understand that biotic communities are made up of plants and animals that are adapted to live in particular environments. ***Life Science***	Learners understand basic population dynamics and the importance of diversity in living systems. ***Life Science***
2.2.B **Heredity and Evolution**	Learners understand that plants and animals have different characteristics and that many of the characteristics are inherited. ***Life Science***	Learners have a basic understanding of the importance of genetic heritage. ***Life Science***	Learners understand the basic ideas and genetic mechanisms behind biological evolution. ***Life Science***
2.2.C **Systems and Connections**	Learners understand basic ways in which organisms are related to their environments and to other organisms. ***Life Science***	Learners understand major kinds of interactions among organisms or populations of organisms. ***Life Science***	Learners understand the living environment to be comprised of interrelated, dynamic systems. ***Life Science***
2.2.D **Flow of Matter and Energy**	Learners know that living things need some source of energy to live and grow. ***Earth & Space Science***	Learners understand how energy and matter flows among the abiotic and biotic components of the environment. ***Life Science***	Learners are able to account for environmental characteristics based on their knowledge of how matter and energy interact in living systems. ***Life Science***

Strand 2.3–Humans and Their Societies			
2.3.A Individuals and Groups	Learners understand that people act as individuals and as group members and that groups can influence individual actions. ***Life Science, Behavioral Sciences***	Learners understand that how individuals perceive the environment is influenced in part by individual traits and group membership or affiliation. ***Behavioral Sciences***	Learners understand the influence of individual and group actions on the environment, and how groups can work to promote and balance interests. ***Civic Literacy***
2.3.B Culture	Learners understand that experiences and places may be interpreted differently by people with different cultural backgrounds, at different times, or with other frames of reference. ***Geography, History***	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. ***Behavioral Sciences***	Learners understand cultural perspectives and dynamics and apply their understanding in context. ***Behavioral Sciences***
2.3.C Political and Economic Systems	Learners understand that government and economic systems exist because people living together in groups need ways to do things such as provide for needs and wants, maintain order, and manage conflict.	Learners become more familiar with political and economic systems and how these systems take the environment into consideration. ***Geography***	Learners understand how different political and economic systems account for, manage, and affect natural resources and environmental quality. ***Civic Literacy***
2.3.D Global Connections	Learners understand how people are connected at many levels—including the global level—by actions and common responsibilities that concern the environment. ***Economics***	Learners become familiar with ways in which the world's environmental, social, economic, cultural, and political systems are linked. ***Behavioral Sciences***	Learners are able to analyze global social, cultural, political, economic, and environmental linkages. ***Civic Literacy***
2.3.E Change and Conflict	Learners recognize that change is a normal part of individual and societal life. They understand that conflict is rooted in different points of view. ***Civic Literacy***	Learners understand that human social systems change over time and that conflicts sometimes arise over differing and changing viewpoints about the environment. ***History***	Learners understand the functioning of public processes for promoting and managing change and conflict, and can analyze their effects on the environment.

Strand 2.4–Environment and Society			
2.4.A Human/ Environment Interactions	Learners understand that people depend on, change, and are affected by the environment. ***Geography, Life Science***	Learners understand that human-caused changes have consequences for the immediate environment as well as for other places and future times. ***Life Science, Geography***	Learners understand that humans are able to alter the physical environment to meet their needs and that there are limits to the ability of the environment to absorb impacts or meet human needs. ***Geography***
2.4.B Places	Learners understand that places differ in their physical and human characteristics.	Learners begin to explore the meaning of places both close to home and around the world. ***Geography***	Learners understand "place" as humans endowing a particular part of the Earth with meaning through their interactions with that environment. ***Geography***
2.4.C Resources	Learners understand the basic concepts of resource and resource distribution. ***Economics***	Learners understand that uneven distribution of resources influences their use and perceived value. ***Geography***	Learners understand that the importance and use of resources change over time and vary under different economic and technological systems. ***Geography***
2.4.D Technology	Learners understand that technology is an integral part of human existence and culture. ***Economics***	Learners understand the human ability to shape and control the environment as a function of the capacities for creating knowledge and developing new technologies. ***Technology Literacy***	Learners are able to examine the social and environmental impacts of various technologies and technological systems. ***Technology Literacy***
2.4.E Environmental Issues	Learners are familiar with some local environmental issues and understand that people in other places experience environmental issues as well.	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 experience environmental issues similar to the ones they are concerned about locally.	Learners are familiar with a range of environmental issues at scales that range from local to national to global. They understand that these scales and issues are often linked. ***Writing, Speaking, Science as Inquiry***

Strand 3: Skills for Understanding and Addressing Environmental Issues			
Strand 3.1—Skills for Analyzing and Investigating Environmental Issues			
	Fourth Grade	**Eighth Grade**	**Twelfth Grade**
3.1.A Identifying and Investigating Issues	Learners are able to identify and investigate issues in their local environments and communities. ***Science as Inquiry***	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. ***Science as Inquiry***	Learners apply their research and analytical skills to investigate environmental issues ranging from local issues to those that are regional or global in scope. ***Life Science***
3.1.B Sorting out the Consequences of Issues	As learners come to understand that environmental and social phenomena are linked, they are able to explore the consequences of issues. ***Employability Skills***	Learners are able to apply their knowledge of ecological and human processes and systems to identify the consequences of specific environmental issues. ***Life Science***	Learners are able to evaluate the consequences of specific environmental changes, conditions, and issues for human and ecological systems. ***Geography***
3.1.C Identifying and Evaluating Alternative Solutions and Courses of Action	Learners understand there are many approaches to resolving issues. ***Science as Inquiry***	Learners are able to identify and develop action strategies for addressing particular issues. ***Science as Inquiry***	Learners are able to identify and propose action strategies that are likely to be effective in particular situations and for particular purposes. ***Science as Inquiry***
3.1.D Working with Flexibility, Creativity, and Openness	Learners understand the importance of sharing ideas and hearing other points of view. ***Employability Skills & Universal Constructs***	Learners are able to consider the assumptions and interpretations that influence the conclusions they and others draw about environmental issues. ***Employability Skills***	While environmental issues investigations can bring to the surface deeply held views, learners are able to engage each other in peer review conducted in the spirit of open inquiry. ***Science as Inquiry***
Strand 3.2: Decision-Making and Citizenship Skills			
3.2.A Forming and Evaluating Personal Views	Learners are able to examine and express their own views on environmental issues. ***Speaking***	Learners are able to identify, justify, and clarify their views on environmental issues and alternative ways to address them. ***Life Science, Science as Inquiry***	Learners are able to communicate, evaluate, and justify their own views on environmental issues and alternative ways to address them. ***Science as Inquiry***

3.2.B Evaluating the Need for Citizen Action	Learners are able to think critically about whether they believe action is needed in particular situations and whether they believe they should be involved. ***Life Science***	Learners are able to evaluate whether they believe action is needed in particular situations, and decide whether they should be involved. ***Employability Skills***	Learners are able to decide whether action is needed in particular situations and whether they should be involved. ***Employability Skills, Civic Literacy***
3.2.C Planning and Taking Action	By participating in issues of their choosing-mostly close to home-they learn the basics of individual and collective action. ***Employability Skills***	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. ***Civic Literacy***	Learners know how to plan for action based on their research and analysis of an environmental issue. If appropriate, they take actions that are within the scope of their rights and consistent with their abilities and responsibilities as citizens. ***Civic Literacy***
3.2.D Evaluating the Results of Actions	Learners understand that civic actions have consequences. ***Civic Literacy***	Learners are able to analyze the effects of their own actions and actions taken by other individuals and groups. ***Science as Inquiry***	Learners are able to evaluate the effects of their own actions and actions taken by other individuals and groups. ***Science as Inquiry***
Strand 4: Personal and Civic Responsibility			
	Fourth Grade	**Eighth Grade**	**Twelfth Grade**
4.A Understanding Societal Values and Principles	Learners can identify fundamental principles of U.S. society and explain their importance in the context of environmental issues. ***Civic Literacy***	Learners understand that societal values can be both a unifying and a divisive force.	Learners know how to analyze the influence of shared and conflicting societal values. ***History***
4.B Recognizing Citizens' Rights and Responsibilities	Learners understand the basic rights and responsibilities of citizenship. ***Civic Literacy***	Learners understand the rights and responsibilities of citizenship and their importance in promoting the resolution of environmental issues. ***Civic Literacy***	Learners understand the importance of exercising the rights and responsibilities of citizenship. ***Civic Literacy***

4.C **Recognizing Efficacy**	Learners possess a realistic self-confidence in their effectiveness as citizens. ***Health Literacy, Employability Skills***	Learners possess a realistic self-confidence in their effectiveness as citizens.	Learners possess a realistic self-confidence in their effectiveness as citizens. ***Health Literacy***
4.D **Accepting Personal Responsibility**	Learners understand that they have responsibility for the effects of their actions. ***Civic Literacy***	Learners understand that their actions can have broad consequences and that they are responsible for those consequences. ***Civic Literacy, Employability Skills***	Learners understand that their actions can have broad consequences and accept responsibility for recognizing those effects and changing their actions when necessary. ***Civic Literacy***

These are only a few ways in which you could integrate environmental education into the Iowa CORE Curriculum. Many Iowa CORE content areas and essential skills and concepts could also be fulfilled by using environmental issues or themes as topics of study. Develop literacy by reading a conservation-themed book, work on math skills by surveying plant populations in your schoolyard or local park, or use patterns found in nature as a springboard for an art project. Be creative, and you will find the possibilities for inclusion of environment-based education are all around you. See the Outdoor Recreation Cross-curricular Guide for more ideas and suggestions.