EE 8 Crosswalk

PLEASE NOTE:

- The bulleted items found in the EE Guidelines are exemplars of the ideas above. As such the state document was determined to have alignment if the at least some the standards reflect the big ideas above the bulleted items. The bullets were used as guidance.
- Maine Learning Results in BLACK are from the Science and Technology Standards.
- Maine Learning Results in GREEN are from the Social Studies Standards.
- Links to the Mathematics and ELA were noted but specific language was left out pending the final drafts of the core standards in these areas.
- Standards from Career and Education Development are specifically noted.
- Alignment to the Maine Standards is understood unless otherwise noted.

EE Guidelines - Grade 8		Maine Learning Results (MLR)
A) Questioning—Learners are able to develop, focus, and explain questions that help them learn about the environment and do environmental investigations. • *Identify environmental questions based on personal experiences both in and outside school, newspaper and magazine articles, television or radio news, or videos.* *Summarize an environmental problem or situation to provide context for, or explain the origin of, a particular question.* *Create visual presentations (such as maps, graphs, or video tapes) and written and oral statements that describe their thinking about the problem.* • *Pose clear questions and ideas to test (hypotheses), reformulating them when necessary.* • *Clarify their own beliefs about the environment and discuss*		**Students plan, conduct, analyze data from, and communicate results of investigations, including simple experiments.** a. Identify questions that can be answered through scientific investigations. **Students use a systematic process, tools, equipment, and a variety of materials to design and produce a solution or product to meet a specified need, using established criteria.** a. Identify appropriate problems for *technological design*.

how those beliefs are reflected in the questions they ask.		
B) Designing investigations—Learners are able to design environmental investigations to answer particular questions—often their own questions. • *Select types of inquiry appropriate to their questions.* • *Define the scope of their inquiry, identifying the main variables and phenomena to be studied.* • *Select appropriate systems of measurement and observation.* • *Select tools that are appropriate for their environmental investigations based on the question asked and the type of information sought.*		**Students plan, conduct, analyze data from, and communicate results of investigations, including simple experiments.** b. Design and safely conduct scientific investigations including experiments with controlled variables. c. Use appropriate tools, metric units, and techniques to gather, analyze, and interpret data. **Students use a systematic process, tools, equipment, and a variety of materials to design and produce a solution or product to meet a specified need, using established criteria.** b. Design a solution or product.
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. • *Observe systematically, measure accurately, and keep thorough and accurate records, which may include written notes and data tables, sketches, and photographs.* • *Understand and use various systems of measurement and derived measurements such as rates.* • *Assess, choose, and synthesize materials from resources such as aerial photographs, topographic maps, and satellite images; library and museum collections, historical documents, and eyewitness accounts; computerized databases and spreadsheets; the internet; and government records.* • *Collect firsthand information about their own community using field study skills.*		**Mathematics** **Students plan, conduct, analyze data from, and communicate results of investigations, including simple experiments.** c. Use appropriate tools, metric units, and techniques to gather, analyze, and interpret data. **Students use a systematic process, tools, equipment, and a variety of materials to design and produce a solution or product to meet a specified need, using established criteria.** c. Communicate a proposed design using drawings and simple *models*. d. Implement a proposed design.
D) Evaluating accuracy and reliability—Learners are able to judge the weaknesses and strengths of the		ELA **A1. Students research, select, and present a position on a**

information they are using. • *Identify and evaluate vague claims they hear on television or through other media. For example, examine the credibility of results of public opinion polling about environmental topics, considering such factors as sampling methods, logical conclusions, and appropriate analogies.* • *Identify factors that affect the credibility of information, including assumptions and procedures used to create it; the social, political, and economic context in which the information was created; and potential bias due to omission, suppression, or invention of factual information.* • *Examine evidence, identify faulty reasoning, and apply other basic logic and reasoning skills in evaluating information sources. Identify gaps in information that indicate a need for further discovery or inquiry.* • *Evaluate data and evidence for accuracy, relevance, significance, appropriateness, and clarity.*		**current social studies issue by proposing and revising research questions, and locating and selecting information from multiple and varied sources.** f. Evaluate and verify the credibility of the information found in print and non-print sources. g. Use additional sources to resolve contradictory information. **Students plan, conduct, analyze data from, and communicate results of investigations, including simple experiments.** f. Communicate, critique, and analyze their own scientific work and the work of other students. **Students use a systematic process, tools, equipment, and a variety of materials to design and produce a solution or product to meet a specified need, using established criteria.** e. Evaluate a completed design or product. f. Suggest improvements for their own and others' designs and try out proposed modifications.
E) Organizing information—Learners are able to classify and order data, and to organize and display information in ways that help analysis and interpretation. • *Present environmental data in a variety of formats including charts, tables, plots, graphs, maps, and flowcharts. For example, chart stream flows, create a map of local businesses that require air quality permits, or organize survey results into a table.* • *Explain why they chose specific ways of ordering and displaying information. Consider factors such as the question being answered, the type of information, and the purpose of the display.* • *Present environmental data in ways that demonstrate possible relationships between sets of information such as population*		**Students plan, conduct, analyze data from, and communicate results of investigations, including simple experiments.** d. Use mathematics to gather, organize, and present data and structure convincing explanations. e. Use logic, critical reasoning and evidence to develop descriptions, explanations, predictions, and *models.* **Students use a systematic process, tools, equipment, and a variety of materials to design and produce a solution or product to meet a specified need, using established criteria.** f. Suggest improvements for their own and others' designs and try out proposed modifications. g. Explain the design process including the stages of problem

census counts of a certain bird species and the prevalence of certain tree species or habitat types.		identification, solution design, implementation, and evaluation.
F) Working with models and simulations—Learners understand many of the uses and limitations of models. • *Describe how models are used to think about long-term processes such as population growth or processes that are difficult to see such as bird migration or the movement of the planets in relationship to the sun.* • *Use models to represent and investigate aspects of the physical world such as weather and specific phenomena such as hurricanes.* • *Manipulate mathematical and physical models using a computer.* • *Evaluate models based on the question being investigated. Account for variables such as the complexity of the model, its scale, its ability to represent important features of the process being modeled, and its reliability and accuracy.* • *Recognize limitations of models and simulations. For example, describe a situation in which a model of an environmental phenomenon is not useful.*		**Students use *models* to examine a variety of real-world phenomena from the physical setting, the living environment, and the technological world and compare advantages and disadvantages of various *models*.** a. Compare different types of *models* that can be used to represent the same thing (including *models* of chemical reactions, motion, or cells) in order to match the purpose and complexity of a model to its use. b. Propose changes to m*odels* and explain how those changes may better reflect the real thing.
G) Drawing conclusions and developing explanations— Learners are able to synthesize their observations and findings into coherent explanations. • *Distinguish between description and explanation and give examples of each based on their own environmental investigations.* • *Consider the possible relationships among two or more variables.* • *Propose explanations based on what they observed or learned through research, selecting which evidence to use and accounting for discrepancies. Synthesize and interpret*		**Students plan, conduct, analyze data from, and communicate results of investigations, including simple experiments.** e. Use logic, critical reasoning and evidence to develop descriptions, explanations, predictions, and *models.* f. Communicate, critique, and analyze their own scientific work and the work of other students. **Students use a systematic process, tools, equipment, and a variety of materials to design and produce a solution or product to meet a specified need, using established criteria.** f. Suggest improvements for their own and others' designs and try out proposed modifications.

information from a range of sources. *• List strengths and weaknesses of proposed explanations. Discuss how the proposed explanation could be rejected or its reliability improved.* *• Use their proposed explanations to form new questions and suggest new avenues of inquiry.*		
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. *• Analyze physical patterns such as climate, areas of geothermal activity, soil types, and arid regions, suggesting reasons for these patterns. Explain these patterns in terms of abrupt forces (such as earthquakes or major storms) and long-term processes (such as erosion and rock formation), as well as those that are human-caused (such as suburban development or agricultural practices).* *• Predict the consequences of specific physical phenomena such as a hurricane in a coastal area or heavy grazing in an arid region.* *• Relate physical processes and patterns (such as climate, weather phenomena, and seasonal change) to the Earth/sun relationship. For example, create a model that shows how seasonal change is affected by the Earth/sun relationship.*		**Students describe the various cycles, physical and biological forces and processes, position in space, energy transformations, and human actions that affect the short- term and long-term changes to the Earth.** a. Explain how the tilt of Earth's rotational axis relative to the plane of its yearly orbit around the sun affects the day length and sunlight intensity to cause seasons. b. Describe Earth Systems - biosphere, atmosphere, hydrosphere and lithosphere - and cycles and interactions within them (including water moving among and between them, rocks forming and transforming, and weather formation). c. Give several reasons why the climate is different in different regions of the Earth. f. Give examples of abrupt changes and slow changes in Earth Systems.
B) Changes in matter—Learners understand the properties of the substances that make up objects or materials found in the environment. *• Describe a variety of chemical reactions and offer examples from daily life and the local environment.* *• Explain properties of materials in terms such as atomic and molecular structure or reactivity. For example, describe why particular building materials have properties such as rigidity,*	√-	**Students describe physical and chemical properties of matter, interactions and changes in matter, and transfer of energy through matter.** c. Describe the difference between physical and chemical change. d. Explain the relationship of the motion of atoms and molecules to the states of matter for gases, liquids, and solids.

impermeability, or the ability to reflect or gather heat. *• Explain an object's characteristics based on its composition and how it was formed. For example, describe the characteristics of different types of rock and account for these characteristics based on their constituent parts and the processes by which they were formed.*		
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. *• Trace the flow of energy in examples that encompass several different transfers and transformations of energy. For example, trace the path of energy in the creation and consumption of fossil fuels.* *• Explain how solar energy contributes to the movement of global air masses, the hydrological cycle and ocean currents.* *• Explain how the process of life is based on the conversion, utilization, storage and transfer of energy. For example, create a visual display that shows how plants or animals use energy, where that energy comes from, and where it goes.*		**Students describe physical and chemical properties of matter, interactions and changes in matter, and transfer of energy through matter.** h. Describe several different types of energy forms including heat energy, chemical energy, and mechanical energy. i. Use examples of energy transformations from one form to another to explain that energy cannot be created or destroyed. j. Describe how *heat* is transferred from one object to another by conduction, convection, and/or radiation. k. Describe the properties of solar radiation and its interaction with objects on Earth. **Students examine how the characteristics of the physical, non-living (abiotic) environment, the types and behaviors of living (biotic) organisms, and the flow of matter and energy affect organisms and the ecosystem of which they are part.** c. Describe the source and flow of energy in the two major food webs, terrestrial and marine. d. Describe how matter and energy change from one form to another in living things and in the physical 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.		**Students examine how the characteristics of the physical, non-living (abiotic) environment, the types and behaviors of living (biotic) organisms, and the flow of matter and energy affect organisms and the ecosystem of which they are part.**

• *Define and give examples to illustrate the concepts of species, population, community, and ecosystem. Trace and give examples of connections among organisms at those levels of organization.* • *Link features of internal and external anatomy with the ability of organisms to make or find food and reproduce in particular environments.* • *Understand that some animals and plants have adapted to extreme environmental conditions. Give examples of adaptations that are behavioral (for example, the migration of Canada geese and other birds) and physical (such as the physical structures that enable desert animals and plants to exist on minimal amounts of water).* • *Describe how organisms differ in how they use energy. For example, identify organisms that use energy quickly for growth and metabolism, and therefore must replace it quickly (e.g., a hummingbird) and others that use energy more slowly and therefore need to replace it less frequently (e.g., a python). Predict the habitat needs of these different types of organisms.*		b. Describe ways in which two types of organisms may interact (including competition, predator/prey, producer/consumer/decomposer, parasitism, and mutualism) and describe the positive and negative consequences of such interactions. c. Describe the source and flow of energy in the two major food webs, terrestrial and marine. d. Describe how matter and energy change from one form to another in living things and in the physical environment. e. Explain that the total amount of matter in the environment stays the same even as its form and location change. **Students differentiate among organisms based on biological characteristics and identify patterns of similarity.** a. Compare physical characteristics that differentiate organisms into groups (including plants that use sunlight to make their own food, animals that consume energy-rich food, and organisms that cannot easily be classified as either). d. Describe how external and internal structures of animals and plants contribute to the variety of ways organisms are able to find food and reproduce.
B) Heredity and evolution—Learners have a basic understanding of the importance of genetic heritage. • *Describe some ways in which variation among individuals of the same species can sometimes give certain individuals an advantage within a specific environment.* • *Describe in general terms the theory of natural selection for particular traits and how that process can result in descendants that are quite different from their ancestors.* • *Define extinction, cite evidence of extinction, and identify some of its causes.*	√-	**Students describe the evidence that evolution occurs over many generations, allowing species to acquire many of their unique characteristics or adaptations**. c. Describe how variations in the behavior and traits of an offspring may permit some of them to survive a changing environment.

• *Discuss the possible implications of permanent loss of a species and how it affects interdependence within an ecosystem.*		
C) Systems and connections. Learners understand major kinds of interactions among organisms or populations of organisms. • *Describe and give examples of producer/consumer, predator/prey, and parasite/host relationships.* • *Identify organisms that are scavengers or decomposers. Describe the roles they play within particular systems focusing on their relationship to other organisms and physical elements of the system.* • *Summarize how abiotic and biotic components in combination influence the structure of an ecosystem. For example, create a map for the local region that shows average temperature and rainfall correlated with local forest, grassland or desert ecosystems. Or discuss the process of soil formation in terms of the interaction of climate, geology, and living organisms.*		**Students examine how the characteristics of the physical, non-living (abiotic) environment, the types and behaviors of living (biotic) organisms, and the flow of matter and energy affect organisms and the ecosystem of which they are part.** b. Describe ways in which two types of organisms may interact (including competition, predator/prey, producer/consumer/decomposer, parasitism, and mutualism) and describe the positive and negative consequences of such interactions. **Students describe and apply principles of *systems* in man-made things, natural things, and processes.** a. Explain how individual parts working together in a *system* (including organisms, Earth systems, solar systems, or man-made structures) can do more than each part individually. c. Describe how *systems* are nested and that *systems* may be thought of as containing subsystems (as well as being a subsystem of a larger *system*) and apply the understanding to analyze *systems*.
D) Flow of matter and energy—Learners understand how energy and matter flows among the abiotic and biotic components of the environment. • *Trace the flow of energy through food webs that identify relationships among organisms in natural systems.* • *Explain how matter is transferred among organisms and between organisms and their environment in these food webs.* • *Describe how energy, which enters ecosystems as sunlight, changes form and is transferred in the exchanges (production, consumption, and decomposition) that comprise food webs.*		**Students examine how the characteristics of the physical, non-living (abiotic) environment, the types and behaviors of living (biotic) organisms, and the flow of matter and energy affect organisms and the ecosystem of which they are part.** c. Describe the source and flow of energy in the two major food webs, terrestrial and marine. d. Describe how matter and energy change from one form to another in living things and in the physical environment. e. Explain that the total amount of matter in the environment stays the same even as its form and location change.

A) Individuals and groups—Learners understand that how individuals perceive the environment is influenced in part by individual traits and group membership or affiliation. • *Describe individual development and identity in terms such as learning, perception, innate abilities, culture, social influences, and experience. Interpret their own beliefs about the environment using similar concepts.* • *Explain how group membership—and shared values, beliefs, and assumptions—can influence individuals, impel different reactions to physical and social environments and changes, and cause social change. For example, describe how family, religion, gender, ethnicity, socioeconomic status, and other factors may influence individuals' values and perceptions about the environment and their communities.* • *Identify and critique instances of stereotyping based on group affiliation. For example, discuss how people who are all identified as "environmentalists" may have very different perspectives from one another.*		**D2. Students understand geographic aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Describe the dynamic relationship between geographic features and various cultures, including the cultures of Maine Native Americans, various historical and recent immigrant groups in the United States, and other cultures in the world.
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. • *Explain how the environment is perceived differently by various cultures, and how these perspectives may influence individuals' perceptions of the environment. For example, based on stories from other cultures,* *script and perform scenes about what is considered beautiful, valuable, or frightening in the environment.* • *Explain how new technologies can change cultural perceptions and social behavior. For example, discuss how snowmobiles have changed subsistence lifestyles in Alaska,*		**D1. Students understand the geography of the community, Maine, the United States, and various regions of the world and the geographic influences on life in the past, present and future.** a. Explain that geography includes the study of physical, environmental, and cultural features of the State, nation, and various regions of the world to identify consequences of geographic influences and make predictions. d. Describe the impact of change, including technological change, on the physical and cultural environment. **D2. Students understand geographic aspects of unity and**

or the impact of air conditioning on settlement in southern Florida. *• Identify ways in which transportation and communications technology helps, or has helped, spread cultural values and behavior patterns.*		**diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Describe the dynamic relationship between geographic features and various cultures, including the cultures of Maine Native Americans, various historical and recent immigrant groups in the United States, and other cultures in the world.
C) Political and economic systems—Learners become more familiar with political and economic systems and how these systems take the environment into consideration. *• Differentiate among public and private goods and services, using environment-related goods and services to illustrate. For example, examine the values and functions of wetlands. Distinguish among public goods, such as groundwater recharge, flood control, and wildlife habitat; and private goods, such as their value for agricultural production or water storage, or the value of draining the land for other uses. Discuss difficulties encountered in drawing these distinctions.* *• Identify economic and political features of the local community and state, and describe how environmental decisions can be influenced by these economic and political systems and actors.* *• Identify ways in which governments and economic systems work to protect the environment and distribute natural resources. Give examples of laws, incentives, and penalties that affect people's behavior toward the environment and each other.*		**B3. Students understand political and civic aspects of unity and diversity in Maine, the United States, and various world cultures including Maine Native Americans.** a. Explain basic constitutional, political, and civic aspects of historical and/or current issues that involve unity and diversity in Maine, the United States, and other nations. **C2. Students understand economic aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** a. Describe factors in economic development, and how states, regions, and nations have worked together to promote economic unity and interdependence.
D) Global connections—Learners become familiar with ways in which the world's environmental, social, economic, cultural, and political systems are linked. *• Explain international trade in terms of uneven distribution of resources.*		**C1. Students understand the principles and processes of personal economics, the influence of economics on personal life and business, and the economic systems of Maine, the United States, and various regions of the world.** a. Explain that economics is the study of how scarcity requires

• *Describe ways in which the global environment is affected by individual and group actions, as well as by government policies and actions having to do with energy use and other forms of consumption, waste disposal, resource management, industry, and population.* • *Explain how an environmental change in one part of the world can have consequences for other places. For example, develop a map or another visual presentation that shows the effects of acid rain or nuclear fallout in places distant from the source of the pollution.* • *Identify a variety of global links, including transportation and communication systems, treaties, multi-national corporations, and international organizations.*		choice about what, how, for whom, and in what quantity to produce, and how scarcity relates to market economy, entrepreneurship, supply and demand, and personal finance. **C2. Students understand economic aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** a. Describe factors in economic development, and how states, regions, and nations have worked together to promote economic unity and interdependence. b. Describe the economic aspects of diverse cultures, including Maine Native Americans, various historical and recent immigrant groups in the United States, and various cultures in the world. **D1. Students understand the geography of the community, Maine, the United States, and various regions of the world and the geographic influences on life in the past, present and future.** d. Describe the impact of change, including technological change, on the physical and cultural environment. **D2. Students understand geographic aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Describe the dynamic relationship between geographic features and various cultures, including the cultures of Maine Native Americans, various historical and recent immigrant groups in the United States, and other cultures in the world.
E) Change and conflict—Learners understand that human social systems change over time and that conflicts		**B2. Students understand constitutional and legal rights, civic duties and responsibilities, and roles of citizens in a**

sometimes arise over differing and changing viewpoints about the environment. • *Describe patterns of change within and across cultures, communities, and other groups. Consider the rapidity of change, mechanisms that helped spread change, and what motivated change. For example, discuss how and why wastewater treatment became a common practice in the United States.* • *Explain how change affects individuals and groups differently and give examples of the trade-offs involved in decisions and actions ranging from the individual to the societal levels. For example, discuss how a decision about where to site a landfill, build a chemical plant, or locate a new highway might affect different neighborhoods, businesses, workers, people of varying socio-economic status, and others. Role play their reactions.* • *Describe and analyze examples of tensions between individual rights and benefits and the societal good. Illustrate with examples from the local community, possibly including disagreements over zoning, controversial proposals to raise taxes to pay for the purchase of open space or sewer system upgrades, or tradeoffs between commuting to work individually in a car or taking public transportation.* • *Identify some of the formal and informal ways that groups (including governments) attempt to anticipate, avoid, or resolve conflicts related to the environment.*		**constitutional democracy.** d. Analyze how people influence government and work for the common good including voting, writing to legislators, performing community service, and engaging in civil disobedience. **D1. Students understand the geography of the community, Maine, the United States, and various regions of the world and the geographic influences on life in the past, present and future.** d. Describe the impact of change, including technological change, on the physical and cultural environment. **D2. Students understand geographic aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Describe the dynamic relationship between geographic features and various cultures, including the cultures of Maine Native Americans, various historical and recent immigrant groups in the United States, and other cultures in the world. **E1. Students understand major eras, major enduring themes, and historic influences in the history of Maine, the United States, and various regions of the world.** d. analyze interpretations of historical events that are based on different perspectives and evidence. **E2. Students understand historical aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Identify and compare a variety of cultures through time,

		including comparisons of native and immigrant groups in the United States, and eastern and western societies in the world. **Students identify and describe the role of science and technology in addressing personal and societal challenges.** a. Describe how science and technology can help address societal challenges including population, natural hazards, sustainability, personal health and safety, and environmental quality. b. Identify personal choices that can either positively or negatively impact society including population, ecosystem sustainability, personal health, and environmental quality. c. Identify factors that influence the development and use of science and technology.
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. • *Describe intended and unintended environmental and social consequences associated with the changing use of technologies. Consider consequences that may be positive as well as negative. For example, discuss particular irrigation methods, different ways of generating electrical power, or the use of synthetic pesticides.* • *Explain how human-caused environmental changes cause changes in other places. For example, discuss the effects of building a dam on downstream plant and animal communities as well as on human communities.* • *Describe the effects of a local environmental restoration effort, such as wetlands creation. Predict the long-term consequences of such efforts, or a particular restoration*		**D1. Students understand the geography of the community, Maine, the United States, and various regions of the world and the geographic influences on life in the past, present and future.** a. Explain that geography includes the study of physical, environmental, and cultural features of the State, nation, and various regions of the world to identify consequences of geographic influences and make predictions. d. Describe the impact of change, including technological change, on the physical and cultural environment. **D2. Students understand geographic aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Describe the dynamic relationship between geographic features and various cultures, including the cultures of Maine Native Americans, various historical and recent immigrant

project.		groups in the United States, and other cultures in the world. **Students identify and describe the role of science and technology in addressing personal and societal challenges.** a. Describe how science and technology can help address societal challenges including population, natural hazards, sustainability, personal health and safety, and environmental quality. b. Identify personal choices that can either positively or negatively impact society including population, ecosystem sustainability, personal health, and environmental quality. c. Identify factors that influence the development and use of science and technology.
B) Places—Learners begin to explore the meaning of places both close to home and around the world. • *Analyze physical and human characteristics of places and make inferences about how and why these characteristics have developed and changed over time. For example, use maps and satellite photographs to examine how cities change in response to natural disasters such as floods, hurricanes, or earthquakes. Identify ways in which personal perceptions, culture, and technology influence people's perceptions of places. Discuss the importance of some places (such as Yellowstone National Park or the Mississippi River) as cultural symbols.* • *Identify regions based on different criteria such as watershed boundaries, sales and service areas for different businesses, or the area from which sports teams draw fans or symphony orchestras attract audiences.*		**D1. Students understand the geography of the community, Maine, the United States, and various regions of the world and the geographic influences on life in the past, present and future.** a. Explain that geography includes the study of physical, environmental, and cultural features of the State, nation, and various regions of the world to identify consequences of geographic influences and make predictions. d. Describe the impact of change, including technological change, on the physical and cultural environment. **D2. Students understand geographic aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Describe the dynamic relationship between geographic features and various cultures, including the cultures of Maine Native Americans, various historical and recent immigrant groups in the United States, and other cultures in the world.

C) Resources—Learners understand that uneven distribution of resources influences their use and perceived value. • *Map and discuss distribution and consumption patterns for specific resources, such as metals, fresh water, or certain types of forests. Note resources that are being rapidly depleted.* • *Explain why certain resources (such as oil, coal, or natural gas) are key to the development of human societies, and identify resources that were critical to development at different times in history.* • *Explain conflicts between individuals, states, regions, or nations noting factors such as differing attitudes about the use of specific resources and scarcity of natural resources. Illustrate with local or regional examples such as conflicts over water rights and use of habitat for local endangered species.*		**C1. Students understand the principles and processes of personal economics, the influence of economics on personal life and business, and the economic systems of Maine, the United States, and various regions of the world.** a. Explain that economics is the study of how scarcity requires choice about what, how, for whom, and in what quantity to produce, and how scarcity relates to market economy, entrepreneurship, supply and demand, and personal finance. **C2. Students understand economic aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Describe the economic aspects of diverse cultures, including Maine Native Americans, various historical and recent immigrant groups in the United States, and various cultures in the world.
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. • *Discuss technologies in the context of larger systems that have shaped the course of human history as well as human relationships with the environment. Use illustrations from the agricultural, industrial and transportation revolutions that have dramatically changed how people live and use resources.* • *Analyze how the ability to develop and use technology gives humans great influence over the environment and other living things. Use examples from their region, such as the ability to construct levees to protect areas from flooding or create wildlife refuges, build machines that produce or reduce air or*	√-	**Students understand and compare the similarities and differences between scientific inquiry and *technological design*.** b. Explain how constraints and consequences impact scientific inquiry and *technological design*. **D1. Students understand the geography of the community, Maine, the United States, and various regions of the world and the geographic influences on life in the past, present and future.** d. Describe the impact of change, including technological change, on the physical and cultural environment.

water pollution, or domesticate plants or animals for food production. *• Identify some of the important environmental and social issues related to particular technological developments in fields such as agriculture, manufacturing, and energy.*		
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 experience environmental issues similar to the ones they are concerned about locally. *• Identify other places, either contemporary or historical, experiencing issues similar to those in the learner's community or region.* *• Explain how issues arise because of conflicting points of view about a specific proposal, event, or condition in the environment. For example, discuss conflicting perspectives about past and present proposals to build large-scale dams such as the Three Gorges project in China, the Hetch-Hetchy dam in the U.S., or a similar project in the learner's region.* *• Discuss how the disagreements at the heart of environmental issues makes them difficult to resolve. Consider the role of understanding, creativity, or compromise in finding solutions.*		**B3. Students understand political and civic aspects of unity and diversity in Maine, the United States, and various world cultures including Maine Native Americans.** a. Explain basic constitutional, political, and civic aspects of historical and/or current issues that involve unity and diversity in Maine, the United States, and other nations.
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. *• Clearly articulate and define environmental issues. For example, describe the history and origins of the issue, actions that have been taken to address the issue, the apparent effects of these actions, and the current situation.*		**A1. Students research, select, and present a position on a current social studies issue by proposing and revising research questions, and locating and selecting information from multiple sources.** **A2. Students make individual and collaborative decisions on matters related to social studies using relevant information and research and discussion skills.** a. Develop individual and collaborative decisions/plans by

• *Identify key individuals and groups involved, their viewpoints, and the types of action they support. Describe areas of conflict and agreement.* • *Investigate the issue using secondary sources and original research where needed.* • *Examine how others have analyzed and understood the issue, identifying their approaches and the assumptions behind them.* • *Compare the issue with similar issues from other places and times.*		contributing equitably to collaborative discussions, seeking and examining alternative ideas, considering the pros and cons and thoughtfully and respectfully recognizing the contributions of other group members.
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. • *Describe the effects of human actions on specific elements, systems, and processes of the environment.* • *Analyze issues by looking at trade-offs that have been made. For example, consider where various human activities (such as landfills, highways, chemical factories, or hazardous waste incinerators) are located and their effects on different places and different segments of the population.* • *Speculate about the effects of a proposed state or local environmental regulation. For example, consider effects on different sectors of the economy, neighborhoods, public health, particular plant and animal species and communities, and overall environmental quality.* • *Predict the consequences of inaction or failure to resolve particular issues.*		**D1. Students understand the geography of the community, Maine, the United States, and various regions of the world and the geographic influences on life in the past, present and future.** a. Explain that geography includes the study of physical, environmental, and cultural features of the State, nation, and various regions of the world to identify consequences of geographic influences and make predictions. d. Describe the impact of change, including technological change, on the physical and cultural environment.
C) Identifying and evaluating alternative solutions and courses of action—Learners are able to identify and develop action strategies for addressing particular issues. • *Identify different proposals for resolving an environmental issue. Recognize and explain the perspectives on the issue that are embedded in those views.*		**A2. Students make individual and collaborative decisions on matters related to social studies using relevant information and research and discussion skills.** a. Develop individual and collaborative decisions/plans by contributing equitably to collaborative discussions, seeking and examining alternative ideas, considering the pros and cons and

• *Explain why various strategies may be effective in different situations. Consider their likely effects on society and the environment.* • *Independently and in groups, develop original strategies to address issues.* • *Discern similarities and differences in problem situations which might affect their ability to apply strategies that were successful in other places and times.*		thoughtfully and respectfully recognizing the contributions of other group members. b. Make a real or simulated decision related to the classroom, school, community, civic organization, Maine, or beyond by applying appropriate and relevant social studies knowledge and skills, including research skills, and other relevant information. **A3. Students select, plan, and implement a civic action or service-learning project based on a school, community, or State asset or need, and analyze the project's effectiveness and civic contribution.**
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. • *Explain how the interplay of ideas and perspectives strengthens the process of inquiry and the societal ability to address issues.* • *Receive questions and alternative explanations that others offer in discussions as well as in readings.* • *Explain why it is not always possible to select one correct explanation or a single best approach to addressing an issue.*		**A2. Students make individual and collaborative decisions on matters related to social studies using relevant information and research and discussion skills.** a. Develop individual and collaborative decisions/plans by contributing equitably to collaborative discussions, seeking and examining alternative ideas, considering the pros and cons and thoughtfully and respectfully recognizing the contributions of other group members. b. Make a real or simulated decision related to the classroom, school, community, civic organization, Maine, or beyond by applying appropriate and relevant social studies knowledge and skills, including research skills, and other relevant information.
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. • *Discuss personal perspectives with classmates, remaining open to new ideas and information.*		**A1. Students research, select, and present a position on a current social studies issue by proposing and revising research questions, and locating and selecting information from multiple sources.** *Alignment is weak as A1 is more substantive research and*

• *Justify their views based on information from a variety of sources, and clear reasoning.* • *Discuss their own beliefs and values regarding the environment and relate their personal view of environmental issues to these.* • *Identify ways in which others' views correspond or differ with their own views.*		*defense rather than personal "beliefs and values".*
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. • *Discuss whether action is warranted. Account for factors such as the scale of the problem; legal, social, economic, and ecological consequences; and alternatives to citizen action.* • *Identify different forms of action that citizens can take in the economic, political, and legal spheres, as well as actions aimed at directly improving or maintaining some part of the environment or persuading others to take action.* • *Speculate about the likely effects of specific actions on society and the environment, and the likelihood these actions will resolve a specific environmental issue.* • *Point out advantages and disadvantages of their personal involvement, considering factors such as their own skills, resources, knowledge, and commitment.*		**A3. Students select, plan, and implement a civic action or service-learning project based on a school, community, or State asset or need, and analyze the project's effectiveness and civic contribution.** *A3 alignment is weak as the EE standard asks students to "evaluate whether they believe action is needed."*
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. • *Develop action plans they can carry out individually, in small groups, or with a class, club, or larger organization. Include clear reasons and goals for action. Base these plans on knowledge of a range of citizen action strategies and the results*		**A3. Students select, plan, and implement a civic action or service-learning project based on a school, community, or State asset or need, and analyze the project's effectiveness and civic contribution.**

of their environmental issue investigations. *• Set realistic goals for action and include measures of success consistent with learners' abilities and an understanding of the complexity of the issue.* *• Decide whether their plan should be implemented immediately or at another time, changed, or abandoned; and carry through with action when appropriate.*		
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. *• Analyze the effects of decisions, policies, and actions taken by individuals and groups on a particular issue.* *• Analyze their own actions, explaining apparent effects and discussing them in light of students' goals and reasons for acting.* *• Describe some of the reasons why analyzing the results of actions may be difficult, including the scale of the issue, the time required to see effects, and the influence of other actions and factors.*		**A3. Students select, plan, and implement a civic action or service-learning project based on a school, community, or State asset or need, and analyze the project's effectiveness and civic contribution.**
A) Understanding societal values and principles—Learners understand that societal values can be both a unifying and a divisive force. *• Identify some of the shared political values and principles that unite American society, and explain their importance.* *• Discuss conflicting views about the meaning and application of shared values in specific issues. For example, explore conflicting views about the idea that one person's rights end where they infringe on another's. Use a specific context such as proposed sports stadium or whether to permit an industrial facility or housing development that is likely to pollute a stream.* *• Identify ways in which advocates appeal to values such as*		**B1. Students understand the basic ideal, purposes, principles, structures, and processes of constitutional government in Maine and the United States as well as examples of other forms of government in the world.** a. Explain that the study of government includes the structures and functions of government and the political and civic activity of citizens. b. Analyze examples of democratic ideals and constitutional principles that include the rule of law, legitimate power, and common good. **B2. Students understand constitutional and legal rights,**

individual freedoms, property rights, the public good, economic well-being, and patriotism. For example, analyze speeches and writings on specific environmental issues. • *Evaluate the principle of stewardship as a shared societal value. For example, compare conceptions of stewardship contained in writings of John Muir, Gifford Pinchot, and Aldo Leopold with their own understanding.*		**civic duties and responsibilities, and roles of citizens in a constitutional democracy.** a. Explain the constitutional and legal status of "citizen" and provide examples of rights, duties, and responsibilities of citizens. b. Describe how the powers of government are limited to protect individual rights and minority rights as described in the United States Constitution and the Bill of Rights. c. Analyze examples of the protection of rights in court cases or form current events. d. Analyze how people influence government and work for the common good including voting, writing to legislators, performing community service, and engaging in civil disobedience. **E1. Students understand major eras, major enduring themes, and historic influences in the history of Maine, the United States, and various regions of the world.** c. Trace and explain the history of democratic ideals and constitutional principles and their importance in the history of the United States and the world. **E2. Students understand historical aspects of unity and diversity in Maine, the United States, and various world cultures, including Maine Native Americans.** b. Identify and compare a variety of cultures through time, including immigrant groups in the United States, and eastern and western societies in the world.
B) Recognizing citizens' rights and responsibilities—		**B2. Students understand constitutional and legal rights,**

Learners understand the rights and responsibilities of citizenship and their importance in promoting the resolution of environmental issues. • *Identify rights and responsibilities associated with citizenship, including personal and civic responsibilities.* • *Describe ways in which commonly accepted rights and responsibilities of citizenship motivate people to help resolve environmental issues. Consider rights and responsibilities such as acquiring, using and selling property; the right to vote; freedom of speech and assembly; accepting responsibility for the consequences of one's actions; obeying the law; and respecting the rights and interests of others.*		**civic duties and responsibilities, and roles of citizens in a constitutional democracy.** a. Explain the constitutional and legal status of "citizen" and provide examples of rights, duties, and responsibilities of citizens. b. Describe how the powers of government are limited to protect individual rights and minority rights as described in the United States Constitution and the Bill of Rights. c. Analyze examples of the protection of rights in court cases or form current events. d. Analyze how people influence government and work for the common good including voting, writing to legislators, performing community service, and engaging in civil disobedience.
C) Recognizing efficacy—Learners possess a realistic self-confidence in their effectiveness as citizens. • *Explain the ways in which citizen action and public opinion influence environmental policy decisions.* • *Describe how individuals and groups act within society to create change, meet individual needs and promote the common good. Illustrate with examples from environmental issues.* • *Describe ways in which their actions have made a difference. Use examples that begin in the classroom and the home, and extend beyond to encompass the broader communities in which students begin to see possibilities for action.*		**Career and Education Development – No alignment** **A3. Students select, plan, and implement a civic action or service-learning project based on a school, community, or State asset or need, and analyze the project's effectiveness and civic contribution.** **B2. Students understand constitutional and legal rights, civic duties and responsibilities, and roles of citizens in a constitutional democracy.** d. Analyze how people influence government and work for the common good including voting, writing to legislators, performing community service, and engaging in civil disobedience.
D) Accepting personal responsibility—Learners understand that their actions can have broad consequences and that they are responsible for those consequences.		**B2. Students understand constitutional and legal rights, civic duties and responsibilities, and roles of citizens in a constitutional democracy.**

• *Analyze some of the effects that their actions (and the actions of their families, social groups, and communities) have on the environment, other humans, and other living beings.* • *Describe actions in terms of their effects that reach into the future.* • *Describe their personal responsibilities, comparing their view of their responsibilities with commonly accepted societal views.* • *Identify ways in which they feel responsible for helping resolve environmental issues within their community.*		d. Analyze how people influence government and work for the common good including voting, writing to legislators, performing community service, and engaging in civil disobedience. **Career and Education Development** **- weak alignment** **A3 Students demonstrate behaviors that reflect positive *interpersonal skills* and analyze how positive *interpersonal skills* lead to success in a variety of school, work, and community settings.** a. Getting along with others b. Respecting diversity c. Working as a member of a team d. Managing conflict e. Accepting/giving/using constructive feedback f. Accepting responsibility for personal behavior g. Demonstrating ethical behavior h. Following established rules/etiquette for observing/listening i. Demonstrating safe behavior j. Dealing with peer pressure