



GUIDELINES

Boulder County Environmental Education Guidelines (E Guidelines)

DEVELOPED BY
THE BOULDER COUNTY E MOVEMENT



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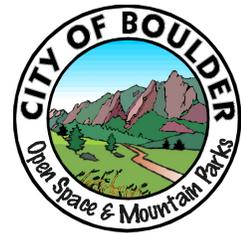
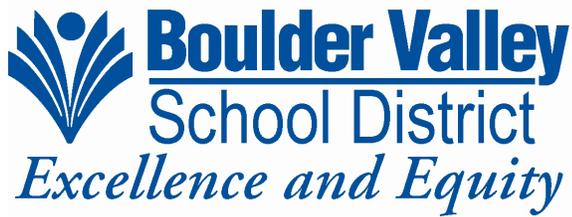


Table of Contents

INTRODUCTION	4
Background and Purpose	4
What are the E Guidelines?	4
Who are the E Guidelines for?	5
Intended Student Outcomes	5
Principles that Inform the E Guidelines	6
E Guidelines Framework	7
Definitions	7
District Commitments	8
ENDNOTE References	9
ECE/KINDERGARTEN	10
1ST GRADE	14
2ND GRADE	18
3RD GRADE	22
4TH GRADE	26
5TH GRADE	30
MIDDLE SCHOOL	34
HIGH SCHOOL	38
APPENDIX	42
E Guidelines Adoption Form (ECE - 5th Grade)	43
E Guidelines Adoption Form (Middle School and High School)	44
Continuum of the E Guidelines	47

Background and Purpose

In 2014, the Boulder County Environmental Education Collaborative released the report, *The State of Informal Environmental Education in Boulder County Schools*. The key findings of this report indicated that while quality EE was being offered throughout the county, it was not equally accessed by all grade levels and schools.

As a result of this report and continued collaboration in Boulder County with Boulder Valley School District and Saint Vrain School District, the Environmental Education Guidelines (E Guidelines) were developed to serve as a continuum of environmental education and service-learning opportunities with repeated experiences and multiple contacts from preschool through high school for Boulder County youth.

The purpose of the E Guidelines is to facilitate and nurture our students' curiosity and active exploration while fostering respect for the natural world and for each other. The collaboration between schools and informal partners seeks to facilitate students' developing understandings of how the natural world works and supports their own well-being. We want our students to know that they have an influence on the environment and in their communities by the way they choose to care for themselves, others and the places to which they are connected.



The E Guidelines offer strategic pathways for students' understandings of human and environmental relationships through holistic learning outcomes, and offering time for youth of all ages to experience natural settings through their heads, hearts, hands, and feet. These pathways are built on the premise that when we create opportunities for the heart and hands, we build and support understandings of content related to state and national standards.

What are the E Guidelines?

The following E Guidelines have been written to connect comprehensive strategic pathways for the environmental literacy of Boulder County youth from preschool through 12th grade.

The E Guidelines support the partnership between community environmental education providers and schools by providing:

- a road map for community partners that offer programming and resources
- a list of relevant resources and programs for teachers and administrators
- common best practices in environmental education in the classroom and field at each grade level
- common language for Boulder County around environmental literacy and the ways to achieve it for all Boulder County youth

These E Guidelines are designed to strengthen and facilitate the connections among learning activities, standards, best practices in environmental education, and resources available from community partners.

Who are the E Guidelines for?

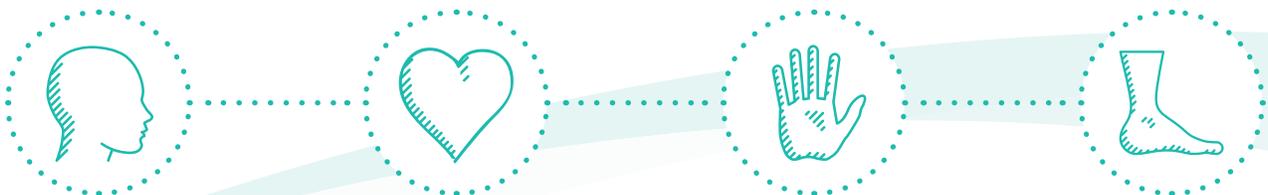
Teachers... to plan school-based curriculum and field trips that will integrate smoothly with other grade levels and maximize resources from community partners, while meeting the standards in science, social studies, and language arts.

School Administrators... to facilitate planning conversations at the school level and department or grade level about environmental education activities (school-based and field trips), and to communicate to the community about how the school is fostering environmental literacy.

Community Partners... to develop resources and opportunities for youth that align with community needs and, collectively, create a continuum of environmental education and service-learning opportunities with multiple contacts for preschool through high school.

Intended Student Outcomes

In order to emphasize the whole-student approach, the framework for the E Guidelines is structured around the metaphor of a student's heart, hands, feet, and head.



The **head** represents academic skills and knowledge. Students develop skills to investigate and think critically about natural and social concepts rooted in the academic standards. Students develop the communication skills and mathematical reasoning that

enable them to gather, analyze, interpret and share information.

The **heart** represents social-emotional learning, affective needs, sensitivity, attitudes and self-efficacy. Students develop a sense of belonging to both their local, immediate communities and the larger global community as they progress through their learning. This is seen in attitudes of sensitivity among individuals who hold awareness for an appreciation of the natural and human communities around them, and a genuine caring for others and the earth as a whole. Environmental Education fosters a sense of self, belonging, and resilience. Powerful learning experiences begin with engaging the heart.

The **hands** represent action and service. Students gain their civic voice through development of a positive sense of self and the power of their contributions to serving both natural and human communities. Through action and service, students develop the skills and abilities not only for employment but also for understanding the context of how and when to apply their skills and abilities. Students have opportunities to apply their learning in authentic situations, define a focus for projects, and envision, design, and implement those projects.

The **feet** represent connection to place. Through exploration, students gain a direct connection to the places and communities where they live. This connection engenders a sense of belonging and desire to protect and care for natural and human communities. A progression of place is based on transparent or semi-permeable walls of the classroom and connection to natural and human communities. This progression begins with home and school, then expands out through the neighborhood, community, watershed, region, nation, and world.

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Quality Environmental Education learning opportunities are rooted in all four of these dimensions.

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Principles that Inform the E Guidelines

Place- and community-based education (Smith and Sobel, 2010) allows students to reflect on their everyday environment—social, cultural, natural—as the fuel for their questions and learning then encourages real-world application of the learning in the school or surrounding community. It is an iterative process of engagement immersing students into the world experientially, typically in the form of stewardship of their places. Benefits of this comprehensive approach to schooling include academic achievement, motivation, and engagement for students and teachers (see Literature Review).

Environmental literacy is born from both academic knowledge and competencies, as well as emotional affinity, dispositions, and appreciation for natural and human communities. In teaching to these various dimensions of learning, we nurture the environmental literacy of the whole person.

E Guidelines Framework

The guidelines borrow and build from the excellent work happening across the country to deconstruct the silos that separate content and inspire learning that comes from students and teachers. This work includes the wisdom and leadership in place-based education from David Sobel, the work happening in pockets throughout the United States, and guidance from a range of visionary state environmental literacy plans, most notably Colorado and Oregon.

The process skills and content were taken directly from the Colorado Academic Standards (CAS) in science, social studies, and language arts, and the Next Generation Science Standards (NGSS)*. The scientific and engineering practices are from the Framework for K-12 Science Education from the National Academy of Sciences (2012).

The E Guidelines framework encourages opportunities for:

- creative play in natural settings and unstructured time outdoors
- citizen science
- mapmaking
- defining a simple problem based on evidence
- adventure and exploration
- empathy and humility
- constructive disagreement
- active listening
- opportunities for shared leadership
- stewardship and place-making
- opportunities to accomplish things individually and collectively

Definitions

ENVIRONMENTAL EDUCATION (EE):

an educational discipline that teaches children and adults how to learn about and investigate their environment, and to make intelligent, informed decisions about how they can take care of it. The environment is where we live, situated within an ecological context (Gruenewald, 2003), in urban, suburban, and rural settings. EE works best when it is taught in an organized sequence. In schools, EE often reflects state and national learning standards. Done right, EE not only leads to environmental literacy, but also helps increase student academic achievement. (North American Association for Environmental Education)

ENVIRONMENTAL LITERACY:

According to both the Framework for assessing environmental literacy (Hollweg, et al., 2011) and the recent report on environmental literacy in America by the National Environmental Education Foundation (2015), an environmentally literate person makes informed decisions, is willing to act on those decisions, and participates in civic life both individually and with community on behalf of the environment and the well-being of human communities.

For the purposes of the E Guidelines, environmental literacy is therefore defined as the ability to understand natural systems and ecological principles in such a way that they can be applied to sustaining human communities in balance with the earth.

District Commitments

The St. Vrain Valley School District aims to identify and implement energy efficiency and sustainability initiatives that benefit and educate the community, and strives to develop a culture of environmental literacy and stewardship in our K-12 classrooms.

The Boulder Valley School District (BVSD) is striving to have all students literate in sustainability upon graduation and all staff incorporating sustainability into their positions and practices. These E Guidelines support BVSD's values including our emphasis on addressing the intellectual growth, health and physical development, and social emotional well-being of students.

**NGSS is a registered trademark of Achieve. Neither Achieve nor the lead states and partners that developed the Next Generation Science Standards were involved in the production of this product, and do not endorse it.*

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ECE
&
KINDERGARTEN

ECE/Kindergarten Learning Objectives

We want to nurture our students' curiosity and active exploration while fostering respect for the natural world and for each other. We facilitate their basic understanding of how the natural world works and their relationship to it. We want our students to know that they have influence on the environment and community by the way they choose to care for themselves, others and places.



ECE/Kindergarten Environmental Education Guidelines

Progression of place: The appropriate scale is classroom community and home, school or schoolyard settings.

NATURAL CONCEPT

The natural world is made up of living and non-living things that can be described and categorized.

SOCIAL CONCEPT

Sequences of events and places or locations can be documented and described.

The Guidelines

Head

ACADEMIC SKILLS AND KNOWLEDGE

- Objects can be sorted by physical properties, which can be observed and measured.
- Organisms can be described and sorted by their physical characteristics.
- Ask questions, share information and discuss ideas about the past. (CAS)
- All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)
- The sun provides heat and light to Earth. [CAS and NGSS (K-PS3-1), (K-PS3-2)]



The Guidelines *(continued)*



Heart

SOCIAL-EMOTIONAL LEARNING, AFFECTIVE NEEDS, SENSITIVITY, ATTITUDES AND SELF-EFFICACY

- Nurture care and respect for living things and natural areas.
- Foster a love of the natural world by modeling curiosity, appreciation and wonder. Allow for and encourage imagination and creativity, questions and stories.
- Play in unstructured time outdoors with imagination or time to sit/walk (goal: make this part of your routine with consistency and increased frequency).
- Practice skills in active listening in whole group settings and during one-on-one interactions.
- Work together productively and collaboratively in small and whole groups for common goals and celebration of accomplishments.
- Model your thinking about how you feel when you go outside with your students (For example, “Today, when we were outside, I noticed... I felt... I thought about...”).
- Learn to rely on ourselves and on each other.
- Model and identify empathy and humility, especially in the resolution of problems.
- Learn how to disagree.



Hands

ACTION AND SERVICE

- Provide time for cooperative and social play in natural settings.
- Support a classmate—promote acts of kindness.
- Keep the playground free from trash and litter by throwing away trash.



Feet

CONNECTION TO PLACE

- Foster awareness of, and identify, local wildlife easily observed in schoolyards (birds, squirrels, insects).
- Develop understanding of our natural and cultural communities and how they extend to the school community.
- Organize field trips that get students outside the classroom to see something from a new perspective.
- Focus on the immediate surroundings (family, home, school) to the natural world beyond that scope.
- Begin to expand from the schoolyard into a local natural area (greenbelt, stream, field or BCEE partner field trip).
- Arrange for multiple encounters with an expanded place over time.



Recommended Activities

Activities listed are intended to provide inspiration for how to connect to a local natural area, or plan a field trip with a partner organization.

- Go outside in different weather conditions as appropriate—make this a regular part of your daily schedule. SC09-GR.P-S.3-GLE2, SC09-GR.K-S.3-GLE1
- Visit an outdoor place to describe and draw over the course of year to create a timeline. SS09-GR.P-S.2-GLE1, SS09-GR.P-S.1-GLE1, SS09-GR.P-S.1-GLE2
- Investigate, explore and record the different types of plants and animals in a local outdoor area (schoolyard or park). SC09-GR.P-S.2-GLE2, SC09-GR.K-S.2-GLE1
- Explore sun, shade and shadows outdoors. SC09-GR.P-S.3-GLE2, SC09-GR.K-S.3-GLE1
- Describe, sort, and categorize waste items for recycling, composting, etc. SC09-GR.P-S.3-GLE1
- Create a recycling/compost station in the classroom. SC09-GR.P-S.3-GLE1
- Care for plants and/or animals in the classroom. SC09-GR.P-S.2-GLE1
- Place bird feeders outside of classroom windows. SC09-GR.P-S.2-GLE1, SC09-GR.K-S.2-GLE1
- Provide opportunities to transfer skills learned in one context to new lessons or investigations (for example, use of tools like the hand lens—practice use indoors, then take outside to investigate). RWC09-GR.K-S.4-GLE.1
- Grow a plant or plant a garden. SC09-GR.P-S.2-GLE1
- Visit a local natural area on a field trip. RWC09-GR.K-S.4.GLE.1





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1ST GRADE

1st Grade Learning Objectives

We want to nurture our students' curiosity and active exploration while fostering respect for the natural world and each other. We facilitate their basic understanding of how the natural world works and their relationship to it. We want our students to know that they have influence on the environment and community by the way they choose to care for themselves, others, and places.



1st Grade Environmental Education Guidelines

Progression of place: The appropriate scale is classroom community and home, school or schoolyard settings.

NATURAL CONCEPT

The natural world is made up of living and non-living things that can be described and categorized.

SOCIAL CONCEPT

Sequences of events and places or locations can be documented and described.

The Guidelines

Head

ACADEMIC SKILLS AND KNOWLEDGE

- An organism has physical characteristics that help it survive.
- Patterns in the natural world can be observed. (2-ESS2-2), (2-ESS2-3)
- All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)
- Things can be sorted into categories of living, once-living (dead), and nonliving.
- Living things need food and water. They breathe, reproduce, grow and move on their own. Nonliving things do not.
- Some events have cycles, whereas other events have a clear beginning and end.
- Seasonal patterns of sunrise and sunset can be observed, described, and predicted. (1-ESS1-2)



The Guidelines *(continued)*



Heart

SOCIAL-EMOTIONAL LEARNING, AFFECTIVE NEEDS, SENSITIVITY, ATTITUDES AND SELF-EFFICACY

- Nurture care and respect for living things and natural areas.
- Foster a love of the natural world by modeling curiosity, appreciation, and wonder. Allow for and encourage imagination and creativity, questions, and stories.
- Provide unstructured time outdoors for play and imagination or time to sit/walk (goal: make this part of your routine with consistency and increased frequency).
- Practice skills in active listening in whole group settings and during one-on-one interactions.
- Work together productively and collaboratively in small and whole groups for common goals and celebration of accomplishments.
- Model your thinking about how you feel when you go outside with your students (For example, "Today, when we were outside, I noticed... I felt... I thought about...").
- Learn to rely on ourselves and on each other.
- Model and identify empathy and humility, especially in the resolution of problems.
- Learn how to disagree.



Hands

ACTION AND SERVICE

- Provide time for cooperative and social play in natural settings.
- Support students in defining a simple problem based on evidence (For example, a classroom plant is not thriving. Why not?).
- Take action to make a positive impact or solve a problem in the classroom.
- Keep the playground free from trash and litter by throwing away trash.
- Support a classmate—promote acts of kindness.



Feet

CONNECTION TO PLACE

- Foster awareness of local wildlife easily observed in schoolyards (birds, squirrels, insects) and identify as wildlife.
- Develop understanding of our natural and cultural communities and how they extend to the school community.
- Organize field trips that get students outside the classroom to see something from a new perspective.
- Provide for multiple encounters with an expanded place over time.
- Focus on the immediate surroundings (family, home, school) to the natural world beyond that scope.
- Begin to expand from the schoolyard into a local natural area (greenbelt, stream, field or partner field trip).



Recommended Activities

Activities listed are intended to provide inspiration for how to connect to a local natural area, or plan a field trip with a partner organization.

- Engage in unstructured, outdoor play or exploration in a natural area (schoolyard or park) - make this a regular part of your daily schedule (different from recess on built playground).
- Plan and carry out simple investigations using simple tools and accurate measurements. MA10-GR.1-S.4-GLE.2
- Identify shapes and patterns in the shape of leaves from different trees, shrubs, plants, and grasses around the school. MA10-GR.1-S.4-GLE.1
- Make a field guide of common schoolyard wildlife and grasses/shrubs/trees. RWC09-GR.1-S.4-GLE1&2
- Study changes through the seasons (i.e. weather, plants, etc.) with photographs and drawings. SS09-GR.1-S.1-GLE.1
- Describe, sort, and categorize waste items for recycling, composting, etc. SC09-GR.1-S.3-GLE.1
- Conduct a school or class waste audit. SC09-GR.1-S.3-GLE.1
- Care for plants and/or animals in the classroom (ongoing). SC09-GR.1-S.2-GLE.2
- Participate in a Citizen Science program.
- Provide opportunities to transfer skills learned in one context to new lessons or investigations (ex. use of tools like the hand lens - practice use indoors, then take outside to practice outdoors and investigate).





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2ND GRADE

2nd Grade Learning Objectives

We want our students to be inspired to understand that there is interdependence among animals, humans, and their environment. We want to facilitate opportunities for them to identify how problems arise when environments change, and to work with their peers to solve problems and answer questions.



2nd Grade Environmental Education Guidelines

Progression of place: The appropriate scale is school community within the local environment, with a focus on immediate surroundings.

NATURAL CONCEPT

Living things (including humans) meet their needs from their environment.

SOCIAL CONCEPT

Communities depend upon and make choices about resources.

The Guidelines

Head

ACADEMIC SKILLS AND KNOWLEDGE

- A habitat includes food, water, shelter and space in a particular arrangement that meets the needs of the plants or animals living there.
- Organisms depend on their habitats' nonliving parts to satisfy their needs.
- Each plant or animal has different structures or behaviors that serve different functions.
- Weather and the changing seasons impact the environment and organisms such as humans, plants, and other animals.
- People in communities manage, modify, and depend on their environment.
- Maps show where things are located. One can map the shapes and kinds of land and water in any area.
- Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (2-ESS2-3)
- Patterns in the natural world can be observed. (2-ESS2-2), (2-ESS2-3)
- Learning can happen through observation including that of simple shapes, colors, and patterns.



The Guidelines *(continued)*



Heart

SOCIAL-EMOTIONAL LEARNING, AFFECTIVE NEEDS, SENSITIVITY, ATTITUDES AND SELF-EFFICACY

- Nurture care and respect for living things and natural areas.
- Foster a love of the natural world by modeling curiosity, appreciation, and wonder. Allow for and encourage imagination and creativity, questions, and stories.
- Provide unstructured time outdoors for play and imagination or time to sit/walk (goal: make this part of your routine with consistency and increased frequency).
- Practice skills in active listening in whole group settings, and during one-on-one interactions.
- Work together productively and collaboratively in small and whole groups for common goals and celebration of accomplishments.
- Model your thinking about how you feel when you go outside with your students. (For example, “Today, when we were outside, I noticed... I felt... I thought of...”).
- Learn to rely on ourselves and on each other.
- Model and identify empathy and humility, especially in the resolution of problems.
- Learn how to disagree.



Hands

ACTION AND SERVICE

- Provide time for cooperative and social play in natural settings.
- Support a classmate—promote acts of kindness.
- Facilitate students in defining a simple problem based on evidence (For example, a classroom plant is not thriving. Why not?).
- Take action to make a positive impact or solve a problem in the classroom.
- Keep the playground free from trash and litter.
- Complete a project to improve the school or schoolyard.



Feet

CONNECTION TO PLACE

- Build appreciation of, and familiarity with, surroundings—natural and built, including wildlife, people, plants, and neighborhood structures (streets, buildings).
- Foster understanding of our natural and cultural communities and how they extend from the school community to the local scale.
- Organize field trips that get students outside the classroom to see something from a new perspective.
- Provide for multiple encounters with a place over time.



Recommended Activities

Activities listed are intended to provide inspiration for how to connect to a local natural area, or plan a field trip with a partner organization.



- Engage in outdoor play in a natural area (schoolyard or park). Play with the students. Make this a regular part of your daily schedule.
- Grow a plant or plant a garden.
- Investigate nonliving needs of plants (sun, water, soil). SC09-GR.2-S.2-GLE1
- Plan and conduct an investigation to determine if plants need sunlight and water to grow. RWC09-GR.2-S.4-GLE2, SC09-GR.2-S.2-GLE1
- Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. SC09-GR.2-S.2-GLE2
- Observe and journal about one plant in the garden over time. (For example, watch for pollination and investigate behaviors and what function it serves, and describe how plants are impacted by seasons and weather.) SC09-GR.2-S.2-GLE1, SC09-GR.2-S.3-GLE1
- Dissect a plant when it is mature to see basic structures and relate to functions. SC09-GR.2-S.2-GLE1
- Make observations of plants and animals to compare the diversity of life in different habitats. SS09-GR.2-S.2-GLE1
- Write a story/poem about connection with a special plant or animal. RWC09-GR.2-S.3-GLE1
- Conduct a photo study of a site over time. SC09-GR.2-S.2-GLE1, SS09-GR.2-S.2-GLE1
- Visit a local natural area on a field trip.
- Engage in senses through a silent hike or sit spot.
- Explore diversity of life in an ecosystem through observation and collection.
- Highlight one plant and one animal that can be found in an ecosystem to talk about structure and behaviors that serve a function. SC09-GR.2-S.2-GLE1
- Discuss resources available and human impact on the area. RWC09-GR.2-S.1-GLE1, SS09-GR.2-S.2-GLE2



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3RD GRADE

3rd Grade Learning Objectives

We want our students to be inspired to understand that there is interdependence among animals, humans, and their environment. We want to facilitate opportunities for them to identify how problems arise when environments change, and to work with their peers to solve problems and answer questions.



3rd Grade Environmental Education Guidelines

Progression of place: The appropriate scale is neighborhood community within the watershed and regional environment.

NATURAL CONCEPT

Cycles and change are important processes in nature (life cycles, rock cycle, water cycle).

SOCIAL CONCEPT

Geographic tools can be used to understand our region's watershed (mapping).

The Guidelines

Head

ACADEMIC SKILLS AND KNOWLEDGE

- Physical and behavioral adaptations of living things affect their ability to survive, reproduce, and adapt to changes in the environment.
- Structures in animals and plants serve functions of growth, survival, behavior, and reproduction.
- Earth's materials can be broken down and/or combined into different materials such as rocks, minerals, soil, and sand—some of which are usable resources for human activity.
- Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1)
- Cause and effect relationships are routinely identified, tested, and used to explain change. (3-ESS3-1)
- Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (3-ESS2-2)
- A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1)
- Observable phenomena exist from very short to very long time periods. (3-LS4-1)



The Guidelines *(continued)*



Heart

SOCIAL-EMOTIONAL LEARNING, AFFECTIVE NEEDS, SENSITIVITY, ATTITUDES AND SELF-EFFICACY

- Nurture care and respect for living things and natural areas.
- Ask and record questions about what draws the students' attention and create space for students to find their own answers.
- Make time for, and model awareness and observation during time outdoors including play, quiet time, and reflection (goal: make this part of your routine with consistency and increased frequency).
- Build community and interpersonal skills like active listening within the classroom.
- Work productively and collaboratively, both independently and as a member of a small group or team. Identify clear purpose for group/team work and outcomes.
- Discuss feelings and connections that students have and make when they are outside. Model self-reflection.
- Learn to rely on ourselves and on each other.
- Model and identify empathy and humility.
- Foster openness to new opportunities, ideas, and ways of thinking.
- Learn how to disagree.



Hands

ACTION AND SERVICE

- Create time for cooperative and social play in natural settings.
- Support a classmate—promote acts of kindness.
- Define more complex problems, based on evidence, in the school.
- Take action to make a positive impact or solve a problem in the school.
- Allow for place-making opportunities for students to design and have a voice in the school community.



Feet

CONNECTION TO PLACE

- Build appreciation of, and familiarity with, surroundings—natural and built, including wildlife, people, plants, and neighborhood structures (streets, buildings).
- Develop understanding of our natural and cultural communities that extend from the school community to the local scale.
- Organize field trips that get students outside the classroom to see something from a new perspective.
- Allow for multiple encounters with an expanded place over time.
- Provide outdoor opportunities for students to be adventurous, imaginative, and quiet, both with and without academic tasks to accomplish.
- Encourage exploration of nature in connected green spaces, open spaces, and parks.
- Begin to expand from the schoolyard into a local natural area (greenbelt, stream, field or partner field trip).



Recommended Activities

Activities listed are intended to provide inspiration for how to connect to a local natural area, or plan a field trip with a partner organization.

- Provide for self-guided time outside daily - make this a regular part of your daily schedule.
- Take walks through the schoolyard or neighboring areas (naturalized or not) to record changes over time and questions about observations. SS09-GR.4-S.2-GLE1
- Explore a local natural habitat to identify flora, fauna, and signs of wildlife.
- Engage in gardening and habitat improvement.
- Compare/contrast regional animal/ecosystems communities to human communities. SS09-GR.3-S.2-GLE2
- Conduct seasonal comparisons of local natural/human environments and the activities of wildlife and people in the community.
- Follow the life cycle of a common product (i.e., paper, plastic, aluminum) from manufacturing to use to recycling and visit a recycling/waste management facility SC09-GR.3-S.3-GLE1
- Observe the life cycles of classroom animals and plants including ladybugs, painted lady butterflies, silk moths, meal worms, and Wisconsin Fast Plants (rapid radish/brassica). SC09-GR.3-S.2-GLE1
- Participate in a Citizen Science program.
- Provide opportunities to transfer skills learned in one context to new lessons or investigations (ex. use of tools like the hand lens - practice use indoors, then take outside to investigate) SS09-GR.3-S.2-GLE1, SS09-GR.4-S.2-GLE1





GUIDELINES

BOULDER COUNTY ENVIRONMENTAL EDUCATION GUIDELINES
DEVELOPED BY THE BOULDER COUNTY E MOVEMENT

4TH GRADE

4th Grade Learning Objectives

We want our students to be inspired to understand, and have knowledge of, their local ecosystems. We want to facilitate opportunities for them to be stewards of their local communities and competent investigating their own questions so that they may practice forming solutions to problems.



4th Grade Environmental Education Guidelines

Progression of place: The appropriate scale is neighborhood community within the watershed and regional environment.

NATURAL CONCEPT

There is interaction and interdependence among living and nonliving components of systems.

SOCIAL CONCEPT

There is interaction and interdependence among human and natural systems.

The Guidelines

Head

ACADEMIC SKILLS AND KNOWLEDGE

- Ecology and the connection between the shape of the land and availability of resources affect human settlement in Colorado.
- Relationships exist among ecosystems, human systems, weather and climate in Colorado.
- A system can be described in terms of its components and their interactions.
- Sustainability includes the health and wellness of people, the environment, and the economy.
- Structure, function, interaction, and change are major themes in living and non-living systems.
- Over time, people's needs and wants change, as do their demands for new and improved technologies, and engineers improve existing technologies or develop new ones. (4-PS3-4)
- Patterns can be used as evidence to support an explanation; Science assumes consistent patterns in natural systems. (4-ESS1-1)



The Guidelines *(continued)*



Heart

SOCIAL-EMOTIONAL LEARNING, AFFECTIVE NEEDS, SENSITIVITY, ATTITUDES AND SELF-EFFICACY

- Nurture care and respect for living things and natural areas.
- Ask and record questions about what draws the students' attention, and create space for students to find their own answers.
- Make time for and model awareness and observation during time outdoors including play, quiet, and reflection (goal: make this part of your routine with consistency and increased frequency).
- Build community and interpersonal skills like active listening within the classroom.
- Work effectively as a group and respect differences in opinion while working toward common solutions.
- Discuss feelings and connections students have and make when they are outside. Model self-reflection.
- Learn to rely on ourselves and on each other.
- Model and identify empathy and humility.



Hands

ACTION AND SERVICE

- Provide for unstructured time outdoors, ideally in a natural setting.
- With student input, take action to promote positive change in the schoolyard.
- Define more complex problems, based on evidence, in the school. Take action to make a positive impact or solve a problem in the school.
- Provide opportunities for shared leadership in which students identify, research, and propose a solution to an issue within the classroom or the school.
- Allow for place-making opportunities for students to design and have a voice in the school community.



Feet

CONNECTION TO PLACE

- Build appreciation for the connections of natural and built aspects of the community by naming them, observing them, and asking questions.
- Understand how our natural and cultural communities extend to the local and regional (including statewide) scale.
- Organize field trips that get students outside the classroom to see something from a new perspective.
- Provide for multiple encounters with an expanded place over time.
- Experience a variety of natural environments—including each major life zone of Colorado.
- Facilitate opportunities for students to choose outdoor recreation experiences including backpacking, hiking, rafting/kayaking/paddleboarding AND/OR opportunities for students to choose outdoor experiences in naturalizing, botany, entomology, ornithology, etc.
- Explore nature in connected green spaces, open spaces, and parks in both wilderness areas AND in urban areas.
- Begin to expand from the schoolyard into a local natural area (greenbelt, stream, field or BCEE partner field trip).



Recommended Activities

Activities listed are intended to provide inspiration for how to connect to a local natural area, or plan a field trip with a partner organization.



- Provide for self-guided time outside daily - make this a regular part of your daily schedule.
- Take walks through the schoolyard or neighboring areas (naturalized or not) to record changes over time and questions about observations. SS09-GR.4-S.2-GLE1
- Explore a local natural habitat to identify flora, fauna, and signs of wildlife.
- Engage in gardening and habitat improvement.
- Compare/contrast regional animal/ecosystems communities to human communities. SS09-GR.3-S.2-GLE2
- Conduct seasonal comparisons of local natural/human environments and the activities of wildlife and people in the community.
- Follow the life cycle of a common product (i.e., paper, plastic, aluminum) from manufacturing to use to recycling and visit a recycling/waste management facility SC09-GR.3-S.3-GLE1
- Observe the life cycles of classroom animals and plants including ladybugs, painted lady butterflies, silk moths, meal worms, and Wisconsin Fast Plants (rapid radish/brassica). SC09-GR.3-S.2-GLE1
- Participate in a Citizen Science program.
- Provide opportunities to transfer skills learned in one context to new lessons or investigations (ex. use of tools like the hand lens - practice use indoors, then take outside to investigate) SS09-GR.3-S.2-GLE1, SS09-GR.4-S.2-GLE1





GUIDELINES

BOULDER COUNTY ENVIRONMENTAL EDUCATION GUIDELINES
DEVELOPED BY THE BOULDER COUNTY E MOVEMENT



5th Grade Learning Objectives

We want our students to be inspired to understand, and have knowledge of, their local ecosystems. We want to facilitate opportunities for them to be stewards of their local communities and competent investigating their own questions so that they may practice forming solutions to problems.



5th Grade Environmental Education Guidelines

Progression of place: The appropriate scale is regional community and environment placed in national context.

NATURAL CONCEPT

Earth and Sun provide diverse renewable and nonrenewable resources.

SOCIAL CONCEPT

People choose to move to new regions for different reasons, and their movement has a variety of benefits and consequences.

The Guidelines

Head

ACADEMIC SKILLS AND KNOWLEDGE

- Structure, function, and relationships exist among human systems and the environment.
- Sustainability includes the health and wellness of people, the environment, and the economy.
- Explore the use of renewable/nonrenewable resources and their impacts.
- Explore why people choose to move from one area to another and the consequences that movement has for social and natural environments.
- Production, consumption and consumer choices affect the economy.
- Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. (MS-LS1-3)
- Human activities can deliberately or inadvertently alter ecosystems and their resiliency.
- Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space; and individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)



The Guidelines *(continued)*



Heart

SOCIAL-EMOTIONAL LEARNING, AFFECTIVE NEEDS, SENSITIVITY, ATTITUDES AND SELF-EFFICACY

- Nurture care and respect for living things and natural areas.
- Ask and record questions about what draws the students' attention, and create space for students to find their own answers.
- Make time for and model awareness and observation during time outdoors including play, quiet, and reflection (goal: make this part of your routine with consistency and increased frequency).
- Model and identify empathy and humility.
- Build community and shared purpose within the classroom, school, and community.
- Work effectively as a group and respect differences in opinion while working toward common solutions.
- Discuss feelings and connections students have and make when they are outside. Model self-reflection.
- Help students learn to rely on themselves and on each other.



Hands

ACTION AND SERVICE

- Provide unstructured time outdoors, ideally in a natural setting.
- Support students in defining more complex problems, based on evidence, in the school. Take action to make a positive impact or solve a problem in the school.
- Provide opportunities for shared leadership in which students identify, research, and propose a solution to an issue within the classroom or the school.
- Allow for place-making opportunities for students to design and have a voice in the school community.
- Design and evaluate solutions for reducing the impacts of community environmental hazards and issues (for example, creating a "No Idle Zone" in the school's drop-off/pick-up area, encouraging parents to turn off their car engine while waiting.)
- With student input, take action to promote positive change in the schoolyard.



Feet

CONNECTION TO PLACE

- Build appreciation for the connections of natural and built aspects of the community and region by naming them, observing them, and asking questions.
- Promote understanding that our natural and cultural communities extend to the regional and national scale.
- Organize field trips that get students outside the classroom to see something from a new perspective.
- Provide multiple encounters with an expanded place over time.
- Experience a variety of natural environments.
- Facilitate opportunities for students to choose outdoor recreation experiences including backpacking, hiking, rafting, kayaking, paddleboarding and/or opportunities for students to choose outdoor experiences in ecology, botany, entomology, ornithology, etc.



Recommended Activities

Activities listed are intended to provide inspiration for how to connect to a local natural area, or plan a field trip with a partner organization.

- Provide self-guided time outside regularly - make this a regular part of your schedule.
- Walks through the school-yard or neighboring areas (naturalized or not) to record changes over time and questions about observations.
- Research resources in Colorado and causes and consequences of resource use and human movement. SS09-GR.5-S.2-GLE.2
- Take a real or virtual fieldtrip to a mine, managed forest, agricultural facility, energy facility, water treatment plant. SC09-GR.5-S.3-GLE.1
- Conduct a water or energy audit.
- Provide opportunities for leadership of school's composting program including student leaders to help school's students discard lunch waste. SS09-GR.5-S.4-GLE.1
- Conduct investigations using stream tables to document changes in landforms. SC09-GR.5-S.3-GLE.2
- Lead a school clean-up day or gardening day. Investigate native plants, irrigation, and soil conditions to design and build a small xeric flower garden.
- Engage in Citizen Science. (see resources for grade-appropriate examples) MA10-GR.5-S.3-GLE.1, RWC09-GR.5-S.4-GLE.1
- Provide opportunities to transfer skills learned in one context to new lessons or investigations (ex. use of tools like the hand lens - practice use indoors, then take outside to investigate).
- Create a terrarium in a bottle – set up experiments to test fertilizers, water amounts, soil types, etc.
- Investigate the natural and human history of Rocky Flats. SC09-GR.5-S.3-GLE.2, SS09-GR.5-S.2-GLE.1



GUIDELINES

BOULDER COUNTY ENVIRONMENTAL EDUCATION GUIDELINES
DEVELOPED BY THE BOULDER COUNTY E MOVEMENT

MIDDLE
SCHOOL
(GRADES 6-8)

Middle School (Grades 6-8) Learning Objectives

We want our students to be inspired to be gaining a sense of self in their natural and human communities, including their impact on others in those systems. We want to facilitate opportunities for them to discuss ideas, take in multiple perspectives, back up personal opinions with evidence, and distinguish between opinion and fact.



Middle School (Grades 6-8) Environmental Education Guidelines

Progression of place: The scale expands from the schoolyard into a local natural area (greenbelt, stream, or field) and into larger contexts (regional, state, national) with multiple encounters with an expanded place over time.

NATURAL CONCEPT

Matter cycles within ecosystems and energy flows through it. These processes happen at both a local and a global scale, and humans can impact these processes.

SOCIAL CONCEPT

Human and physical systems vary and interact, and human systems at different scales (community, region, nation, etc.) are interconnected.

The Guidelines

Head

ACADEMIC SKILLS AND KNOWLEDGE

- Structure, function and relationships exist among human systems, the environment, and sustainability.
- Humans and their environments are interdependent.
- Consumption and consumer choices affect the economy.
- Human activities can deliberately or inadvertently alter ecosystems and their resiliency.
- Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. (MS-LS1-3)
- In evaluating solutions, one should take into account a range of constraints including cost, safety, reliability and aesthetics and to consider social, cultural and environmental impacts. (Secondary to HS-LS2-7)



Heart

SOCIAL-EMOTIONAL LEARNING, AFFECTIVE NEEDS, SENSITIVITY, ATTITUDES AND SELF-EFFICACY

- Allow for appreciative inquiry—students have the time and space to notice what is interesting and curious to them in natural areas, local and urban areas, and in wilderness.
- Ask and record questions about what draws the students' attention, and create space for students to find their own answers.



- Make time for and model awareness and observation during time outdoors including recording observations, quiet, and reflection (goal: make this part of your routine with consistency and increased frequency).
- Build community and shared purpose within the classroom, school, and community.
- Question prevailing assumptions.
- Work effectively as a group and respect differences in opinion while working toward common solutions.
- Model and identify empathy and humility.
- Foster openness to new opportunities, ideas, and ways of thinking.
- Foster value for multiple perspectives including those that are different or opposed, and create opportunities for debate and disagreement in a productive forum.
- Create self-awareness about identity and culture with sensitivity and respect for differences.
- Create opportunities for older students to mentor younger students.

Hands

ACTION AND SERVICE

- Provide unstructured time outdoors, ideally in a natural setting.
- Provide opportunities for students to mentor and participate with younger students in unstructured time outdoors.
- With student input, take action to promote positive change in a local ecosystem.
- Support students in defining more complex problems, based on evidence, in the school.
- Take action to make a positive impact or solve a problem in the school.
- Support students to translate ideas, concerns, and findings into appropriate and responsible individual or collaborative actions to make a positive change.
- Assist students to establish need for service-learning projects, and allow them to envision, design, and implement those projects.
- Facilitate students adopting shared responsibility and taking cooperative action.
- Allow for place-making opportunities for students to design and have a voice in the school community.
- Facilitate opportunities for individual students to apprentice or volunteer for local professionals in fields related to sustainability (for example, trail maintenance crew, assistant in educational program, photography, bird count).



Feet

CONNECTION TO PLACE

- Build appreciation for the connections of natural and built aspects of the community, region and nation.
- Foster understanding that our natural and cultural communities extend to the regional, national and global scale.
- Organize field trips that get outside the classroom to see something from a new perspective.
- Provide multiple encounters with an expanded place over time.
- Experience a variety of natural environments.
- Facilitate opportunities for students to choose outdoor recreation experiences including backpacking, hiking, rafting, kayaking, paddleboarding and/or opportunities for students to choose outdoor experiences in ecology, botany, entomology, ornithology, etc.
- Explore nature in connected green spaces, open spaces, and parks in both wilderness areas and in urban areas.



Recommended Activities

Activities listed are intended to provide inspiration for how to connect to a local natural area, or plan a field trip with a partner organization.

- Design, plan, and implement a school garden for younger students. SC09-GR.6-S.2-GLE.1
- Restore native habitat in a local park, green-belt, stream channel, or area flagged by a local land management agency. SC09-GR.6-S.2-GLE.2, SC09-GR.8-S.2-GLE.1
- Provide frequent, self-guided time outside—make this a regular part of your schedule.
- Take walks through the schoolyard or neighboring areas (naturalized or not) to record changes over time and questions about observations.
- Investigate energy use and the global carbon cycle, and take action to implement sustainable energy use practices. RWC09-GR.6-S.4-GLE.1, SC09-GR.6-S.2-GLE.1
- Take a real or virtual field trip to a regional natural area within a different life zone to compare and contrast with the life zone local to the school. SC09-GR.6-S.2-GLE.1
- Take field trips to a power plant, wind farm and/or dam—compare the design, production, and social, economic, and environmental impacts of each. SC09-GR.6-S.3-GLE.3, SS09-GR6-S.2-GLE.2, SC09-GR.8-S.2-GLE.1
- Analyze national and global weather data over time. MA10-GR.6-S.3-GLE.1, SC09-GR.8-S.3-GLE.1, SC09-GR.8-S.2-GLE.2
- Investigate, explore and record the different types of plants and animals in a variety of local outdoor areas within the county or, specifically, the Colorado Front Range. Discuss how these plants and animals are uniquely adapted to their habitats through the process of evolution. SC09-GR.6-S.2-GLE.1, SC09-GR.7-S.2-GLE.1
- Explore the diversity of microscopic life in samples of water collected from different natural water sources within the county, including the cellular structure and the relationship between these microscopic organisms and the overall health of the ecosystem. SC09-GR.6-S.2-GLE.1
- Research and report on agricultural practices. Develop models of the main practices producing food and compare the impacts on land and other resource use (for example, investigate the positive and negative impacts of growing crops using artificial light to reduce transportation costs and make certain crops available year-round). RWC09-GR.6-S.4-GLE.1, RWC09-GR.6-S.4-GLE.2, SC09-GR.6-S.2-GLE.1, SS09-GR6-S.2-GLE.2, SC09-GR.8-S.2-GLE.1
- Research the government agencies and other organizations that influence how land is used in the county. If possible, investigate a proposed change in local land use, the process for making decisions about the changes, and any local organizations advocating for specific positions. RWC09-GR.6-S.4-GLE.1, RWC09-GR.6-S.4-GLE.2, RWC09-GR.8-S.4-GLE.3, SC09-GR.6-S.2-GLE.1, SS09-GR6-S.2-GLE.2, RWC09-GR.7-S.4-GLE.1, RWC09-GR.8-S.4-GLE.2, SS09-GR8-S.2-GLE.2, SC09-GR.8-S.2-GLE.1
- Engage in Citizen Science. MA10-GR.5-S.3-GLE.1
- Collect data or research an issue in order to communicate different perspectives; hold a mock community forum or debate assigning roles to each student. RWC09-GR.6-S.4-GLE.1, RWC09-GR.6-S.4-GLE.2, RWC09-GR.7-S.4-GLE.3, RWC09-GR.7-S.4-GLE.2, SS09-GR7-S.2-GLE.2, SS09-GR8-S.2-GLE.2, SC09-GR.8-S.2-GLE.1, RWC09-GR.8-S.4-GLE.1
- Create opportunities to transfer skills learned in one context to new lessons or investigations. (for example, use tools like the hand lens—practice use indoors, then take outside to investigate)



GUIDELINES

BOULDER COUNTY ENVIRONMENTAL EDUCATION GUIDELINES
DEVELOPED BY THE BOULDER COUNTY E MOVEMENT

HIGH
SCHOOL
(GRADES 9-12)

High School (Grades 9-12) Learning Objectives

We want our students to be inspired to be life-long learners, stewards, and enthusiasts of the natural world. We want to prepare them to make informed decisions that consider the economic, social and environmental impacts of issues by using credible evidence.



High School (Grades 9-12) Environmental Education Guidelines

Progression of place: The scale expands from the schoolyard into a local natural area (greenbelt, stream, field) and into larger contexts (regional, state, national, global) with multiple encounters with/in an expanded place over time.

NATURAL CONCEPT

Sustainability involves a complex interaction of social, economic, ecological, and political systems.

SOCIAL CONCEPT

Individual and collective action can have implications for sustainability at both the local and global scale.

The Guidelines

Head

ACADEMIC SKILLS AND KNOWLEDGE

- World events and global issues are complex and interdependent.
- One's own culture and history is key to understanding one's relationship to others.
- Multiple conditions fundamentally affect diverse global forces, events, conditions, and issues.
- The current world system is shaped by historical forces.
- When evaluating solutions, it is important to take into account a range of constraints including cost, safety, reliability, and aesthetics and to consider social, cultural, and environmental impacts.



Heart

SOCIAL-EMOTIONAL LEARNING, AFFECTIVE NEEDS, SENSITIVITY, ATTITUDES AND SELF-EFFICACY

- Allow for appreciative inquiry—students have the time and space to notice what is interesting and curious to them in local and urban natural areas, and in wilderness.
- Ask and record questions about what draws the students' attention, and create space for students to find their own answers.



- Make time for and model awareness and observation during time outdoors including recording observations, quiet, and reflection (goal: make this part of your routine with consistency and increased frequency).
- Promote openness to new opportunities, ideas, and ways of thinking.
- Foster value for multiple perspectives, including those that are different or opposed.
- Develop self-awareness about identity and culture with sensitivity and respect for differences.
- Create opportunities for older students to mentor younger students.
- Question prevailing assumptions.
- Model and identify empathy and humility.
- Foster self-awareness about identity and culture with sensitivity and respect for differences.



Hands

ACTION AND SERVICE

- Mentor and participate with younger students in unstructured time outdoors.
- Foster place-making abilities—students have a participatory role in decisions made regarding their community, including policy, design, and improvements.
- Students translate ideas, concerns, and findings into appropriate and responsible individual or collaborative actions to improve conditions.
- Students establish need for service-learning projects, and envision, design, and implement those projects.
- Students adopt shared responsibility and take cooperative action.
- Students seek out and apply understanding of different perspectives to problem-solving and decision-making.
- Create opportunities for individual students to apprentice or volunteer for local professionals in fields related to sustainability (for example, trail maintenance crew, assistant in educational program, photography, bird count).



Feet

CONNECTION TO PLACE

- Explore the local, regional, and national communities in the context of the global scale. Build appreciation for the connections of natural and built aspects of the community, region, nation, and world.
- Understand that our natural and cultural communities extend to the global scale.
- Organize field trips that get students outside the classroom to see something from a new perspective.
- Provide multiple encounters with an expanded place over time.
- Experience a variety of natural environments on a broadening scale (local to regional to national to global).
- Create opportunities for students to choose outdoor recreation experiences including backpacking, hiking, rafting, kayaking, paddleboarding and/or opportunities for students to choose outdoor experiences in ecology, botany, entomology, ornithology, etc.
- Explore nature in connected green spaces, open spaces, and parks in both wilderness areas and in urban areas.



Recommended Activities

Activities listed are intended to provide inspiration for how to connect to a local natural area, or plan a field trip with a partner organization.

- Plan for short walks through natural areas, or breaks under the trees on school grounds before or after test taking, high-pressure events, or as a regular part of the weekly schedule. CH09-GR.HS-S.3-GLE2
- Research a political issue or proposed political action in sustainability that cuts across social, economic, and ecological systems, and analyze the pros and cons. SS09-GR.HS-S.2-GLE.3, SS09-GR.HS-S.3-GLE.1, RWC09-GR.HS-S.4-GLE1
- Connect with sustainability efforts in another country, develop a culturally proficient understanding of the issue and context, and seek appropriate ways to support efforts. RWC09-GR.HS-S.4-GLE1
- Participate in a debate representing diverse stakeholders in a contentious issue. Hold a mock debate and assign stakeholder roles to students to research and represent. RWC09-GR.HS-S.4-GLE2, RWC09-GR.HS-S.4-GLE1
- Partner with an elementary school to implement a school garden or natural area. SC09-GR.HS-S.2-GLE.2
- Raise fish in the classroom. <move to resources (Trout Unlimited)> SC09-GR.HS-S.2-GLE.2
- Engage in Citizen Science SS09-GR.HS-S.3-GLE.2
- Care for living things or natural areas.
- Take action to make a positive impact or solve a problem. SS09-GR.HS-S.4-GLE.1, PE09-GR.HS-S.3-GLE2
- Assess and evaluate current human impacts. SS09-GR.HS-S.2-GLE.2
- Experience a variety of natural environments.



GUIDELINES

Appendix



E Guidelines Adoption Form

ECE-5th Grade

INTENTIONS AT THIS GRADE LEVEL:

Each teacher, grade-level team or department adopting these guidelines should complete the following with their intended activities for the year. Your actual activities may shift or expand as the year progresses. These activities may be field-based or classroom-based as appropriate. The recommended activities and resources may be used to complete this intended plan.

We will spend _____ minutes outside each week.

We will visit the following natural outdoor space(s):

As a result of adopting these guidelines, one thing we intend to change about our practice is:

Initial thoughts about opportunities to integrate heart, hands, feet and head (see recommended activities at the end of your grade level chapter). Please list one or more thoughts in each space.

Opportunities to focus on Heart: _____

Opportunities to focus on Hands: _____

Opportunities to focus on Feet: _____

Opportunities to focus on Head: _____

E Guidelines Adoption Form

Middle School and High School

INTENTIONS AT THE HIGH SCHOOL LEVEL:

Each teacher, department, or school adopting these guidelines should complete the following with their intended activities for the year. Your actual activities may shift or expand as the year progresses. These activities may be field-based or classroom-based as appropriate. The recommended activities and resources listed at the end of your grade level chapter may be used to complete this intended plan.

How do you maximize time outside during the school day?

Please list the natural outdoor space(s) or other places related to environmental education that you plan to visit in the upcoming year and how frequently you plan to visit these spaces:

As a result of adopting these guidelines, one thing we intend to change about our practice is:

Initial thoughts about opportunities to integrate heart, hands, feet and head (see recommended activities above). Using the table on the next page, please describe the course offerings, instructional units and activities you plan to implement that address the Environmental Education Guidelines for Boulder County. In your description for each activity, please note which of the four dimensions (heart, hands, feet, head) is addressed. You may also list extracurricular activities in this table. You do not need to list every unit and every activity, just some good examples. Heart, Hands, Feet and Head should all be checked at least once in your overall table. The first three rows are examples.



E GUIDELINES

Course Title or Student Group	Instructional Unit	Activity	Head	Heart	Hands	Feet
Net Zero Environmental Club	N/A	Student group that meets regularly to collaboratively plan and implement sustainable practices on campus and within the community		X	X	
Physics	Energy	Research the sustainability of electric cars and engage in a debate in which they argue whether electric cars or internal combustion cars are more sustainable.	X			
Biology	Ecology	Students make multiple visits to a creek or pond near the school to collect data on the organisms that live there and water chemistry				X



GUIDELINES

Course Title or Student Group	Instructional Unit	Activity	Head	Heart	Hands	Feet

Continuum of the E Guidelines

ECE/Kindergarten

We nurture our students' curiosity while fostering respect for the natural world and for each other. We help improve their basic understandings of nature and their relationships to it. We teach our students that they can influence their environments and their communities by the way they choose to care for themselves, for others and for natural places.

NATURAL CONCEPTS

The natural world is made up of living and non-living things that can be described and categorized.

SOCIAL CONCEPTS

Sequences of events and places or locations can be documented and described.

PROGRESSION OF PLACE

The appropriate scale is classroom community and home, school or schoolyard settings.

1st Grade

We nurture our students' curiosity while fostering respect for the natural world and for each other. We help improve their basic understandings of nature and their relationships to it. We teach our students that they can influence their environments and their communities by the way they choose to care for themselves, for others and for natural places. Describe and categorize; Cause and effect; Empathy

NATURAL CONCEPTS

The natural world is made up of living and non-living things that can be described and categorized.

SOCIAL CONCEPTS

Sequences of events and places or locations can be documented and described.

PROGRESSION OF PLACE

The appropriate scale is classroom community and home, school or schoolyard settings.

2nd Grade

We nurture our students' curiosity while fostering respect for the natural world and for each other. We help improve their basic understandings of nature and their relationships to it. We teach our students that they can influence their environments and their communities by the way they choose to care for themselves, for others and for natural places. All living things, plants, animals (including humans) meet needs from the environment and humans must make choices about how needs are met.

NATURAL CONCEPTS

Living things, including humans, meet their needs from their environments.

SOCIAL CONCEPTS

Communities depend upon and make choices about resources.

PROGRESSION OF PLACE

The appropriate scale is the school community and its local environment, with a focus on immediate surroundings.

3rd Grade

We want our students to be inspired to understand that there is interdependence among animals, humans, and their environments. We want to facilitate opportunities for them to identify how problems sometimes arise when environments change and to work with their peers to solve problems and answer questions.

NATURAL CONCEPTS

Cycles and change are important processes in nature—examples include life cycles, the rock cycle, and the water cycle.

SOCIAL CONCEPTS

Geographic tools can be used to understand our region's watershed, for example, with mapping.

PROGRESSION OF PLACE

The appropriate scale includes the neighborhood, the local community, the watershed, and the regional environment.

4th Grade

We want our students to be inspired to understand and have knowledge of their local ecosystems. We want to facilitate opportunities for them to be stewards of their local communities and competent investigating their own questions so that they may practice forming solutions to problems.

NATURAL CONCEPTS

There is interaction and interdependence among living and nonliving components of systems.

SOCIAL CONCEPTS

There is interaction and interdependence among human and natural systems.

PROGRESSION OF PLACE

The appropriate scale includes the neighborhood, the local community, the watershed, and the regional environment.

5th Grade

We want our students to be inspired to understand and have knowledge of their local ecosystems. We want to facilitate opportunities for them to be stewards of their local communities and competent investigating their own questions so that they may practice

forming solutions to problems. How needs are met with renewable and nonrenewable resources; Humans manipulate conditions to make them livable, which is dependent on resources and energy

NATURAL CONCEPTS

Earth and sun provide diverse renewable and nonrenewable resources.

SOCIAL CONCEPTS

People choose to move to new regions for different reasons, and their movement has a variety of benefits and consequences.

PROGRESSION OF PLACE

The appropriate scale is the regional community and environment, placed in a national context.

Middle School

We want our students to be inspired and gain a sense of self in their natural and human communities, including their impacts on others in those systems. We want to facilitate opportunities for them to discuss ideas, take in multiple perspectives, back up personal opinions with evidence, and distinguish between opinion and fact.

NATURAL CONCEPTS

Matter cycles within ecosystems and energy flows through them. These processes happen at both a local and a global scale, and humans can impact these processes.

SOCIAL CONCEPTS

Human and physical systems vary and interact, and human systems at different scales (community, region, nation, etc.) are interconnected.

PROGRESSION OF PLACE

The appropriate scale continues to expand from the schoolyard into a local natural area (greenbelt, stream, field or BCEE partner field trip) and into larger contexts (regional, state, national, global), including multiple encounters with an expanded place over time. Students explore the local community to watershed to regional environment within global community.

High School

We want our students to be inspired to be life-long learners, stewards, and enthusiasts of the natural world. We want to prepare them to make informed decisions that consider the economic, social, and environmental impacts of issues using credible evidence.

NATURAL CONCEPTS

Sustainability involves a complex interaction of social, economic, ecological, and political systems.

SOCIAL CONCEPTS

Individual and collective action can have implications for sustainability at both the local and global scale.

GUIDELINES

PROGRESSION OF PLACE

The appropriate scale continues to expand from the schoolyard into a local natural area (greenbelt, stream, field or BCEE partner field trip) and into larger contexts (regional, state, national, global), with multiple encounters in an expanded place over time.