



# GUIDELINES

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

# 4<sup>TH</sup> 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



# 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):

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

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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: \_\_\_\_\_

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Opportunities to focus on Hands: \_\_\_\_\_

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Opportunities to focus on Feet: \_\_\_\_\_

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Opportunities to focus on Head: \_\_\_\_\_

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## 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.

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## **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.