



# **OUTDOOR AND ENVIRONMENTAL EDUCATION IN COLORADO SPRINGS SCHOOL DISTRICT 11**

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### Definition of Outdoor and Environmental Education

Outdoor and environmental education aims to develop environmentally literate citizenry by fostering stewardship of the planet and exploring the present and future environmental challenges. Through the lens of all disciplines, students investigate the interconnection between humanity and the natural world while developing a sense of place using essential skills such as critical thinking and innovative problem-solving. By extending the classroom outdoors, students can more deeply investigate the environment's intersection with other aspects of society. Effective outdoor and environmental education also provides students with the opportunity to explore college and career options in various sectors including environmental sciences, conservation, and recreation.

### Standards Alignment

Outdoor and environmental education can align to Colorado Academic Standards (CAS) in virtually every subject area and grade level and can be authentically integrated into effective teaching and learning practices. The educators teaching in the pathway school and/or program can benefit greatly by collaboratively developing curriculum maps for each grade level and subject areas. The District is currently developing Learning Blueprints for kindergarten through eighth grade in all subject areas and the teachers would benefit from taking the district blueprints and building upon them to fit with the theme

of outdoor and environmental education. Although the first intentions are to connect outdoor and environmental education with science and/or STEM, all disciplines can be addressed and enhanced through an OEE model.

Area of Study	General Examples
English Language Arts	Literature analysis  Journaling  Descriptive, narrative, and technical writing opportunities  Connecting text with the environment  Project based learning
Mathematics	Identifying and analyzing patterns, shapes, and designs  Data collection and analysis  Measurement, angles, geometry  Orienteering
Science	Forces and motion  Biology  Ecology  Meteorology  Geology
Social Studies	Geography – human and environment interaction
Visual and Performing Arts	Points of view communicated through art and design.  How visual art and design are influenced by daily life.  Synthesize and relate knowledge and personal experience to make art.
Social Emotional Learning and Comprehensive health	Utilize knowledge and skills to develop a positive self-concept.  Develop healthy self-management skills to prevent and manage stress.  Demonstrate safety procedures for a variety of situations.

#### Theory of Action

If students are provided with a wide variety of ongoing experiential outdoor and environmental learning opportunities paired with best, first instruction, then students will experience numerous benefits including:

- greater pride, ownership and strengthened sense of empowerment to make a difference in their community. (1)
- better performance in reading, writing, math, science, and social studies. (1) (2)
- greater sense of relevance and interest in what they learn in school. (1)
- increased engagement and enthusiasm for learning. (1)
- increased school attendance. (1)

- improved social and emotional competencies and prepared graduate competencies. (2)
- improved overall wellness including physical fitness, reduced stress, and better relationships (1)  
(2)

(1) Coyle, K. (2005). Environmental Literacy in America: 10 years of NEETF/Roper Research and Related Studies Say about Environmental Literacy in the U.S. Washington, D.C. The National Environmental Education and Training Foundation.

(2) Lieberman, G.A., & Hoody, L.L. (1998). Closing the Achievement Gap: Using the environment as an integrating context for learning. San Diego, CA: State Education and Environment Roundtable (SEER).

### Implementation recommendations

#### **Elementary (preschool through fifth grade)**

The Outdoor Education Advisory Committee recommends both an east side and west side outdoor education pathway schools. The geographic location of the pathway schools should be taken into consideration to allow quick access, preferably walking distance, to a park and/or open space.

- Pathway school is defined as a school wide model with no attendance boundary.
  - All students enrolled at the school have opted into the outdoor education pathway. A pathway school example in D11 would be Buena Vista Montessori.
  - Other D11 pathway schools are also in the planning stages, so the number of total pathway schools needs to be taken into consideration. If only one outdoor education elementary pathway school is feasible, then a central location is recommended.
  - The [John Muir Outdoor School](#) in Ashland, OR has been identified as a model outdoor education elementary pathway school.
  - Recommendations for learning opportunities:
    - Regular outdoor learning time is connected to all academic disciplines and social emotional learning.
    - Regular experiential learning opportunities including field trips (both one-day and multi-day) and community programming.
    - Clubs, organizations, and events related to outdoor education that support and enrich the learning experiences from the school day.

#### **Middle (sixth through eighth grades)**

The Outdoor Advisory Committee recommends both east and west side outdoor education pathway programs. The geographic location of the pathway schools should be taken into consideration to allow quick access, preferably walking distance, to a park and/or open space.

- A pathway program is defined as a program within a school model where a sub-population of the students enrolled at the school have opted into the outdoor education program.
- Students enrolled in the pathway program may or may not live within the attendance boundary of the school. A pathway program example in D11 is Sabin's and West's Gifted Magnet Program (GMP).
- If demand for enrollment in the middle school outdoor education pathway program increases over time the program could be expanded further perhaps to the point of being a full pathway school.
- Other D11 pathway programs are also in the planning stages so the total number of middle school pathway programs needs to be taken into consideration. If only one outdoor education middle school pathway program is feasible, then a central location is recommended.
- [Aspen Middle School](#) in Aspen, CO has been identified as a model outdoor education middle school magnet.
- Recommendations for learning opportunities:
  - Regular outdoor learning time is connected to all academic disciplines and social emotional learning.

- Regular experiential learning opportunities including field trips (both one-day and multi-day) and community programming.
- Clubs, organizations, and events related to outdoor education that support and enrich the learning experiences from the school day.

**High (ninth through twelfth grades)**

The Outdoor Education Advisory Committee recommends both east and west side outdoor education pathways. The geographic location of the pathway schools should be taken into consideration to allow quick access, preferably walking distance, to a park and/or open space.

- Pathway is defined as a specific scope of educational opportunities which could include courses, clubs, industry partnerships, higher education partnerships, internships, etc. that aim to prepare students for postsecondary career and/or college opportunities in the outdoor and/or environmental fields.
- Multiple pathways within the outdoors field should be considered which could provide students with industry certificates and/or coursework and experiences necessary to prepare students for continued studies in higher education.
- Implementation of other pathways or magnets in D11 high schools needs to be taken into consideration in addition to existing high school outdoor education opportunities.
  - D11’s [Tesla Education Opportunity School](#) and Aspen’s [Experiential Education Program](#) have been identified as model outdoor education opportunities at the high school level.
  - Suggestions for learning opportunities:
    - One or more CTE-related outdoor education pathways offering the opportunity for students to earn industry certificates, engage with industry partners, and complete internships.
    - One or more college prep pathways offering the opportunity for students to prepare for postsecondary studies in the areas of biology, environmental science.
    - Opportunities and support for students to complete a capstone project related to the outdoors and/or the environment.
    - Experiential outdoor learning opportunities to include one-day and multi-day field trips and engagement with industry, community, and higher education partners.
    - Clubs, school organizations, and events that support outdoor and environmental education.

**Outdoor education launch**

The Outdoor Education Advisory Committee recommends launching the pathway at either the elementary level or at the middle school level first and then phasing in the other two remaining levels to eventually have a K-12 outdoor education pathway on both the east and west sides of the district. If only one K-12 outdoor education pathway is feasible, then the recommendation would be to have a centralized location.

Implementation Timeline

Year 0	<p>Hire school leadership to spearhead planning process for launch of school</p> <p>Identify goals, metrics, and success indicators that will be used to evaluate the pathway school and/or program.</p> <p>Provide professional learning opportunities for school leadership and other educators who are hired prior to the launch of the pathway.</p>
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	<p>Conduct virtual and in-person school visits to learn from other educators in the field of outdoor and environmental education.</p> <p>Submit new instructional materials and course approvals to the BOE.</p> <p>Conduct market research in the community to determine demand and interest in the pathway.</p> <p>Create formal and informal partnerships at the local, state, and national levels.</p> <p>Recruit internal and external staff to be a part of the pathway.</p> <p>Conduct thorough outreach and marketing to inform the D11 community and recruit a diverse population of students interested in enrolling.</p>
Years 1-2	<p>Continue necessary tasks from Year 0.</p> <p>Begin planning matriculation of students and vertical articulation of the pathway at either the elementary and/or middle school levels.</p> <p>Conduct pathway evaluation and adjust goals and monitoring processes as necessary.</p>
Years 3-4	<p>Continue necessary tasks from Year 0 and Year 1.</p> <p>Take stock of high school programs that will support a high school outdoor and environmental education pathway offering CTE and/or college readiness opportunities.</p>
Years 5+	<p>Have one or more K-12 Outdoor and Environmental Education pathways available in D11.</p>

### Effective Professional Learning

In *Pursuing Greatness: Empowering teachers to take charge of their professional growth*, McRel International’s extensive research and experience in talent development of educators found that highly effective professional learning must include four key elements, especially the fourth component. (3)

1. Theory – learning *what* to do and *why* it’s important.
2. Modeling – seeing *how* to do it.
3. Practice – applying a new strategy in an actual classroom setting.
4. Peer coaching – receiving feedback to improve the practice.

(3) Hall, P., Simeral, A., Goodwin, B., Stone, B., & Scott, B. (2019). *Pursuing Greatness: Empowering teachers to take charge of their professional growth*. Denver, CO: McRel International.

In the North American Association for Environmental Education’s (NAEE) *Professional Development of Environmental Educators: Guidelines for Excellence* recommendations are provided about the basic knowledge and abilities educators need to provide high quality environmental education. NAEE groups the recommendations into six themes listed below: (4)

- Theme 1: Environmental Literacy
- Theme 2: Foundations of Environmental Education
- Theme 3: Professional Responsibilities of the Environmental Educator
- Theme 4: Planning and Implementing Environmental Education
- Theme 5: Fostering Learning and Promoting Inclusivity
- Theme 6: Assessment and Evaluation

(4) [North American Association for Environmental Education's \(NAEE\) Professional Development of Environmental Educators: Guidelines for Excellence](#)

As a result of McRel International's research and NAEE's guidelines, educators involved with D11 outdoor and environmental education pathway schools and programming must have ongoing and relevant professional learning opportunities available to them. A combination of stand-alone conferences, workshops, and webinars coupled with collaborative learning with and from colleagues will provide educators with the ability to provide high quality outdoor and environmental learning for students.

### Professional Learning Examples

#### Conferences and Certifications

- [Colorado Alliance for Environmental Education](#) (CAEE)
  - Certification
  - Conference
- [North American Association for Environmental Education](#) (NAAEE)
  - Annual Conference and Research Symposium
  - Resources and eePRO
  - Professional Development
- [Colorado Parks and Wildlife Teacher Institutes](#)
- [Keystone Science School](#)

#### School Visits

- [School in the Woods](#) (Academy School District 20, Colorado Springs, CO)
- [Ute Pass Elementary](#) (Manitou Springs School District 14, Manitou Springs, CO)
- [Aspen School District](#) (Aspen, CO)
- [Aspen Center for Environmental Studies](#) (Aspen, CO)
- [John Muir Outdoor School](#) (Ashland, OR)
- [Colorado Rocky Mountain School](#) <https://www.crms.org/>
- [Mountain Song Community School](#) (Colorado Springs, CO)
- [Warren Tech Outdoor Leadership Program](#) (Jefferson County School District, CO)

#### Professional Collaboration and In-house Training

- Risk management and safety training (general and specific)
- American Red Cross CPR and First Aid Training
- Improvement of teaching practices using a collaborative approach such as Plan-Do-Study-Act from the Carnegie Foundation for the Advancement of Teaching
- Curriculum mapping using D11 Learning Blueprints

### Staffing

In *Creating Successful Magnet Schools Programs*, the U.S. Department of Education stresses the importance of selecting and developing quality staff. Although research indicates that a clearly defined theme is important for magnet school and program success, educators including teachers and administrators who are committed, enthusiastic, and willing to contribute to magnet's vision and success is absolutely essential. The report also states in a case studies examining six successful magnet's that each example demonstrated a high degree of district-level infrastructure and support in addition to having the right leader serving as principal who fosters a collaborative culture and connects with the community.

(5)

(5) <https://www2.ed.gov/admins/comm/choice/magnet/report.pdf>

As a result of these recommendations, pathway schools and programs must consider recruiting and hiring practices that are going to lead to getting the right staff in the school who want to work within the theme of the pathway. If the pathway school is being housed in an existing school, then two models for staffing the pathway is to require existing staff to reapply for positions as mentioned in the US Department of Education report (5) or to offer an opportunity for a one-year hold harmless opt out process as seen in Richardson Independent School District in Houston, TX.

Allocating FTE should be considered to support implementation and refinement of pathway themes for coaching and coordinator responsibilities in addition to marketing, community engagement, partnerships, etc.

### Local, State, and National Partnerships

#### Local

- Colorado Springs Parks and Recreation
- El Paso County Parks
- Trails and Open Space Coalition
- Catamount Institute
- YMCA of the Pikes Peak Region
- Kids on Bikes
- UpaDowna
- Cheyenne Mountain Zoo
- Air Force Academy

#### State

- Colorado Alliance of Environmental Education
- Colorado Parks and Wildlife

#### National

- North American Association of Environmental Education

#### Other

- Higher education
- Business
- Non-profit
- Industry

### Enrollment and demographics

In the area of enrollment and demographics, particular attention needs to be paid to equity, inclusion, opportunity and access. To align with D11's strategic plan and the Equity Policy, an application and selection system needs to be implemented which provides equitable access to pathway programming, perhaps even considering a prioritization process which ensures that the demographics of the pathway schools and programs closely mirrors the demographics of the district as a whole. Various resources exist providing guidance on how districts can develop an equitable and accessible outdoor and environmental education pathway for the benefit of all students.

### Pedagogy

Outdoor and environmental education begins with place-based instruction which is the process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science and other concepts across the curriculum. (6)

[\(6\) Place-based Education: Connecting Classrooms & Communities by David Sobel, 2004](#)

Curricular Resources

[United States Department of Agriculture](#)

[Hands on the Lands](#)

- Supplemental resource bank
- K-12

[Project Learning Tree](#)

- Supplemental
- Units and lessons designed to supplement existing curriculum
- K-12

[Think Earth](#)

- Supplemental
- 1-week units
- K-8

Programs

- Colorado Outdoor Education Center (<https://www.coec.info/>)
- Colorado Outdoor Learning School (<https://cooutdoorschool.com/>)
- Colorado Outward Bound School (<https://www.cobs.org/>)
- Outward Bound (<https://www.outwardbound.org/>)
- Breckenridge Outdoor Education Center (<https://boec.org/>)
- Stone Canyon Outdoor Edventures (<https://www.stonecanyonedge.org/>)
- Outdoor Leadership Training Seminars (<https://www.olts-bt.com/>)
- Catamount Institute (<https://www.catamountinstitute.org/>)
- Keystone Science School (<https://keystonescienceschool.org/>)
- Colorado Alliance for Environmental Education (<https://caee.org/>)
- Colorado Youth Outdoors (<https://www.coloradoyo.org/>)

Outdoor and Environmental Opportunities

Outdoor Activities	Courses and Academic Learning
Day and overnight trips	Biology
Fishing	Ecology
Team building	First Aid and CPR
Archery	AP Biology
Art	AP Environmental Science
Gardening	CTE
Rock climbing	Geology
Hiking	Astronomy

Preschool

The Natural Start Alliance and the North American Association for Environmental Education’s *Nature Based Preschool Professional Practice Guidebook* describes how teachers and administrators can leverage the power of nature to provide all students with the opportunity to learn, grow, and foster a lifetime relationship with the world around them. The guidelines highlight the many research-based benefits of a nature-based preschool model including academic, social, emotional, mental, and

interpersonal growth. A review of multiple successful nature-based preschools found several commonalities between the program including: (6)

- Promoting child development while developing environmental literacy
- Using nature as a central organizing theme
- Spending a significant amount of the instructional time outdoors
- Employing a child-led, play-based approach to learning
- Recognizing the benefits of children's healthy, appropriate risk taking

[\(6\) Natural Start Alliance: Nature Based Preschool Professional Practice Guidebook](#)

#### Clubs and School Organizations

- Y.E.S. club from Catamount Institute
- Various outdoor activity clubs
- Service-learning
- Environmental Science/Stewardship Club

#### Success Indicators and Program Evaluation

- University of Chicago 5Essentials Survey for data related to ambitious instruction, effective leaders, collaborative teachers, supportive environment, involved families
- Enrollment – what percentage of available spots in the school are filled?
- Attendance – what is the attendance rate for students enrolled at the school? Has the attendance rate for the students changed since enrolling at the school? How does the attendance rate compare to other schools in D11 and the state?
- Retention – How well is the school retaining students and families?
- Community engagement – How well is the school engaging with parents, the community, and forming and maintaining external partnerships? How will this be measured?
- Student engagement - How is the school fostering sense of community and enthusiasm for learning as stated in the Theory of Action?
- Strategic Plan - How is the school supporting the whole child? (Panorama survey, CASEL competencies)
- Achievement – How well are students performing on internal and external assessments? How well are students developing D11 graduate profile competencies? How well are students developing habits of work?

#### Achievement Gap Closure

The State Education and Environment Roundtable (SEER) studied 40 schools across 16 states to find students participating in environment as an integrating context in school curricula increased academic achievement in multiple subject areas, improved GPA and graduation rates, and development of social emotional competencies such as improved motivation and engagement. (7)

[http://grayff.org/wp-content/uploads/2013/10/Empirical-Evidence-Supporting-Benefits-of-Outdoor-School-and-Experiential-Learning-Programs\\_March-2015.pdf](http://grayff.org/wp-content/uploads/2013/10/Empirical-Evidence-Supporting-Benefits-of-Outdoor-School-and-Experiential-Learning-Programs_March-2015.pdf)

#### Budget

Field trips – support half-day, full-day, and multi-day field trips with no out of pocket expenses for students and families.

General supplies – support purchasing supplies for outdoor learning in addition to resources for families in need of outdoor clothing and gear to participate in activities.

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Curricular/Textbook resources – support the purchase of supplemental instructional materials related to outdoor and environmental education

Travel and registration – support educators in the Outdoor and Environmental Education pathway with developing their knowledge and abilities to offer high quality and safe learning opportunities for students.

Salaries and benefits – FTE to support educators and schools in the D11 pathway school and program pathways

#### D11 programming inventory

##### Elementary

- Howbert
  - Grassroots implementation
  - Aimed at attracting and retaining students and families within and beyond attendance boundary
  - Catamount programming K-5
  - Partnership with Rock Ledge Ranch and Garden of the Gods
  - Professional learning opportunities
  - Teachers encouraged to integrate outdoor learning
- Adams
  - Catamount programming 2nd through 5th grade (grant funded)

##### Middle

- Clubs and experiential learning opportunities exist

##### High

- Doherty
  - Outdoor ed program that students opt into
  - Ongoing for approximately the last 20 years
- Tesla
  - Wilderness Ed and Bicycle Technician programs

#### Local competition

##### Ute Pass Elementary (Manitou Springs School District 14)

- PK-6
- 6th grade mountain academy in arts and sciences
- Environmental science and stewardship
- Camping and outdoor ed
- Leadership
- PBL
- Small group
- Hands-on science program
- Out of the classroom learning opportunities
- Service Learning
- Gifted and talented
- iPad (1:1)

##### School in the Woods (Academy School District 20)

- 4th grade only
- Application and lottery process
- Significant time outdoors

##### Mountain Song Community School (Colorado Springs, CO)

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- K-8 school
- Integrated approach to teaching the different subjects
- *“We believe that teaching children to care for and respect the earth encourages global responsibility and promotes environmentally conscious living.”*

Community interest and demand

2019 World Cafés

One of the themes emerging from the World Cafés was that the community sought unique programming opportunities within the district.

March 2020 Community Surveys

Outdoor education ranked high in surveys for pathway school and programming options along with STEM, Dual Language Immersion, Visual and Performing Arts, and Career and Technical Education.

Post-secondary alignment 

More research needs to be conducted in this area but the draft of the Colorado Environmental Education Plan reflects the interest and need for schools to provide students with opportunities in these areas. The draft of the report expected to be finalized prior to the 2021-22 school year highlights as one of the major outcomes related post-secondary opportunities in the following manner:

- 4) Create formal and informal pathways to explore career opportunities in the environmental field and understand how environmental literacy can inform a career in any field.
  - a) Identify barriers and develop strategies to support young people from under-represented populations in pursuing careers in environmental and natural resource fields
  - b) Identify existing P-20 pathways in environmental fields associated with Colorado’s Career and Technical Education Plan and opportunities for collaboration and expansion;
  - c) Educate career-influencers about the range of opportunities available and how to help youth navigate pathways and access resources
  - d) Increase awareness of career pathways in environmental fields across a variety of learning experiences
  - e) Create a work-based learning toolkit to support partner organizations in connecting with students and schools
  - f) Develop guidelines to support a local environmental literacy diploma endorsement. (7)

(7) <https://caee.org/sites/default/files/documents/2-21%20Draft%20CO%20EE%20Plan.pdf>

Policies and Procedures

District policy regarding pathway school vision, operations, expectations, funding, hiring,

etc. Equitable enrollment process for pathway schools

Hub-based transportation model

Risk management considerations for outdoor learning

Training for teachers and students about outside safety and expectations

Submitted on behalf of

The Spring 2021 D11 Outdoor and Environmental Education Committee consisting of K-12 educators in teaching, administrator, and other roles within D11.

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