Colorado's Environmental Education Plan:

Advancing Environmental Literacy in Colorado

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Developed by:

Colorado Department of Education Colorado Department of Natural Resources Colorado Alliance for Environmental Education

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Executive Summary

Meaningful environmental and outdoor learning experiences bring us together to learn about our world, including how to best care for and sustain it for future generations. Colorado's environment, economy, and communities depend on informed citizens who can make decisions about air and water quality; the health of farms, ranches, forests and wildlife; how to meet energy and other resource needs; how to create and sustain healthy communities; and how to provide opportunities for people to enjoy the state's natural beauty while protecting it for future generations.

The Colorado Environmental Education Plan outlines strategies for building a sustainable infrastructure to nurture a range of skills and interests and help realize every student's potential to care for the people, places, and planet we all depend on.

Colorado's Environmental Education Plan was first adopted by the Colorado State Board of Education in 2012 because of the Colorado Kids Outdoors Grant Program Legislation, HB10-1131, signed into law in May 2010.

Developing and implementing a statewide environmental education plan depends on the Colorado Department of Education (CDE) and Department of Natural Resources (DNR) leveraging an extensive circuitry of learning sites and partners to ensure that the knowledge and skills students gain, can be in one place and can easily flow to new contexts, powering further exploration and boosting ongoing learning.

Just as a root system supplies nourishment to a plant to help it flourish, the Colorado Environmental Education Plan supports implementation of the Colorado Academic Standards while developing students' environmental knowledge and skills and encouraging students to spend more time outside. The strategies outlined in this plan support teachers by encouraging the integration of high-quality environmental education opportunities and use of the outdoors in ways that are relevant, connected, and meaningful for their students.

The Colorado Environmental Education Plan Articulates Four Main Goals:

- Strengthen collaboration across the state among key stakeholders such as state agencies, formal and informal educators, business and industry partners, school districts, community organizations, and communities.
 - a) Convene statewide EE conferences, regional meetings, and participate in associated conferences to build awareness, share best practices, and engage diverse stakeholders in action planning of culturally relevant EE;
 - b) Support schools and districts in developing an EE implementation plan;
 - c) Utilize common measurements/tools to evaluate regional impact and support coherence and collaborative planning;
 - d) Develop a strategy for funding environmental literacy across the state;

- e) Create formal and informal pathways to transform 'random acts of environmental literacy' to opportunities for *all* young people to pursue and deepen their environmental interest and knowledge over time.
- 2) Provide professional development that increases high-quality, culturally-relevant learning experiences for students and develops a greater understanding of complex ecosystems.
 - a) Develop an understanding of professional development opportunities available statewide;
 - b) Increase formal (in-service and pre-service) and informal educators' content knowledge, pedagogical content knowledge, and instructional skills through:
 - i) Interdisciplinary, place-based and research-based instructional strategies;
 - ii) Innovative technologies as an integral element of environmental education;
 - iii) Best practices that underpin environmental education principles; and
 - iv) Culturally relevant and responsive teaching practices and program design.
 - c) Provide professional development opportunities for pre-service and in-service educators around place-based learning focusing on leveraging local knowledge, local practices, and indigenous ways of knowing central to environmental and outdoor learning experiences.
- 3) Improve statewide access to environmental education experiences for *all* students.
 - a) Reduce barriers to opportunities and funding for teachers to provide environmental learning experiences for students;
 - b) Increase awareness within communities and among *all* families and caregivers for the need and benefits of outdoor experiences to:
 - i) Develop lifelong health, wellness, and civic-minded behaviors.
 - ii) Develop environmental stewardship skills such as the responsible use and protection of the natural environment through conservation and sustainable practices.
 - c) Improve access to equitable and culturally relevant EE learning experiences aligned to the Colorado Academic Standards.
- 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 underrepresented 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.

What is environmental literacy and why is it important to Colorado?

Colorado is a state rich in natural resources and beauty. Understanding the importance of keeping our state healthy is imperative to its future.

Meaningful environmental and outdoor learning experiences bring us together to learn about our world, including how to best care for and sustain it for future generations. Environmental and outdoor learning is a process that helps students learn about the natural systems we all depend on and understand what we must do to interact responsibly with our environment to safeguard natural resources for future generations.

Environmental and outdoor learning improves students' academic performance, builds critical thinking and problem-solving skills, and sparks engagement and enthusiasm for learning. It also builds civic and community engagement, empathy, and improves mental and physical wellness, which are the roots of growing into productive members of Colorado's community. This is achieved when students are encouraged to experience a range of educational settings and allowed to discover how they learn best. Environmental education provides essential opportunities for all kids, whether their best learning happens inside or outside the classroom.

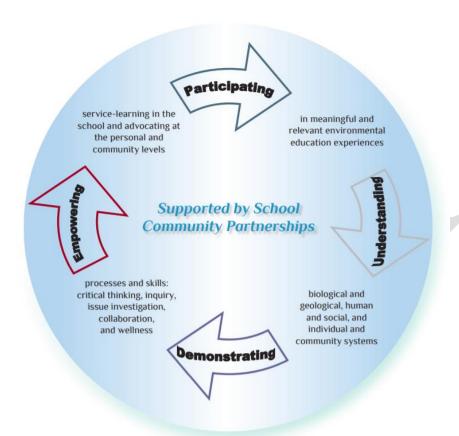
Most importantly, environmental and outdoor learning results in environmental literacy. **Environmental Literacy** is defined as a student's knowledge, understanding, skills, and motivation to take informed environmental action as individuals and as members of their community.

As Coloradans, our wellbeing is interconnected with the wellbeing of our natural systems. We face increasingly complex challenges—from climate change and loss of species to decreasing access to nature, and other threats to our health, security, and future survival. Environmental and outdoor learning works best when it happens in an extensive network of different places and spaces, because this lets students build concepts and make connections over time. Some environmental and outdoor learning happens in formal learning settings, like schools and universities, or settings designed for environmental education, like outdoor classrooms or schools. Some occurs in places where people encounter nature such as parks, zoos, aquariums, or nature centers. Some happens in places that support hands-on, practical experience like laboratories, summer camps, after school programs and museums.

Natural systems are complex, encompassing living creatures, physical surroundings, weather patterns, and, of course, people. Similarly, environmental and outdoor learning are based on a systems approach and employ a whole ecosystem of strategies. So, environmental and outdoor learning can take place in virtually any discipline from anthropology to zoology. Environmental educators are the faces of many types of organizations: from afterschool programs to state and federal agencies. Some environmental educators are what we all tend to picture as "teachers," but they also might be naturalists, scientists,

park rangers, and many others. Engaging students in rich and varied learning environments has the potential to make learning relevant, interactive, and foster place-based connections.

Supported by School Community Partnerships



This diagram illustrates a theory of learning for how students experience environmental education and achieve environmental literacy. This cycle depicts the four key phases of environmental education: participating, understanding, demonstrating, and empowering. Given frequent, meaningful, relevant and connected experiences, students will gain the knowledge and skills to become responsible and productive stewards of Colorado's natural resources.

Guiding Principles

☐ Equity of Access for All Students (All means All)

We must support ALL Colorado's in becoming environmentally literate, not just a few, because all students play a critical role in stewardship of our state's natural resources and civic engagement now and in the future.

☐ Collaborative Solutions and Unified Approach

Collaboration among the many stakeholders and community partners involved in environmental literacy is critical to implementing the recommendations contained in this document.

☐ Sustainability and Scalability of Systems

We must identify and commit to securing dedicated and sustained funding and resources for environmental literacy and work within the current context of Colorado's education and workforce transformation to harness momentum and create long-term impact.

☐ Commitment to Quality

Students must have access to high-quality learning experiences and materials inside and outside of the classroom that cultivate environmental literacy. Formal and informal educators must have access to high-quality professional learning opportunities.

☐ Variety of Learning Experiences

Students can best develop environmental literacy through a combination of learning experiences both in and out of the classroom, including but not limited to, outdoor and informal education, place and community-based education, experiences in green school buildings and grounds, and experiences in career pathways.

☐ Cultural Relevance and Competence

All students benefit from culturally responsive learning experiences. Environmental literacy efforts in Colorado will hinge upon culturally competent educators utilizing educational resources and approaches that are responsive to the communities they serve.

History of the Colorado Environmental Education Plan

The Colorado Environmental Education Plan was first adopted by the Colorado State Board of Education in 2012 as required by HB10-1131, The Colorado Kids Outdoors Grant Program Act. The plan outlined strategies for developing a coordinated and visible statewide environmental education infrastructure. This structure was intended to facilitate students' access to and time spent in the outdoors; and aimed to link teachers with environmental education opportunities and professional development, and resources that engage students in mastering the Colorado Academic Standards.

In 2012, four Regional Environmental Education Leadership Councils were created to facilitate local implementation of the plan. **The Regional Councils** exist to build and support a network of communities and individuals capable of implementing and advocating for the highest quality environmental and outdoor learning in correlation with the Colorado Environmental Education Plan.

The Colorado Alliance for Environmental Education supports the Regional Councils and serves as a clearinghouse of high-quality EE resources.

In 2015, Regional Councils conducted an informal survey of environmental and outdoor learning providers to learn more about the status of environmental and outdoor learning in Colorado. Over 220 environmental and outdoor learning providers responded. Although the data collected was not comprehensive of all providers in the state, several trends were noted including:

- Smaller School Districts (fewer than 2000 students) had the least access to outdoor and environmental learning providers.
- Environmental and outdoor learning partners are least accessible to teachers and schools in the eastern plains of Colorado.
- Only 60% of environmental and outdoor learning providers correlated their programming to state academic standards.

As a local control state, the 178 Colorado school districts and their school boards make public education decisions such as setting local curriculum and local graduation requirements. This results in significant variations in the integration of environmental and outdoor learning into educational experiences for students. To best meet the diverse needs of local districts, since 2017, Council members have been working to identify and develop local environmental and outdoor learning champions in school districts. By 2019, Councils had reached teachers in over 30 districts inviting them to make a commitment towards implementing environmental education experiences in their classrooms or attending professional development in outdoor and environmental learning.

The Colorado Environmental Education Plan is being updated to reflect the progress and growing interest in environmental and outdoor learning as well as to reflect changes in Colorado's Academic

Environmental Education and ESSA

The Every Student Succeeds Act, which reauthorizes the Elementary and Secondary Education Act, is the comprehensive federal legislation that governs preK-12 education in the United States. In 2015, the bill included language making environmental education and environmental literacy programs explicitly eligible for federal education funds for the first time. The key language is found in two formula grant programs described in Title IV of the bill:

- Environmental education is called out as eligible for funding under a "well-rounded education" grants program.
- Environmental literacy programs are eligible for funding as part of the 21st Century Community Learning Centers program.
- The prioritization of STEM activities including "hands-on learning" and "field-based or service learning" to enhance understanding of STEM subjects may provide additional opportunities for environmental science education programs.

Standards, which now include more references to human and environment interactions, climate change, and more.

Implementation of the Colorado Environmental Education Plan

The Colorado Environmental Education Plan (CEEP) is primarily the responsibility of the Colorado Department of Education (CDE). However, this plan's success is dependent on strong partnerships with the Colorado Department of Natural Resources (DNR) and other environment and outdoor learning partners. The Colorado Alliance for Environmental Education (CAEE) is a network of environmental and outdoor learning providers across Colorado. CAEE works collectively to drive excellence, foster collaboration, and mobilize support in environmental and outdoor learning. CAEE was selected by CDE and DNR in 2013 to coordinate the Colorado Environmental Education Regional Councils.

Preparing students as critical thinkers and informed decision-makers about the environment involves a collaborative effort as environmental education is woven through the work of educators, administrators, families, community members, business owners, and governmental leaders. Opportunities exist in rural, urban and suburban locales, and within many cultural contexts. In addition, learning experiences at state and regional historic sites, local museums, and on local school grounds, also provide invaluable opportunities to engage students in interacting with the environment. Success of this plan relies on collaboration of many groups and organizations. Listed below is a brief description of the role that key partners will play in supporting this plan. Successful implementation of the CEEP will require all stakeholders to bring forward their existing resources and expertise to ensure all students have access to high quality environmental education experiences.

Roles

The Colorado Department of Education will.....

- Provide a staff liaison to the Colorado Environmental Education Leadership Council
- Raise awareness of the Colorado Environmental Education Plan
- House the Colorado Environmental Education Plan on the CDE website
- Look for ways to integrate the Colorado Environmental Education Plan into other Colorado Department of Education initiatives
- Disseminate the Colorado Environmental Education Plan to education networks
- Provide ongoing technical support to the Colorado Environmental Education Leadership Councils

The Colorado Department of Natural Resources will....

Provide a staff liaison to the Colorado Environmental Education Leadership Council

- Raise awareness of the Colorado Environmental Education Plan
- Link to the Colorado Department of Education's Environmental Education Plan webpage from the Department of Natural Resources and Colorado Parks and Wildlife websites
- Look for ways to integrate the Colorado Environmental Education Plan into other Department of Natural Resources initiatives
- Disseminate the Colorado Environmental Education Plan to education networks
- Provide ongoing technical support to the Colorado Environmental Education Leadership Councils

Colorado Alliance for Environmental Education will.......

- Facilitate and coordinate 1-2 annual summits of the Colorado Environmental Education Leadership Councils to develop collective implementation strategies
- Raise awareness of the Colorado Environmental Education Plan
- Provide educators with environmental and outdoor learning resources and professional development
- Coordinate the network of environmental and outdoor learning providers and teachers in Colorado
- Disseminate the Colorado Environmental Education Plan to education networks
- Provide ongoing technical support to the Colorado Environmental Education Leadership Council
- Support and assist in fundraising efforts for the Colorado Environmental Education Leadership Council

Colorado Environmental Education Leadership Councils will:

Colorado's four Regional Environmental Education Leadership Councils are responsible for carrying out the mission, goals and strategies of the Colorado Environmental Education Plan. The Councils have members from within the field of environmental education, representatives from school districts, natural resource agencies, recreation industries, and various others who have a vested interest in environmental and outdoor learning. They work to:

- Connect state and local agencies, districts, and schools to promote environmental education and create resources and professional development opportunities for Colorado's teachers and students.
- Propose revisions and updates to the Colorado Environmental Education Plan.
- Build awareness of the Colorado Environmental Education Plan
- Identify and partner with local and regional leaders in outdoor education who can provide EE resources

- Develop funding for environmental education
- Identify and support initiatives that sustain environmental education programs in Colorado
- Monitor annual progress toward meeting the goals of the plan
- Work with Department of Natural Resources and Department of Education to meet shared goals

The Colorado Environmental Education Plan

Vision:

As environmentally literate Coloradans, all PreK-12 students engage in understanding, analyzing, and taking informed action on environmental challenges and conservation within Colorado, the United States, and the world.

Mission

Organizations and communities collaborate to ensure that all students in the state of Colorado have access to and are engaged in high-quality environmental and outdoor learning experiences.

Goals/Strategies

- Strengthen collaboration across the state among key stakeholders such as state agencies, formal and informal educators, business and industry partners, school districts, community organizations, and communities.
- 2) Provide professional development that increases high-quality, culturally-relevant learning experiences for students and develops a greater understanding of complex ecosystems.
- 3) Improve statewide access to environmental education experiences for *all* students.
- 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.

Goal 1: Strengthen collaboration across the state among key stakeholders such as state agencies, formal and informal educators, business and industry partners, school districts, community organizations, and communities.

- a. Convene statewide EE conferences, regional meetings, and participate in associated conferences to build awareness, share best practices, and engage diverse stakeholders in action planning of culturally relevant EE; (Envirothon)
- b. Support schools and districts in developing an EE implementation plan;
- c. Utilize common measurements/tools to evaluate regional impact and support coherence and collaborative planning;
- d. Develop a strategy for funding environmental literacy across the state;
- e. Create formal and informal pathways to transform 'random acts of environmental literacy' to opportunities for *all* young people to pursue and deepen their environmental interest and knowledge over time.

Recommended Actions		
State Agencies	Participate and present at statewide and regional EE convenings.	
	Develop aligned programming, policy, and funding to support coherent implementation of the EE Plan.	
School Districts	Create an EE implementation team consisting of cross-sector stakeholder groups (e.g. community partners, regional EE coordinators, parents, students, etc.) to support EE implementation planning at the district level.	
	Support the development of aligned programming/curriculum.	
	Align policies and funding to support district implementation efforts.	
Schools	Create an EE implementation team consisting of cross-sector stakeholder groups (e.g. community partners, regional EE coordinators, parents, students, etc.) to support EE implementation planning at the school level.	
	Develop aligned programming/curriculum, professional learning experiences, partnerships, policies, and funding to support school implementation efforts.	
Teachers	Collaborate with colleagues and community partners, including parents and caregivers, to develop EE learning experiences for students.	
	Explore opportunities for interdisciplinary learning and professional development experiences with colleagues.	
Incorporate field-based and place-based learning experiences into the o		

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Goal 2: Provide professional development that increases high-quality, culturally-relevant learning experiences for students and develops a greater understanding of complex ecosystems.

- a. Identify current EE professional development opportunities available statewide and identify gaps;
- b. Increase formal (in-service and pre-service) and informal educators' content knowledge, pedagogical content knowledge, and instructional skills through:
 - i. Interdisciplinary, place-based and research-based instructional strategies;
 - ii. Innovative technologies as an integral element of environmental education;
 - iii. Best practices that underpin environmental education principles; and
 - iv. Culturally relevant and responsive teaching practices and program design.
- c. Provide professional development opportunities for pre-service and in-service educators around place-based learning focusing on leveraging local knowledge, local practices, and indigenous ways of knowing central to environmental and outdoor learning experiences.

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Recommen	Recommended Actions		
State Agencies	Participate in the coordination and development of resources and implementation of professional development.		
	Become familiar with district and school needs to effectively align professional development opportunities.		
	Review the Colorado Academic Standards to effectively align professional development opportunities with standards.		
	Develop and support environmental and outdoor learning professional development opportunities for pre-service teachers in collaboration with institutions of higher education.		
School Districts	Provide culturally relevant environmental education experiences for educators in district professional development activities.		
	Apply for grant funding from the ESSA federal funds to support teacher professional development.		

Schools	Provide culturally relevant environmental education experiences for educators in district professional development activities. Support interdisciplinary EE professional development (e.g. professional learning communities) for practicing and engaging in environmental and outdoor learning			
	with students.			
Teachers	Participate in high-quality, standards-based professional development opportunities to increase content and pedagogical knowledge and skills.			
	Participate in culturally relevant and ability-accessible environmental education experiences and professional development for educators.			
	Engage in professional learning opportunities such as the annual "Advancing EE" Conference to network with the greater EE community.			
	Observe or shadow teachers who are already integrating environmental education into their classrooms.			
	Participate in interdisciplinary EE professional development (e.g., professional learning communities) for practicing and engaging in environmental and outdoor learning with students.			
Students	Engage in conferences, youth summits or other learning opportunities to learn more about how to share outdoor and environmental learning opportunities with peers.			
EE Providers Participate in the coordination of partnerships, development of resources implementation of professional development.				
	Contact the Regional EE Councils to find high-quality professional development or professional learning communities to increase knowledge and skills in environmental education.			
	Share professional development opportunities on-line at <u>www.caee.org</u> .			
	Become familiar with the Colorado Academic Standards to effectively align educational programming to school and teacher needs.			
Parents and Caregivers Engage in conferences, community summits or other learning opportune more about how to share outdoor and environmental learning opportune peers.				
	Encourage and engage in environmental and outdoor learning as a family.			
Community- based Organizations	Become familiar with the Colorado Academic Standards to effectively align educational programming to school and teacher needs.			

	Participate in the coordination and development of resources, and implementation professional development.	
	Develop and host EE professional development for educators.	
	Coordinate with youth serving organizations to support youth engagement efforts.	
	Reach out to members of the school community to increase awareness of available resources, field experts, and possible training opportunities.	
Business and Industry Partners	Coordinate with community-based organizations to support and fund professional development and community engagement efforts.	
	Collaborate with local partners to provide EE professional development (e.g. teacher externships, career awareness, guest speakers, curriculum planning).	

Goal 3: Improve statewide access to environmental education experiences for *all* students.

- a. Reduce barriers to opportunities and funding for teachers to provide environmental learning experiences for students;
- b. Increase awareness within communities and among *all* families and caregivers for the need and benefits of outdoor experiences to:
 - i. Develop lifelong health, wellness, and civic-minded behaviors.
 - ii. Develop environmental stewardship skills such as the responsible use and protection of the natural environment through conservation and sustainable practices.
- c. Improve access to equitable and culturally relevant EE learning experiences aligned to the Colorado Academic Standards.

Recommended Actions		
State Agencies	Partner with members of the school community to increase awareness of available resources, content experts, and training opportunities. Work with the regional councils to create a regional blueprint for implementing and supporting environmental education	

	Provide assistance to schools and districts in developing and coordinating a plan to ensure students have environmental education experiences every year.
	Ensure all available programming for pre-K-12 students in Colorado is standards-based and aligns with the Colorado Academic Standards.
School Districts	Consider ways to "green" school and district facilities.
	Examine district policies to determine potential barriers to utilizing the school building, school grounds or community for outdoor and environmental learning opportunities.
	Encourage schools to work with the Colorado Department of Transportation's Safe Routes to School program to develop safe and feasible ways to transport students from school to local green spaces (parks, gardens, business parks) or community resources for outdoor learning.
	Encourage collaboration between facilities/energy management staff and educators to develop aligned learning experiences.
	Allocate funding from the ESSA Title IV well rounded education grant program to support student outdoor and environmental learning opportunities.
	Work with non-formal partners to apply for funding through the ESSA Title IV 21st Century Community Learning Centers grant program.
Schools	Consider ways to "green" school facilities.
	Become familiar with the Colorado Environmental Education Plan and determine possible connections to school planning efforts.
	Identify local community and online environmental education resources.
	Invite local environmental education experts to participate in planning for the inclusion of environmental education in the schools.
	Develop partnerships with the local environmental education community and business organizations to assist efforts.
	Examine school policies to determine potential barriers to utilizing the school building, school grounds or community as a learning tool for teaching environmental education.
	Work with the Colorado Department of Transportation's Safe Routes to School program to develop safe and feasible ways to transport students from school to local green spaces (parks, gardens, business parks) or community resources for outdoor learning.

Teachers	Integrate environmental and outdoor learning education into existing standards-aligned curriculum.
	Use the school grounds and/or community open space as part of a quality learning experience.
	Seek out high-quality field-trip opportunities.
	Encourage students to participate in projects or service learning opportunities that use the environment as a context for learning.
Students	Start or participate in school green teams and/or environmental clubs.
	Incorporate environmental and outdoor learning into service projects.
EE Providers	Design programs and resources that support the Colorado Academic Standards.
	Align with the district and/or school curriculum and resources to provide students with opportunities for addressing, analyzing and making decisions about environmental issues on a local-to-global level.
	Use evaluation data from environmental education programs to monitor success.
Parents and Caregivers	Volunteer at your school or district to chaperone field trips or help care for outdoor learning environments.
	Support the development of funds for outdoor and environmental learning experiences.
	Talk with your children about outdoor and environmental learning opportunities (visiting nature centers, weekend hikes, summer camps, and more) to connect with what students learn about in school.
Community- based Organizations	Reach out to members of the school community to increase awareness of available resources, content experts, and possible training opportunities.
	Encourage the use of outdoor locations as an educational environment.
,	Work with districts, schools and teachers to assist in creating and facilitating outdoor and environmental learning opportunities.
	Support the use of the school grounds for outdoor learning experiences.
	Work with teachers to integrate environmental education experiences into the curriculum that extend learning experiences.
	Ensure all available programming for pre-K-12 students in Colorado is standards-based and aligns with the Colorado Academic Standards.

Business and Industry Partners

Partner with members of the school community to increase awareness of available resources, content experts, and possible training opportunities.

Support the use of the school grounds for outdoor learning experiences.

Work with teachers to integrate environmental education experiences into the curriculum that extend learning experiences.

Help provide funding for outdoor and environmental learning opportunities.

Goal 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 underrepresented 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.

Recommended Actions

State Agencies

Identify environmental and natural resource career pathways within your agency and opportunities to engage underrepresented communities.

Create and share multilingual resources about state agency environmental careers and the technical and educational requirements for those careers.

Develop or expand career pathways through internships, apprenticeships, and workbased learning that lead to employment.

School Districts	development and implementation of CTE pathways.	
	Develop an environmental literacy diploma endorsement. Increase the number of schools offering advanced courses in the environmental sciences (e.g. AP Environmental Science, IB Environmental Science, etc.)	
	Create partnerships with industry to ensure opportunities provided align with industry needs and practices.	
Schools	Create or expand opportunities for students to learn about and experience environmental careers.	
	Share environmental career resources with students.	
	Support educators in pursuing professional development to build knowledge of career pathways in environmental fields.	
	Provide advanced courses in environmental science (e.g. AP Environmental Science, IB Environmental Science, etc.)	
Teachers	Partner with state and local agencies, EE providers, and private industries to share information about environmental careers with students.	
	Share environmental career resources with students.	
	Attend professional development opportunities to build knowledge of career pathways in environmental fields.	
Students	Attend career fairs, job shadowing days, and other opportunities to learn about careers.	
	Explore the technical and educational requirements for careers in the environmental field.	
	Participate in a work-based learning experience in an environmental field.	
	Enroll in coursework in environmental sciences and related fields.	
EE Providers	Create or expand internship opportunities and entry-level positions for young adults.	
	Partner with schools and youth-serving organizations to engage their audiences in learning about careers.	
	Participate in career fairs, job shadowing days, and other opportunities for youth and young adults to learn about careers.	

	Incorporate career messaging into current environmental education programs and develop new career-centered programs when possible.		
Parents and Caregivers	Talk to children about environmental careers and encourage them to seek out information and experiences.		
Community- based Organizations	Partner with EE providers, private industries, and state agencies to connect youth and young adults with job information and opportunities.		
Business and Industry	Create and share multilingual resources about state agency environmental careers and the technical and educational requirements for those careers.		
Partners	Create or expand internship opportunities and entry-level positions for young adults to enter the field.		
	Partner with schools, EE providers and youth-serving organizations to engage their audiences in learning about careers.		
	Represent your business/industry at career fairs; provide job shadowing days, and other opportunities for youth to learn about careers.		

Conclusion

The Colorado Environmental Education Plan seeks to ensure that all Colorado students receive high-quality, standards-based environmental education and are ready for the jobs, challenges, and opportunities of the 21st century.

Environmental education provides students with the knowledge and skills necessary to be active and productive citizens in a global community. Many of the challenges and opportunities society currently faces focus on the environment. To overcome these challenges and take advantage of emerging opportunities, students need to have the knowledge and skills to understand complex problems, weigh different options, and look for solutions. In high-quality environmental and outdoor learning, students integrate and apply knowledge and skills to real-life problems and issues facing society in order to form well informed opinions and take action.

Students who spend more time being physically active and learning outdoors receive benefits that go beyond academics. Outdoor education fosters students' development of healthy habits and connection to the place in which they live. Outdoor learning experiences increase student engagement and enthusiasm for learning while promoting an active and healthy lifestyle. Supporting students in developing a sense

of place by experiencing Colorado's varied environments connects them to the land and allows them to take ownership of a shared natural heritage.

Ultimately, through environmental and outdoor learning:

- Students will understand how their decisions affect the environment, so they can act on that understanding in a responsible and effective manner;
- Students will have an understanding of human dependency on a healthy environment;
- Students will participate in standards-based, relevant, outdoor learning experiences in environmental education that lead to postsecondary workforce readiness;
- Teachers will effectively and creatively utilize best practices and approaches to teaching about the environment;
- Schools and districts will access a network of educators, volunteers and community partners to increase environmental education opportunities for pre-K-12 students.

Appendices

Appendix A: Colorado's Environmental Literacy Learning Framework

Colorado's Environmental Literacy Learning Framework lays out what children and youth should learn from their experiences with environmental and outdoor learning. These attitudes, knowledge, and skills are reflected and infused throughout Colorado's 2020 Academic Standards listed in Appendix B.

Attitudes

- Connected
- Curious
- Responsible and Empowered

Skills

Environmental Steward

- Ask Relevant Questions
- Identify, Analyze and Investigate Environmental Issues
- Use evidence and experience to defend positions and resolve issues
- Evaluate and Make Personal Judgements about Environmental Issues
- Create and Evaluate Plans to resolve or mitigate environmental issues
- Participate in Civic Action Strategies

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Knowledge

- The Living Environment: Earth's Physical and Ecological Systems
- Earth's Social, Cultural, and Political Systems
- Environmental Issues and Potential Solutions
- Civic Participation and Action Strategies

Attitudes

Young people should demonstrate key attitudes which encompass the mindset of an environmental steward. Colorado's environmental stewards

Connected:

 demonstrates caring, empathy, awe and belonging towards cultural resources and the natural world.

Curious:

• shows curiosity about how the world works and seeks out new and challenging learning experiences throughout their lives.

Responsible and Empowered:

• Shows concern for the welfare of people, cultural resources, and the natural world. They are respectful, consider multiple perspectives; honor others regardless of differences; and take informed action to solve environmental problems.

Knowledge

Young people need to understand how our ever-changing and interconnected world works in order to function effectively and act responsibly. Colorado's environmental stewards understand:

The Living Environment which includes Earth's Physical and Ecological Systems:

How living things function, interact with one another and their environment.
 Earth is a complex system of interacting physical, chemical and biological processes.

Earth's Social, Cultural and Political Systems: How the various social, cultural, and political systems develop and interact, as well as the historical and geographic contexts in which they have developed and now function.

Environmental issues and Potential Solutions:

 How environmental issues arise from biophysical impacts as well as human conflicts; and understanding how solutions need citizen action involving planning and evaluation of results.

Civic participation and action strategies:

 How the methods of civic engagement, action, and community service preserves or improves the environment. Individuals and communities solve environmental problems as a means to improve their communities.

Skills

Young people need to be able to apply their creativity and innovation to evaluate and make personal judgements about environmental issues in order to function effectively and act responsibly. Colorado's environmental stewards are able to:

Ask relevant questions-

 about environmental problems as well as human dimensions and historical or geographical features of an issue. This also includes the ability to ask higher-order questions aimed at discovering conditions that have implications for the issue;

Identify, Investigate and Analyze environmental issues • including the ability to describe and provide evidence for the dimensions of the issue, human disagreements central to it, and factors that cause or contribute to it; the interpretation and use of knowledge regarding physical, ecological and sociopolitical systems, and of information about stakeholders, their positions, beliefs and value perspectives.

Use evidence and experience to defend positions and resolve

 constructing and defending a sound evidence-based argument about what it will take to resolve or help resolve an issue;

Evaluate and make personal judgments about environmental issues –

 constructing evaluations and explanations based on available information and considers the beliefs and values of diverse stakeholders, and articulating views about actions that may be warranted.

Create and evaluate plans to resolve or mitigate environmental issues –

 by assuming the responsibility for acting, and engaging in planning based on the environmental conditions, incorporates beliefs and values of diverse stakeholders, and available resources, and sociopolitical contexts to resolve or help resolve issues.

Participate in civic action strategies-

• forms of citizen participation, action, and community service intended to preserve or improve the environment. Action strategies include restoration projects; consumer and economic action; effective communication strategies; political action; and collaborative solution seeking.

Appendix B: Exploring Environmental Education Connections in the Colorado Academic Standards

The revised 2020 Colorado Academic Standards (CAS) emphasize a multi-dimensional approach which aligns well with the attitudes, knowledge, and skills identified in the Colorado Environmental Literacy Framework. The CAS connect the core disciplinary ideas, with the real-world practices that professionals and everyday citizens might use on a regular basis. Connections flow across the content areas of science, social studies, health and PE, and reading, writing, and communicating in ways that invite all students to embrace curiosity and make sense of the world around them. In addition to the grade level expectations listed below, there are a number of opportunities to make connections to environmental and outdoor learning across all content areas. We can leverage many of these to make connections to various industries that play a central role in our local, national, and global economies.

(The List of Standards is currently being finalized and will be added to the draft soon!)

Appendix C: Criteria for Quality Professional Development

The National Project for Excellence is a collection of best practices in establishing guidelines for the development of balanced, scientifically accurate, and comprehensive environmental education programs and materials. These guidelines, taken from the Guidelines for Excellence: Professional Development of Environmental Educators, published by the North American Association for Environmental Education should be considered when creating professional development experiences for pre-K-12 teachers and community-based educators. These guidelines outline the experiences and learning that will help educators deliver instruction that effectively fosters environmental literacy. The complete set of guidelines is available at:

https://cdn.naaee.org/sites/default/files/eepro/products/files/professional_development_lr.pdf

Theme One: Environmental Literacy

Educators must be competent in the skills and understandings outlined in K-12 Environmental Education: Guidelines for Excellence including:

- Questioning, analysis, and interpretation skills
- Environmental processes and systems
- Skills for understanding and addressing environmental issues
- Personal and civic responsibility

Theme Two: Foundations of Environmental Education

Educators must have a basic understanding of the goals, theory, practice, and history of the field of environmental education including:

- Fundamental characteristics and goals of environmental education
- How environmental education is implemented
- The evolution of the field

Theme Three: Professional Responsibilities of the Environmental Educator

Educators must understand and accept the responsibilities associated with practicing environmental education.

- Exemplary environmental education practice
- Emphasis on education, not advocacy
- Ongoing learning and professional development

Theme Four: Planning and Implementing Environmental Education

Educators must combine the fundamentals of high-quality education with the unique features of environmental education to design and implement effective instruction.

- Knowledge of learners
- Knowledge of instructional methodologies
- Planning for instruction
- Knowledge of environmental education materials and resources
- Technologies that assist learning
- Settings for instruction
- Curriculum planning

Theme Five: Fostering Learning and Promoting Inclusivity

Educators enable all learners to engage in culturally relevant open inquiry and investigation, especially when considering environmental issues that are controversial and require learners to seriously reflect on their own and others' perspectives.

- A climate for learning about and exploring the environment
- An inclusive and collaborative learning environment
- Flexible and responsive instruction

Theme Six: Assessment and Evaluation

Environmental educators must possess the knowledge, abilities, and commitment to make assessment and evaluation integral to instruction and programs.

- Learner outcomes
- Assessment that is part of instruction
- Improving instruction
- Evaluating programs

Appendix D: Ensuring Quality in Environmental Education Materials

The National Project for Excellence is a collection of best practices in establishing guidelines for the development of balanced, scientifically accurate, and comprehensive environmental education programs and materials. The following guidelines, taken from the Environmental Education Materials: Guidelines for Excellence by the North American Association for Environmental Education should be used when selecting or creating materials or programs for use by pre-K-12 schools to ensure the highest quality. These guidelines offer a way of judging the relative merit of different materials, a standard to aim for in developing new materials, and a set of ideas about what a well-rounded environmental education curriculum might be like. The complete set of guidelines is available at:

https://cdn.naaee.org/sites/default/files/eepro/products/files/ee materials.lr .pdf

Guideline #1 Fairness and accuracy

EE materials should be fair and accurate in describing environmental problems, issues, and conditions, and in reflecting the diversity of perspectives on them.

- Factual accuracy
- Balanced presentation of differing viewpoints and theories
- Openness to inquiry
- Reflection of diversity

Guideline #2 Depth:

EE materials should foster awareness of the natural and built environment, an understanding of environmental concepts, conditions, and issues, and an awareness of the feelings, values, attitudes, and perceptions at the heart of environmental issues, as appropriate for different developmental levels.

- Awareness
- Focus on concepts
- Concepts in context
- Attention to different scales

Guideline #3 Emphasis on skills building:

EE materials should build lifelong skills that enable learners to address environmental issues.

- Critical and creative thinking
- Applying skills to issues
- Action skills

Guideline #4 Action orientation:

EE materials should promote civic responsibility, encouraging learners to use their knowledge, personal skills, and assessments of environmental problems and issues as a basis for environmental problem solving and action.

- Sense of personal stake and responsibility
- Self-efficacy

Guideline #5 Instructional soundness:

EE materials should rely on instructional techniques that create an effective learning environment.

- Learner-centered instruction
- Different ways of learning
- Connection to learners' everyday lives
- Expanded learning environment
- Interdisciplinary
- Goals and objectives
- Appropriateness for specific learning settings
- Assessment

Guideline #6 Usability:

EE materials should be well designed and easy to use.

- Clarity and logic
- Easy to use
- Long-lived
- Adaptable
- Accompanied by instruction and support
- Make substantiated claims
- Fit with national, state, or local requirements

Appendix E: Justice, Equity, Diversity and Inclusion in Environmental Education

According to the Bell Policy Center, "racial and ethnic minorities are predicted to comprise about 46 percent of Colorado's population in 2050, compared to about 30 percent in 2015." (*Colorado's Demographics: What to Know, How to Prepare* 2018)

Unfortunately, "[p]ioneering conservation and environmental policies, from the creation of national parks starting in the 1870s to the historic regulation of air, water, and solid waste in the 1970s, typically brought both the fewest benefits and the greatest environmental burdens to communities of color and the poor. Those disparities persist today, as the legacy of a lack of inclusion in policy-making throughout these years." (Carey, Bonta, DeFalco, Taylor Smith, & Braus, 2015). These demographic shifts and historical underrepresentation make it critically important that we embrace opportunities to bring justice, equity, diversity and inclusion to environmental education. We know that culturally-relevant and culturally and ability adaptive practices benefit all students, not just those who are in underrepresented populations.

Ensuring that students have access to culturally-relevant, culturally and ability responsive environmental and outdoor learning experiences requires work at a variety of levels. In *Diversity and the Conservation Movement* (Carey, Bonta, DeFalco, Taylor Smith, & Braus, 2015), authors suggest first focusing internally on yourself and on your team and then focusing externally on your constituents. Actions to increase inclusion and equity excerpted from *Diversity and the Conservation Movement* include:

- Improving cultural competency to enable you to work with people who have different backgrounds, approaches, and worldviews than you do. By acknowledging, appreciating, and learning from others, you can work together on creative solutions that integrate multiple perspectives. You can also work with your partners to marry traditional knowledge with scientific findings.
- Building a bigger, more powerful constituency. Engaging diverse audiences makes sense for the simple reason that it increases the number of participants in the conservation movement.
 Business as usual means continuing to reach a narrow slice of the American public. Working with new audiences can create new supporters, leaders, and problem-solvers, and boost overall energy.
- Becoming more effective and gaining competitive advantages as an organization. The skills you
 will develop through increased cultural competency are invaluable and can attract diverse
 public and political audiences who can greatly benefit your mission.
- Developing a stronger fundraising base by widening the number and types of grants for which
 you are eligible. You will also be able to solicit support from a more diverse base of individual
 donors.
- Becoming preferred employers in the field by increasing your capacity to recruit and retain staff from all backgrounds.
- Developing resilience. Greater biodiversity in a natural system makes that system more resilient
 and adaptable to change; in an organization, it can provide resilience and adaptability in the face
 of crises.
- Connecting with a broader network of partners. A commitment to diversity can enable connections to new individuals and organizations that can provide leverage, new sources of funding, and new pathways to conservation.
- Nurturing creativity and innovation. Diversity provides a pool of creativity and energy that a less diverse organization often lacks when it comes to problem solving.

A Dictionary of Diversity

Excerpted from *Diversity and the Conservation Movement* (Carey, Bonta, DeFalco, Taylor Smith, & Braus, 2015).

Discussions of diversity typically include a myriad of jargon-laden terms. As you work to diversify your project or organization, it is critical that you clarify your terms, ensure you're comfortable with the language you've chosen, and practice being as specific as possible. Each organization needs to establish its own key terms and definitions based on its unique needs, but the definitions used by the Society for Human Resource Management (SHRM), the world's

largest membership organization devoted to human resource management, may provide a useful starting point.

Diversity is defined as "the collective mixture of differences and similarities that includes, for example, individual and organizational characteristics, values, beliefs, experiences, backgrounds, preferences, and behaviors", according to the Society for Human Resource Management.

Note that this definition of diversity is focused on the system level—a group of people, a region, an organization, and so on. Diversity is not an individual attribute; there is no such thing as a "diverse" person. Whether or not an individual adds to the diversity of a group depends on the specific demographics being measured within that group.

Inclusion means welcoming and including a diverse range of people, and having their input and perspectives valued and considered within the context of a collective endeavor. While diversity can be measured in demographic data, inclusion is about process and culture. In general, the more diverse a group, the more challenging inclusion becomes. Organizations that do attract individuals who reflect the country's demographics but ignore the need to create an inclusive culture often find low retention rates.

Environmental Racism refers to those institutional rules, regulations, policies, or government or corporate decisions that deliberately target certain communities for least desirable land uses and higher adverse environmental impacts. Environmental racism includes the unequal exposure to toxic and hazardous waste and the systematic exclusion of people of color from environmental decisions affecting their communities.

Environmental Equity refers to equal protection under environmental laws and equal enforcement of those laws. Examples include non-discriminatory zoning and cleanup of hazardous wastes in all communities, and the effective regulation of industrial pollution, regardless of the racial and economic composition of the community.

Environmental Justice is broader in scope than environmental equity and refers to cultural norms and values, rules, regulations, behaviors, policies, and decisions to support sustainable communities, where all people can interact with confidence that their environment is safe, nurturing, and productive.

Colorado's Demographics: What to Know, How to Prepare. (2018, July 02). Retrieved December 23, 2020, from https://www.bellpolicy.org/2018/01/12/colorados-demographics/

Bonta, M., DeFalco, T., Taylor Smith, C., & Braus, J. (2015). Diversity and the Conservation Movement (1141260073 859300194 J. Carey, Ed.). Retrieved from

https://cdn.naaee.org/sites/default/files/eepro/resource/files/diversity_module.9.22.15.pdf

Appendix F: Creating your own Plan for Environmental Education

Achieving the vision of the Colorado Environmental Education Plan requires time, resources, and ongoing communication across schools and their communities.

The following six guiding principles are recommended for use during school or district level implementation planning:

- Equity of access for ALL students
- Collaborative Solutions and Unified Approach
- Sustainability and Scalability of Systems
- Commitment to Quality
- Variety of Learning Experiences
- Cultural Relevance and Competence

The following activities are designed to support schools, districts, and partners as they strive to implement the Colorado EE Plan. It identifies five activities to support implementation efforts.

Activity 1: Identify an eeImplementation Team

- 1. Identify the members of the eeImplementation team. Include representation from school administration, interdisciplinary instructional teams, teacher leaders, and make sure to include parents and families and relevant community partners.
- 2. Establish a timeline for implementation planning and set-up a meeting schedule.
- 3. Discuss existing initiatives that can be used to execute, monitor, and reinforce the implementation efforts.

	Potential Member	Expertise: (Content knowledge, policy expertise, stakeholder engagement, etc.)	Specific Role	
1.				
2.				
3.				
4.				
5.				

First meeting date	
Time	
Location	
Method of ongoing communication with team (e.g., email, Google group, Webinar, etc.)	

Activity 2: Create a Vision for eeImplementation

Directions: Discuss each of the four key questions below with the eeImplementation Team. Discuss and agree on a concise answer to each question and record:

- 1. What are we trying to accomplish for our students with regard to environmental and outdoor learning, and why?
- 2. How will we know that we have done it?
- 3. What is holding us back from getting there?
- 4. How does environmental and outdoor learning fit into our school's mission and more broadly, how will it prepare our students for college and career readiness?

Use the answers to the questions above to craft your 2-3 sentence vision statement and record the statement below.

Activity 3: Complete eeImplementation Rubric

The Colorado Environmental Education has four primary goals. As a team, identify how well your team, school or organization is already working towards the goal. Review the list of recommended actions associated with each goal to help spark your thinking.

Activity 3: Complete eeImplementation Self-Assessment

eeImplementation						
					Strategies in Progress	
Strengthen collaboration among key stakeholders such as state agencies, formal and informal educators, business and industry partners, school districts, community organizations, and communities to advance environmental and outdoor learning	0 Not Implemented	1 Developing	Progressing	3 Leading		

Provide professional development that increases high-quality learning experiences for students and develops a greater understanding of complex ecosystems.	0 Not Implemented	1 Developing	2 Progressing	3 Leading	
Improve access to environmental education experiences for <i>all</i> students.	0 Not Implemented	1 Developing	2 Progressing	3 Leading	
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.	0 Not Implemented	1 Developing	2 Progressing	3 Leading	
Other					

Activity 4: Brainstorm Potential Strategies

Directions: After completing the assessment and identifying ways you are already working towards the goals in the plan, record your ratings and identify any potential new strategies you could engage in to support environmental and outdoor learning.

Goal	Overall Rating	Potential New Strategies to Engage in to Support Environmental and Outdoor Learning
Strengthen collaboration among key stakeholders such as state agencies, formal and informal educators, business and industry partners, school districts, community organizations, and communities to advance environmental and outdoor learning		
Provide professional development that increases high-quality learning experiences for students and develops a greater understanding of complex ecosystems.		
Improve access to environmental education experiences for <i>all</i> students.		
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.	
Other	

Activity 4: Summarize Results

Directions

- Review the results from each goal
- Discuss the answers to the following questions with the team and record the answers:
 - A. Identify the current state of environmental and outdoor learning at your school/district/classroom using the ratings from the rubric above. Discuss the desired state of what you would like environmental and outdoor learning to look like:
 - a. How can we center equity in our desired state?
 - b. Who else needs to be engaged in defining our desired state?
 - c. How do we start working towards our desired state? How can we build so that our work is sustainable?
 - d. How does our defined desired state lead to quality and variety of learning experiences?

- e. How does our desired state match community/student interest and needs?
- B. Discuss and come to consensus on which potential strategies represent the <u>heaviest lift</u> and which priority area represents the <u>lightest lift</u>.
- C. Discuss and record reflections on the Priority Areas that are the heaviest lift:
 - a. Why are these areas the <u>heaviest lift</u> and what are potential leverage points to intervene?
 - b. What would happen if we successfully made these shifts?
 - c. How can we use these strategies to plan for wide implementation?
- D. Discuss and record reflections on the areas that are the <u>lightest lift</u> for your school:
 - a. Why are they the <u>lightest lift</u>?
 - b. How can we use these areas of relative strength to build momentum for implementation?

School Implementation Notes:

Activity 5: Develop an Action Plan

Directions: After completing Activity 4, the eeImplementation team should identify **three-five strategies** to prioritize for the school year and use an Action Planning Template to create a plan for the year. The team should identify opportunities to revisit the document during their established meeting times to monitor progress and modify plans.

Goal Addressed:	Strategy	Resources Needed (Internal/ External)	Action Steps	Timeline
Strengthen collaboration among key stakeholders such as state agencies, formal and informal educators, business and industry partners, school districts, community organizations, and communities to advance environmental and outdoor learning				
Provide professional development that increases high-quality learning experiences for students and develops a greater understanding of complex ecosystems.				

Improve access to environmental education experiences for <i>all</i> students.		
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.		
Other		

Notes: