

Cal-Wood Lesson Descriptions & Standards Spring 2024

At Cal-Wood, no two school programs are ever alike. Our educational programs are customized to meet trip goals and objectives, as well as each school's unique student body. Teachers and administrators select topics, activities, and themed programs that best connect to what students are learning or are about to learn in the classroom. We creatively design interactive and experiential lessons which are specific to the features of our natural landscape. For details, see the descriptions below or contact schoolprograms@calwood.org

All Cal-Wood school programs include hiking, field observation, team building, nature awareness activities, conservation themes and plenty of teachable moments. In addition to these components, teachers select academic lessons for each trip. The number of activities included in each lesson block will vary, as some activities are more in-depth and time-intensive.

[View a video clip of our Environmental Education Program](#)

Connecting to People and Place

Teachers are asking for more social and emotional learning opportunities to lay the foundation for a successful and positive experience at Cal-Wood. We like to think of this as connecting to the people (instructors, parent chaperones, teachers and peers) and the place (facilities, land, plants and animals) that make up the Cal-Wood experience.

To this end, we will take a little extra time for orientation, group building and intentional nature-based activities that will help students do the following:

- Transition to a new, unfamiliar place by exploring the facilities and environment of Cal-Wood to create a sense of safety, community and connection.
- Prepare mentally and physically to spend extended periods of time in nature.
- Understand the expectations for behavior at Cal-Wood and consider how they are different from at home or school.
- Get to know their peers in a different way so as to build better understanding, empathy and relationships.
- Get to know their Cal-Wood instructor and adult chaperones so they feel safe, comfortable and supported.
- Connect with the land, plants and animals of the Colorado mountains.
- Identify their thoughts and feelings about the experience and reflect on their strengths and opportunities for growth as individuals and groups.

Activities may include icebreakers, name games, creating behavior agreements, learning rules, team building challenges, mind mapping, solo sits, nature journaling, supervised downtime with peers, student-created skits, and unrushed time to explore nature.

To accomplish the above, teachers will choose **3 lessons for their 3-day programs**. In place of the 4th lesson, we will ensure that each learning group has time for connecting to the people and place that makes Cal-Wood so special!

Winter Programs

The majority of our programs are available year-round; however, if you are visiting during the snowy months you may wish to enjoy some of our winter-specific programs.

Winter Animal Adaptations: “How do animals survive the cold and snow?” is the central question in this Cal-Wood program, which features students taking a closer look at winter adaptations, locating animal homes and tracks, and testing their own winter shelters.

2020 Colorado Academic Standards Addressed: Earth & Space Science, Life Science

Winter Survival Skills: During winter our regular survival skills course is supplemented with instruction on building snow shelters (quinzee), outdoor cooking, fire building, and hypothermia prevention. Snowshoeing may also be requested as part of this program if snowpack permits.

2020 Colorado Academic Standards Addressed: Earth & Space Science, Life Science

Themed Programs:

You may want to consider choosing a themed program for your Cal-Wood visit. Below are examples of lesson combinations that provide a well-balanced, connected program of integrated topics.

Winter Outdoor Skills! Winter Survival Skills, Nature Awareness, & Orienteering

Amazing Animals in Winter! Winter Animal Adaptations, Predator vs Prey & Nature-Based Inquiry (Instructor's choice)

Changing Landscapes! Fire Ecology, Watersheds and Floods, New! Rocks, Minerals & Mining

Colorado Land and History! Homestead, New! Rocks, Minerals & Mining, & Natural Resources Nonrenewable and Renewable

Late Spring Amazing Animals! Animal Adaptations, Pond Study & Predator vs Prey

Late Spring Outdoor Skills! Survival Skills, Archery & Teambuilding

Late Spring Plant & Animal Survival! Fire Ecology (Plant Survival), Animal Adaptations (Animal Survival) & Pond Study (Ecosystem Survival)

Late Spring Water Theme! Pond Study, Landforms & Watersheds & Floods

The Standards

Each lesson subject below has a description. After the description we list the 2020 Colorado Academic Standards for 5th grade and Middle School that are covered in the lesson.

Academic Offerings:

Lessons are listed in alphabetical order. **The lessons in red are recently updated or new!**

Animal Adaptations

Archery - Seasonal Late Spring

Climate Change

New! Compass Course

Eco Art

Fire Ecology

Gold Rush - Seasonal Late Spring

Homestead

Landforms

Long Hike

Map & Compass - (No Orienteering Course)

Natural Resources (Nonrenewable and Renewable Resources)

Nature Awareness

Nature-Based Inquiry (Instructor's choice)

Orienteering Course

Pond Study - Seasonal Late Spring

Predator vs. Prey - 50+ Students

New! Rocks, Minerals & Mining

Service Project - Seasonal

Survival Skills

Teambuilding

Tree Science

Watersheds & Floods

Winter Animal Adaptations - Seasonal

Winter Survival Skills - Seasonal

Evening Programs:

Night Hike / Sunset Hike (depending on the season)

Cal-Wood Campfire

Wildlife Mysteries (Indoor)

The Beast (Indoor - 55 kids or less)

Egg Drop (Indoor)

*See full descriptions of each below

Lesson Descriptions:

Animal Adaptations: What is an adaptation? Through interactive activities, students learn the meaning of the word and how adaptations help animals at Cal-Wood survive. Students experience first-hand the benefits of being well adapted to one's environment while continually exploring the land for signs or remains of animals. If they are lucky, there's always that chance they will see or hear wildlife as well!

2020 Colorado Academic Standards Addressed: Physical Science, Life Science, Reading, Writing and Communication

Late Spring Archery - Seasonal: Students have a chance to learn how to safely aim and fire an arrow from a bow. At our own archery course with targets, groups will learn and practice aiming and shooting from recurve and compound bows. This lesson can provide a new outdoor experience for many, and history and physics lessons can be incorporated upon request.

Colorado Academic Standards Addressed: Physical Education

Climate Change: Students will begin with the basics of the difference between weather and climate by collecting data using weather tools. Then they will learn how the burning of fossil fuels is enhancing the greenhouse effect of the earth's atmosphere. To observe local climate change, students will look for evidence of how the changing climate has impacted the land. Students may also get the opportunity to engage in a project to alleviate climate change impacts at Cal-Wood, through invasive species mitigation, native seed planting, or fire mitigation. They will discuss other empowering steps they can take to reduce the human impact on the earth's changing climate.

2020 Colorado Academic Standards Addressed: Earth & Space Science

New! Compass Course: Once students learn how to pace and how to plot a bearing on a compass, small groups of students are sent onto our 4 acre compass course to find stations hidden in the woods, all the while gaining independence, confidence, and leadership skills.
Note: Involves a moderate amount of direct instruction.

2020 Colorado Academic Standards Addressed: Geography

Eco Art: From summiting a mountain and painting a watercolor landscape to lessons in quick nature sketches, art can be woven into any Cal-Wood program. Students will find inspiration from nature to then create an art piece of their own.

2020 Colorado Academic Standards Addressed: Visual Arts

Fire Ecology: The Cal-Wood Fire took place in October 2020 and with restoration efforts underway, students will experience fire ecology in a very exciting way! In addition to learning the basics of fire ecology, students will get to walk into a burned area and become scientists in an outdoor laboratory! This program includes map reading, making observations and comparisons of burned and unburned areas, data collection, and seeing restoration of the forests in action. Students will also gain knowledge on how forest fires impact mitigated and unmitigated land, which is an important topic for the future management of Colorado forests.

2020 Colorado Academic Standards Addressed: Life Science, Earth and Space Science

Late Spring Gold Rush - Seasonal: Students play an exciting interactive game where they take on the role of a miner in late 1800's Colorado and visit mining sites at Cal-Wood. Students also learn about the experience of the native people that lived in Colorado before the discovery of gold changed their home and the lives of their children greatly. Students will have to make decisions about how to spend their money on transportation and mining equipment, in order to try to make a profit in a risky market. Through reflection activities, students will consider the perspectives of different people during this time of Colorado history. Through the stories of their characters, students can understand the hardships of mining - with the luck of rolling a dice, students will see if they struck it rich, or lost it all!
Note: Involves moderate amounts of direct instruction.

2020 Colorado Academic Standards Addressed: History, Geography, Economics, Earth & Space Science

Homestead: The Cruthers family homestead house and schoolroom sets the stage for students to experience life on a homestead in the year 1901. Students explore the cabin and outbuildings, handle artifacts, and pose as students in a strict one room schoolhouse, all while learning how the Homestead Act changed Colorado and the West. This homestead experience pairs well with a natural resource lesson as students imagine this simple lifestyle and can think about basic human needs and the resources available to the Cruthers in 1901.

2020 Colorado Academic Standards Addressed: History, Geography, Economics, Civics, Earth & Space Science

Landforms: Students hike to vistas on Cal-Wood property overlooking Forest Service land and Rocky Mountain National Park where they can view and identify many different landforms. Using natural materials, students construct miniature landscapes in small groups and discuss how these landforms are created on a larger scale. Adding water or snow to the landscapes will demonstrate the key processes of weathering, erosion and deposition.

2020 Colorado Academic Standards Addressed: Earth & Space Science

Long Hike: This lesson includes a long hike option where students will get to experience a variety of Cal-Wood's landscapes. Students will be challenged on an all-day hike, where they will either summit a peak, reach a viewpoint, or take their adventure off-trail for a safe and fun "bushwhack". Along the way, students will learn about the local flora and fauna, history of the region, learn to push through challenges together, and engage in inquiry-based exploration of the natural world.

2020 Colorado Academic Standards Addressed: Physical Education, Geography

Map and Compass (No Orienteering Course): Students learn how to read a map and use a compass then get hands-on experience and practice using these tools around our 1,200 acre property! While navigating through Cal-Wood with their learning groups, students will gain independence, confidence and leadership skills. This lesson ties in well with landforms as they use topographic lines and identify different landforms they see on the map. **Note: Involves a moderate to high amount of direct instruction**

Nature Awareness: In this lesson, students learn how to open their senses and awareness and explore the world around them. They will develop basic naturalist skills, and an introductory knowledge of much of the local flora, fauna, and geology that make the Rocky Mountains unique, and have probably gone unnoticed in their own backyards! Students may track animals, discern different habitat types, read the weather, and appreciate the natural patterns all around them in nature. If requested, they will spend some time "alone" outdoors through a guided solo hike or solo sit. This offering allows for guided intentional nature connection through journaling, inquiry, exploration, and play, all while practicing Leave No Trace principles!

2020 Colorado Academic Standards Addressed: Life Science, Earth and Space Science, Physical Science

New! Nature-Based Inquiry (Instructor's Choice): Cal-Wood instructors guide the group in observing natural phenomena and facilitate questioning, analyzing evidence, constructing and discussing explanations. These inquiries will create opportunities for students to use NGSS Scientific Practices and explore ecology concepts such as interconnections, habitats, animal populations, diversity, climate change, adaptations and food chains.

2020 Colorado Academic Standards Addressed: Life Science, Earth & Space Science

Natural Resources (Nonrenewable and Renewable Resources): At Cal-Wood, there are many great places to talk about renewable and nonrenewable resources. From our beautiful forests to the old abandoned mines and a homestead house, students get interactive lessons and first hand experience in an area with a history of resource extraction.

2020 Colorado Academic Standards Addressed: History, Geography, Economics, Earth & Space Science

Orienteering Course: After an introductory lesson covering landforms, topographic lines, map reading, and compass use, small expedition parties are sent onto our 20 acre orienteering course with only a map and compass to guide them to the 8 hidden locations. This gives students the opportunity to practice leadership and teamwork skills, while gaining confidence in their ability to navigate independently. Note: Involves **HIGH** amounts of direct instruction.

2020 Colorado Academic Standards Addressed: History, Geography, Economics, Earth & Space Science

Late Spring Pond Study - Seasonal: Using the scientific method, students observe and explore abiotic and biotic aspects of a pond ecosystem. Students collect samples, identify macroinvertebrates and pool their findings to complete a water quality analysis experiment. Each student gets a fun outdoor laboratory experience where they can see one way scientists determine the health of a freshwater ecosystem.

2020 Colorado Academic Standards Addressed: Life Science, Earth and Space Science

Predator vs Prey (50+ Students): This is an exciting game of animal survival that is played by the entire school group on the last day. Acting as an animal in Cal-Wood's food chain, students look for shelter, water and food as they learn the difficulties of survival with concepts of biomagnification, predator/prey relationships and human impacts on a food web.

Colorado Academic Standards Addressed: Life Science, Physical Science, Earth & Space Science

New! Rocks, Minerals & Mining: Cal-Wood has an abundance of rock outcrops and old mining sites from the pioneering days that are available for exploration. This lesson includes opportunities to and look for gold, non-harmful amounts of uranium, and other interesting minerals. Cal-Wood hired a uranium expert to assess our old uranium mines and determined that they have very low levels of radiation (far below harmful levels) that are detectable. Students have a chance to use geiger counters and ultraviolet flashlights to prospect for uranium and other fluorescent minerals as they gain an understanding of the impacts of mining on people and the environment through various, engaging activities. At non-uranium sites, students will smash open and identify the mineral contents with loupes and identification guides, and perhaps even pan for gold.

2020 Colorado Academic Standards Addressed: 2020 Colorado Academic Standards Addressed: History, Geography, Economics, Civics, Earth & Space Science

Late Spring Service Project - Seasonal: There are seasonal opportunities for students to help with projects at Cal-Wood. These projects help us take care of the 1200 acres that is a classroom for so many! Projects include (and are not limited to) tree planting, slash pile building, trail maintenance, invasive species removal and much more!

Survival Skills: Students learn basic survival skills while exploring and testing themselves throughout Cal-Wood's 1200-acre forest. A variety of hands-on activities address what

essential items students should pack with them, how to prevent getting in a survival situation to begin with, and how to prioritize needs and stay alive if one is lost in the wilderness. Students will work together to create either mini or life-sized shelters, as well as develop other skills such as fire building, basic navigation, and first-aid.

2020 Colorado Academic Standards Addressed: Life Science

Teambuilding: A wide variety of games, activities, and challenges provide powerful opportunities for students to develop deeper trust and appreciation of one another, step outside of their comfort zones, hone critical communication and planning skills, and work together through tricky tasks towards success in a supportive environment. Students reflect on how they can carry their experiences, collaborative skills, and friendships back home and in school!

2020 Colorado Academic Standards Addressed: Physical Education

Tree Science: Students learn about tree science through a variety of exploration and hands-on activities. They will play a blindfolded game of “Meet a Tree” where they use their senses to note physical characteristics of trees and identify species with dichotomous keys. They learn the parts of a tree (roots, leaves, branches, bark, xylem, phloem) and how they function, as well as photosynthesis, tree adaptations, and the roles of trees in a habitat. Through activities such as tree coring (season dependent), tree measurements, or tree thinning, students will take on the role of a forest scientist to better understand what keeps a forest healthy.

2020 Colorado Academic Standards Addressed: Life Science, Earth and Space Science

Watersheds & Floods: Students build watershed models out of natural materials to visualize what defines a watershed and to predict how water flows across the Earth’s surface. Students hike along freshwater streams and ponds, learn about local watersheds, and do hands-on activities that emphasize human impacts on waterways. This lesson pairs well with our Pond Study program, in which students observe living organisms to determine habitat health.

2020 Colorado Academic Standards Addressed: Earth & Space Science, Life Science

Winter Ecology: “How do animals survive the cold and snow?” is the central question in this Cal-Wood program, which features students taking a closer look at winter adaptations, locating animal homes and tracks, and testing their own winter shelters.

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Winter Survival Skills: During winter our regular survival skills course is supplemented with instruction on building snow shelters (quinzee), outdoor cooking, fire building, and hypothermia prevention. Snowshoeing may also be requested as part of this program if snowpack permits.

2020 Colorado Academic Standards Addressed: Earth & Space Science, Life Science

Evening Programs

Night Hike / Sunset Hike (depending on the season)

Cal-Wood Campfire

The Beast (Indoor - 55 kids or less)

Egg Drop (Indoor)

Wildlife Mysteries (Indoor)

***See full descriptions of each below**

Night Hike (October-March): This hike begins after dark and will provide students an opportunity to confront their own hesitations with being outside at night. These hikes through forest or meadow will focus on opening up our own sensory awareness, learning more about nocturnal animals and their adaptations, and may include solo hikes or quiet time star-gazing and learning about the night sky.

2020 Colorado Academic Standards Addressed: Physical Science, Life Science

Sunset Hike (March - October): This hike begins as the sun is going down and animals are getting ready for the night. These hikes through forest or meadow will focus on animal adaptations and may include solo hikes or quiet time during the setting of the sun.

2020 Colorado Academic Standards Addressed: Physical Science, Life Science

Cal-Wood Campfire: A concoction of silly songs, exciting stories, skits, and marshmallows awaits students at a Cal-Wood campfire. This is a great time for community and sharing, and so we also invite students to prepare their own fun contributions (cabin skits, songs, talents, etc). The evening will end with some reflection on their time here at Cal-Wood and the power of positive experiences in nature.

2020 Colorado Academic Standards Addressed: Life Science, Social Studies

Wildlife Mysteries (indoor): Through hands-on exploration of animal pelts, skulls, and tracks, students will use their observation and inquiry skills to investigate and explain mysterious wildlife scenarios demonstrating predator/prey relationships and unique animal adaptations and behaviors.

2020 Colorado Academic Standards Addressed: Physical Science, Life Science, Reading, Writing and Communication

The Beast (Indoor Option - 55 kids or less): In this indoor team building activity, students work in small groups to construct a mock replica of THE BEAST. This night program focuses on practicing clear communication to accomplish a common goal. Members of the team are given roles (viewer, messenger, buyer, builder) and are positioned in stations throughout the lodge.

They must pass accurate information down the chain from start to finish in order to create THE BEAST.

2020 Colorado Academic Standards Addressed: Reading, Writing & Communication

Egg Drop (Indoor option): In small groups, students act as engineers to design and build contraptions out of natural materials to protect an egg from falls of various heights. Students will work together to form a plan, buy materials, make decisions, and build a structure that will (hopefully!) keep their egg safe.

2020 Colorado Academic Standards Addressed: Reading, Writing & Communication