



**FOR YOUTH DEVELOPMENT®**  
**FOR HEALTHY LIVING**  
**FOR SOCIAL RESPONSIBILITY**

# **CURRICULUM & CO STATE ACADEMIC STANDARDS BOOKLET**

**YMCA of the Rockies– Estes Park Center**



# Outdoor Education Class Curriculum

YMCA of the Rockies' Outdoor Education Department makes education, curriculum, and state standards a top priority. We work to update our curriculum to meet your schools needs. We pride ourselves in having high quality educational programs. Depending on the length of your stay, you may participate in several class sessions that cover a wide range of educational programs and standards.

In developing our curriculum, we hope to make what your students are learning with our instructors applicable to what they've been learning or will learn in their classroom! All classes have been created with Colorado State Academic Standards in mind as found through the Colorado Department of Education. The Colorado Environmental Education Plan was also heavily utilized in the creation and development of our curriculum and program goals.

Curriculum is developed and created for 5th-8th grade students, but can be altered for all age groups. Each class is given an outline of information, lessons, and ideas for activities. All instructors are given the opportunity to alter the classes and design their classes to their liking. However, the core of all classes will remain the same and the key points and activities remains constant throughout our programming. On the following page are key questions for each class. These are the constant initiatives that will be taught throughout the curriculum by instructors.

## Outdoor Education Class List

### Teambuilding and Adventure

- Group Initiatives
- Teambuilding Course

### Outdoor Skills

- Outdoor Living Skills
- Route Orienteering
- Leave No Trace Camping Skills

### Ecology and Science

- Fire Ecology\*
- Beaver Ecology\*
- Montane Ecology\*
- Water Ecology\*
- Elk Ecology\*
- Rocks & Geology\*
- Mountain Formation\*

### Evening Programs

- Night Hike\*
- Campfire
- Astronomy\*
- Bats at Night\*
- Owls at Night\*

### Snow Programs

- Winter Survival
- Winter Ecology\*
- Snow Shoeing  
(must have at least 2" snow cover)
- Snow Play

# Class Key Questions

## Outdoor Living Skills

1. What are things to look for in your environment when you become lost?
2. What's the procedure for if you get lost?
3. What are the different ways to build a shelter?
4. What are the different ways to build a fire?
5. What are three different knots?

## Route Orienteering

1. What is a topographic map?
2. What are the lines on a topographic map and what do they show?
3. What are the different parts of a map?
4. What are the different parts of a compass?
5. What are the steps in following a bearing?
6. Can you identify a valley on a topographic map? A peak? A meadow? A river?

## Leave No Trace Camping Skills

1. What are the 7 principles to Leave No Trace?
2. What are the 10 essentials in planning for the wilderness?
3. Where is a good place to set up camp when in the wilderness?
4. What are three things one should do in planning for a trip?
5. How are you respectful to wildlife while in the wilderness?

## Fire Ecology

1. What adaptations do tree species in the montane forest have to withstand wildfire?
2. What is succession?
3. What is a WUI?
4. How does wildfire affect watersheds?
5. What are the negative impacts of wildfire?
6. What are the positive impacts of wildfire?
7. What are some fire mitigation techniques?

## Beaver Ecology

1. How can you tell there was previous beaver activity in the area?
2. What's the difference between a beaver dam and a beaver lodge?
3. What is a keystone species?
4. What animals benefit or rely on the beaver?
5. What physical/behavioral adaptations help in beaver survival?
6. What are the positive/negative impacts of beaver to an area or ecosystem?

## Montane Ecology

1. What are the tree trees identified in Montane Ecology today?
2. What is a producer? Consumer? Decomposer?
3. What is a predator? Prey?
4. What is the difference between an omnivore, herbivore, and carnivore?
5. What are some issues that occur within an ecosystem?

## Water Ecology

1. What is a watershed? A riparian zone?
2. Looking at the physical aspects of the waterway, is it healthy?
3. Looking at the chemical aspects of the waterway, is it healthy?
4. Looking at the biotic aspects of the waterway, is it healthy?
5. What factors can affect the quality of a waterway?

## Elk Ecology

1. How can you identify an elk?
2. How have elk impacted human life? And how have humans impacted elk?
3. What are signs of strong genetic traits past down from parents?
4. What genetic traits are needed in order for elk to survive winters?
5. What are the negative impacts to an area caused by elk?
6. What environmental changes have caused change in the elk? Past, present, and future?

## Rocks & Ecology

1. What are the three processes in rock formation?
2. What is the difference between rocks and minerals?
3. What are three things one should do in planning for a trip?

## Mountain Formation

1. Describe a process thought to have created the Rocky Mountain Range.
2. What are the different parts of a moraine?
3. Describe a glacier.
4. What created Earth's surface?



# Fifth Grade Correlations

Subject	Expectation Description	Recommended Classes
<b>Science</b>		
Physical Science		
Standard 1, GLE 1	Mixtures of matter can be separated regardless of how they were created; all weight and mass of the mixture are the same as the sum of weight and mass of its parts.	Fire Ecology, <b>Rock &amp; Ice</b>
Life Science		
Standard 2, GLE 1	All organisms have structures and systems with separate functions.	Beaver Ecology, Montane Ecology, Elk Ecology, Bat Ecology
Earth Systems Science		
Standard 3, GLE 1	Earth and sun provide a diversity of renewable and nonrenewable resources.	Montane Ecology, Beaver Ecology, Elk Ecology, Water Ecology, <b>Rock &amp; Ice</b>
Standard 3, GLE 2	Earth's surface changes constantly through a variety of processes and forces.	Montane Ecology, Beaver Ecology, Elk Ecology, Water Ecology, <b>Rock &amp; Ice</b>
<b>Comprehensive Health</b>		
Prevention and Risk Management		
Standard 4, GLE 2	Demonstrate pro-social behaviors that reduce the likelihood of physical fighting, violence, and bullying.	Group Initiatives
<b>Math</b>		
Data, Analysis, Statistics, and Probability		
Standard 3, GLE 1	Visual displays are used to interpret data.	Water Ecology
<b>Reading, Writing, Communicating</b>		
Oral Expression and Listening		
Standard 1, GLE 1	Effective communication requires speakers to express an opinion, provide information, describe a process, and persuade an audience.	Water Ecology, Fire Ecology
Research and Reasoning		
Standard 4, GLE 1	High-quality research requires information that is organized and presented with documentation.	Water Ecology
Standard 4, GLE 3	Quality reasoning requires asking questions and analyzing and evaluating viewpoints.	Water Ecology, Fire Ecology, <b>Rock &amp; Ice</b> , Astronomy
<b>Social Studies</b>		
Geography		
Standard 2, GLE 1	Use various geographic tools and sources to answer questions about the geography of the United States.	Route Orienteering
Standard 2, GLE 2	Causes and consequences of movement.	<b>Rock &amp; Ice</b> , Astronomy

# Sixth Grade Correlations

Subject	Expectation Description	Recommended Classes
<b>Science</b>		
Life Science		
Standard 2, GLE 1	Changes in environmental conditions can affect the survival of individual organisms, populations, and entire species.	Outdoor Living Skills, Beaver Ecology, Montane Ecology, Elk Ecology, Water Ecology, Fire Ecology, Bat Ecology
Standard 2, GLE 2	Organisms interact with each other and their environment in various ways that create a flow of energy and cycling of matter in an ecosystem.	Outdoor Living Skills, Beaver Ecology, Montane Ecology, Elk Ecology, Fire Ecology, Bat Ecology
Earth Systems Science		
Standard 3, GLE 1	Complex interrelationships exist between Earth's structure and natural processes that over time are both constructive and destructive.	Beaver Ecology, Montane Ecology, Elk Ecology, Fire Ecology, <b>Rock &amp; Ice</b> , Bat Ecology
Standard 3, GLE 2	Water on Earth is distributed and circulated through oceans, glaciers, rivers, ground water, and the atmosphere.	Water Ecology, <b>Rock &amp; Ice</b>
Standard 3, GLE 3	Earth's natural resources provide the foundation for human society's physical needs. Many natural resources are nonrenewable on human timescales, while others can be renewed or recycled.	Beaver Ecology, Montane Ecology, Elk Ecology, <b>Rock &amp; Ice</b>
<b>Comprehensive Health</b>		
Physical and Personal Wellness		
Standard 2, GLE 3	Comprehend the relationship between feelings and actions.	Teambuilding
Prevention and Risk Management		
Standard 4, GLE 3	Demonstrate self-management skills to reduce violence and actively participate in violence prevention.	Teambuilding
Standard 4, GLE 4	Demonstrate ways to advocate for safety, and prevent unintentional injuries.	Outdoor Living Skills, Fire Ecology
<b>Reading, Writing, and Communicating</b>		
Oral Expression and Listening		
Standard 1, GLE 1	Successful group discussions require planning and participation by all.	Outdoor Living Skills, Route Orienteering, Group Initiatives
Research and Reasoning		
Standard 4, GLE 3	Monitoring the thinking of self and others is a disciplined way to maintain awareness.	Outdoor Living Skills, Route Orienteering, Group Initiatives
<b>Social Studies</b>		
Geography		
Standard 2, GLE 1	Use geographic tools to solve problems.	Outdoor Living Skills, Route Orienteering
Standard 2, GLE 2	Human and physical systems vary and interact.	Beaver Ecology, Montane Ecology, Water Ecology, Fire Ecology, <b>Rock &amp; Ice</b> , Bat Ecology

# Seventh Grade Correlations

Subject	Expectation Description	Recommended Classes
<b>Science</b>		
Physical Science		
Standard 1, GLE 1	Mixtures of substances can be separated based on their properties such as solubility, boiling points, magnetic properties, and densities.	Water Ecology, <b>Rock &amp; Ice</b>
Life Science		
Standard 2, GLE 1	Individual organisms with certain traits are more likely than others to survive and have offspring in a specific environment.	Beaver Ecology, Montane Ecology, Elk Ecology, Fire Ecology, Bat Ecology, Owl Ecology
Standard 2, GLE 4	Photosynthesis and cellular respiration are important processes by which energy is acquired and utilized by organisms.	Montane Ecology, Water Ecology
Standard 2, GLE 5	Multiple lines of evidence show the evolution of organisms over geologic time.	Beaver Ecology, Montane Ecology, Elk Ecology, Fire Ecology, Bat Ecology
Earth Systems Science		
Standard 3, GLE 1	Major geologic events such as earthquakes, volcanic eruptions, mid-ocean ridges, and mountain formation are associated with plate boundaries and attributed to plate motions.	<b>Rock &amp; Ice</b>
Standard 3, GLE 2	Geologic time, history, and changing life forms are indicated by fossils and successive sedimentation, folding, faulting, and uplifting of layers of sedimentary rock.	Water Ecology, <b>Rock &amp; Ice</b>
<b>Comprehensive Health</b>		
Emotional and Social Wellness		
Standard 3, GLE 1	Demonstrate effective communication skills to express feelings appropriately.	Group Initiatives
Standard 3, GLE 2	Develop self-management skills to prevent and manage stress.	Group Initiatives
Standard 4, GLE 2	Demonstrate safety procedures for a variety of situations.	Outdoor Living Skills, Route Orienteering, Group Initiatives
<b>Math</b>		
Patterns, Functions, and Algebraic Structures		
Standard 2, GLE 2	Equations and expressions model quantitative relationships and phenomena.	Water Ecology
<b>Reading, Writing, and Communicating</b>		
Oral Expression and Listening		
Standard 1, GLE 2	Small and large group discussions rely on active listening and the effective contributions of all participants.	Outdoor Living Skills, Group Initiatives
Research and Reasoning		
Standard 4, GLE 1	Answering a research question logically begins with obtaining and analyzing information from a variety of sources.	Water Ecology
<b>Social Studies</b>		
Geography		
Standard 1, GLE 1	Use geographic tools to gather data and make geographic inferences and predictions.	Outdoor Living Skills, Route Orienteering
Standard 1, GLE 2	Regions have different issues and perspectives.	Water Ecology, Fire Ecology

# Eighth Grade Correlations

Subject	Expectation Description	Recommended Classes
<b>Science</b>		
Physical Science		
Standard 1, GLE 3	Distinguish between physical and chemical changes, noting that mass is conserved during any change.	Rock & Ice, Fire Ecology
Life Science		
Standard 2, GLE 1	Human activities can deliberately or inadvertently alter ecosystems and their resiliency.	Outdoor Living Skills, Beaver Ecology, Montane Ecology, Elk Ecology, Water Ecology, Fire Ecology
Standard 2, GLE 2	Organisms reproduce and transmit genetic information (genes) to offspring, which influences individuals' traits in the next generation.	Beaver Ecology, Montane Ecology, Elk Ecology, Owl Ecology
Earth Systems Science		
Standard 3, GLE 3	The solar system is comprised of various objects that orbit the Sun and are classified based on their characteristics.	Astronomy
Standard 3, GLE 4	The relative positions and motions of Earth, Moon, and Sun can be used to explain observable effects such as seasons, eclipses, and Moon phases.	Astronomy
<b>Comprehensive Health</b>		
Prevention and Risk Management		
Standard 4, GLE 5	Demonstrate ways to advocate for a positive, respectful school and community environment that supports pro-social behavior.	Group Initiatives
<b>Math</b>		
Shape, Dimension, and Geometric Relationships		
Standard 4, GLE 2	Direct and indirect measurement can be used to describe and make comparisons.	Route Orienteering, Water Ecology
<b>Social Studies</b>		
Geography		
Standard 1, GLE 1	Use geographic tools to analyze patterns in human and physical systems.	Route Orienteering
Standard 1, GLE 2	Conflict and cooperation occur over space and resources.	Beaver Ecology, Montane Ecology, Water Ecology, Fire Ecology, Bat Ecology

