

Teaching Activity Guide

A Day

on the

Mountain

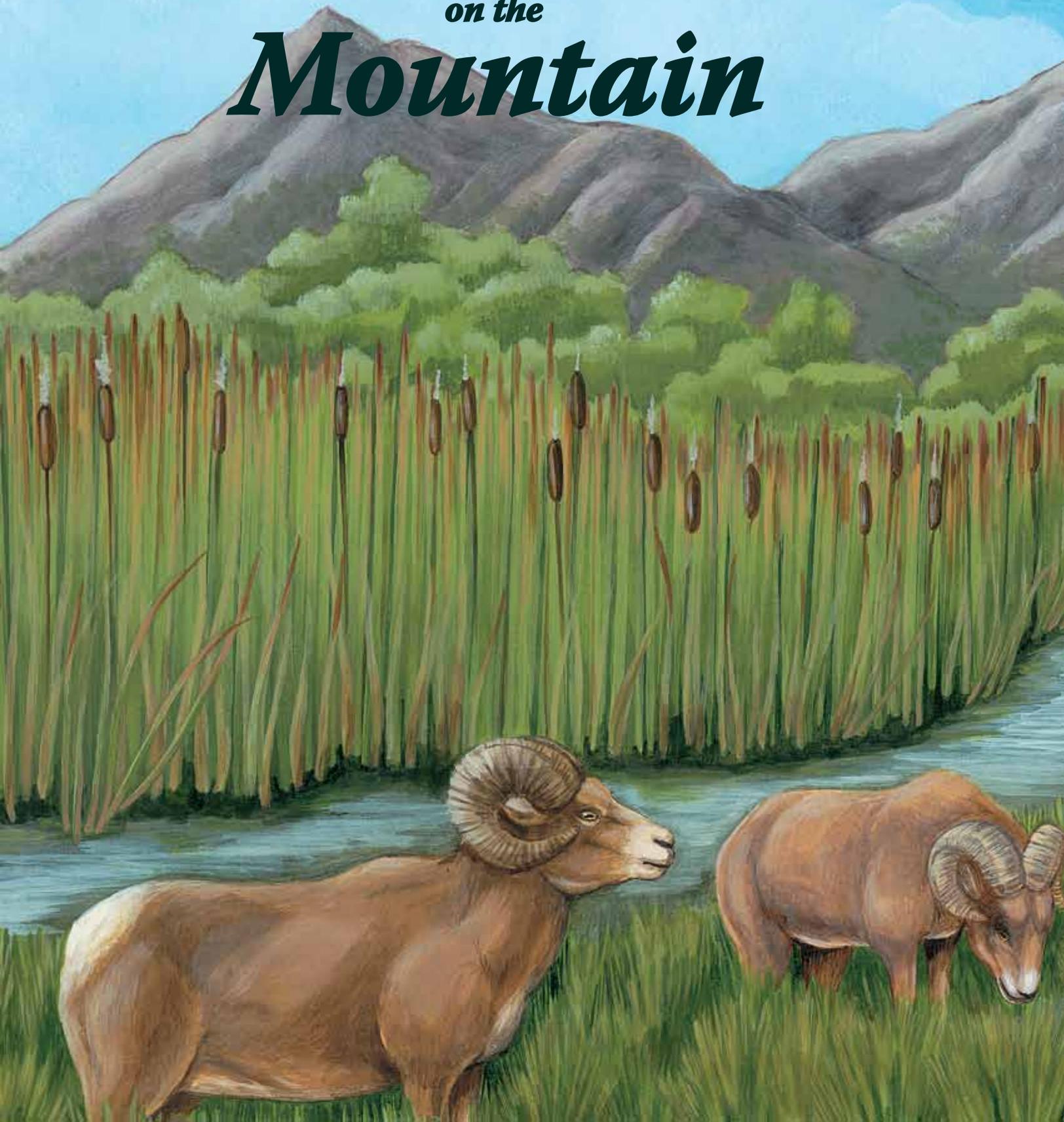


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How to Use This Activity Guide

There are a wide variety of activities that teach or supplement all curricular areas. The activities are easily adapted up or down depending on the age and abilities of the children involved. And, it is easy to pick and choose what is appropriate for your setting and the time involved. Most activities can be done with an individual child or a group of children.

Glossary/Vocabulary words: Words may be written on index cards, a poster board, or on a chalkboard for a “word wall.” If writing on poster board or chalkboard, you might want to sort words into nouns, verbs, etc. right away to save a step later if using for Silly Sentences. Leaving the words posted (even on a refrigerator at home) allows the children to see and think about them frequently. The glossary has some high-level words. Feel free to use only those words as fit your situation.

Silly Sentence Structure Activity: Game develops both an understanding of sentence structure and the science subject. Use words from the “word wall” to fill in the blanks. After completing silly sentences for fun, have children try to fill in the proper words by looking for the information in the book.

Sequence Sentence Strips: Cut into sentence strips, laminate if desired, and place in a “center.” Have children put the events in order. Children may work alone or in small groups. Cards are in order but should be mixed up when cut apart.

Animal Card Games:

Sorting: Depending on the age of the children, have them sort cards by:

| | |
|---|-------------------------|
| where the animals live (habitat) | tail, no tail |
| number of legs (if the animals have legs) | colors or skin patterns |
| how they move (walk, swim, jump, or fly) | animal class |
| type of skin covering (hair/fur, feathers, scales, moist skin) | |
| what they eat (plant eaters/herbivores, meat eaters/carnivores, both/omnivores) | |

Memory Card Game: Make two copies of each of the sorting card pages and cut out the cards. Mix them up and place them face down on a table. Taking turns, each player should turn over two cards so that everyone can see. If the cards match, he or she keeps the pair and takes another turn. If they do not match, the player should turn the cards back over and it is another player’s turn. The player with the most pairs at the end of the game wins.

Who Am I? Copy and cut out the cards. Poke a hole through each one and tie onto a piece of yarn. Have each child put on a “card necklace” without looking at the animal pictured on it. The card hangs down the back. The children get to ask each person one “yes/no” question to try to guess their animals. If a child does not know the answer, they should say they don’t know. This is a great group activity and a great “ice-breaker” for children who don’t really know each other.

Charades: One child selects a card and must act out what the animal is so that the other children can guess. The actor may not speak but can move like the animal, can imitate body parts or behaviors. For very young children, you might let them make the animal sound. The child who guesses the animal becomes the next actor.

Math Card Games (Make four copies of the math cards to play these games):

Tens Make Friends Memory Game is a combination of a memory and adding game.

- Play like the memory game, above.
- If the animal numbers add up to 10, the child keeps the pair and takes another turn.
- If they do not add up to ten, the player should turn the cards back over and it is another player’s turn.

Go Fish for Fact Families is a twist on “Go Fish.”

- Shuffle cards and deal five cards to each player. Put the remaining cards face down in a draw pile.
- If the player has three cards that make a fact family, he/she places them on the table and recites the four facts related to the family. For example, if someone has a 2, 3, and 5, the facts are: $2 + 3 = 5$, $3 + 2 = 5$, $5 - 2 = 3$, $5 - 3 = 2$.
- The player then asks another player for a specific card rank. For example: “Sue, please give me a 6.”
- If the other player has the requested card, she must give the person her card.
- If the person asked doesn’t have that card, he/she says, “Go fish.”
- The player then draws the top card from the draw pile.
- If he/she happens to draw the requested card, he/she shows it to the other players and can put the fact family on the table. Otherwise, play goes to the next person.
- Play continues until either someone has no cards left in his/her hand or the draw pile runs out. The winner is the player who then has the most sets of fact families.

What Do Children Already Know?

Young children are naturally inquisitive and are sponges for information. The whole purpose of this activity is to help children verify the information they know (or think they know) and to get them thinking “beyond the box” about a particular subject.

Before reading the book, ask the children what they know about the subject. A list of suggested questions is below. The children should write down their “answers” (or adults for them if the children are not yet writing) on the chart found in Appendix A, index cards, or post-it notes.

Their answers should be placed on a “before reading” panel. If doing this as a group, you could use a bulletin board or even a blackboard. If doing this with individual children, you can use a plain manila folder with the front cover the “before reading panel.” Either way, you will need two more “panels” or sections. One called “correct answer” and the other “look for correct answer.”

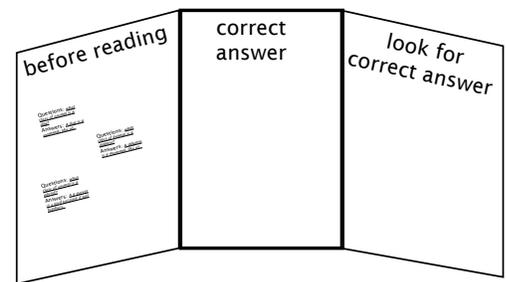
Do the children have any more questions about the subject? If so, write them down to see if the question is answered in the book.

After reading the book, go back to the questions and answers and determine whether their answers were correct or not.

If the answer was correct, move that card to the “Information Verified” panel. If the answer was incorrect, go back to the book to find the correct information.

If the child/children have more questions that were not answered, they should look them up.

When the answers have been found and corrected, the card can be moved to the “correct answer” panel.



Pre-Reading Questions

What animals live on or around mountains?

Can plants and animals that live at the bottom of the mountain live at the top of the mountain too?

What is “elevation?”

How does elevation affect plants and animals?

How does elevation compare to the distance from the equators or closeness to the poles?

What is a “tree line?”

What kind of plants and animals live above the tree line?

How do hummingbirds help flowers?

How are salamanders like frogs?

Thinking it Through & Writing Prompts

Write a song about climbing a mountain.

Can you think of another title for the book?

Does this story remind you of any other story that you've read? If so, what and how are they alike? How are they different?

Do any of the animals remind you of someone that you know? If so, how?

Describe the location of where this story took place. Can you find mountain ranges on a map or globe?

Have you even seen any of these animals? If so, describe where you saw them and what they were doing (if you can remember).

What facts are mentioned in the text?

What, if anything, can be inferred from the text?

Pause during second readings and ask the child/children if they remember what happens next.

Comprehension Questions

What happened to the habitats as the readers "climbed" higher and higher?

What were the black bear cubs doing?

What was the mother bear prepared to do?

What was the owl throwing up and why?

What was the snake doing? Do you know why snakes do that?

What does a Clark's Nutcracker do with seeds and why?

What do the bighorn sheep see?

How do the hummingbirds help the flowers?

What did the yellow bellied marmot do when he saw the eagle?

Where does a mother salamander lay her eggs?

Are mountain goats native to all mountains?

How do the lichens help other living things on the mountain?

What are the snow fleas doing?

Vocabulary Game

This activity is designed to get children thinking of vocabulary words that will then be used as the beginning vocabulary list for a science lesson.

Select an illustration from the book and give the children a specific length of time (five minutes?) to write down all the words they can think of about the particular subject. If you do not have classroom sets of the book, it is helpful to project an illustration on a white board. Check Web site (www.ArbordalePublishing.com) for book “previews” that may be used.

The children’s word list should include anything and everything that comes to mind, including nouns, verbs, and adjectives. At the end of the time, have each child take turns reading a word from his/her list. If anyone else has the word, the reader does nothing. However, if the reader is the only one with the word, he/she should circle it. While reading the list, one person should write the word on a flashcard or large index card and post it on a bulletin board or wall. At the end, the child with the most words circled “wins.” And you have a start to your science vocabulary list. Note if a child uses an incorrect word, this is a good time to explain the proper word or the proper usage.

Using the Words

The following activities may be done all at once or over a period of several days.

- Continue to add words to the vocabulary list as children think of them.
- Sort vocabulary words into nouns, verbs, adjectives, etc. and write what they are on the backs of the cards. When the cards are turned over, all you will see is “noun,” etc. (these can then be used to create silly sentences, below).
- Now sort the vocabulary words into more specific categories. For example, nouns can be divided into plants, animals, rocks, minerals, etc. They can be divided into living/non-living, or into habitat-related words.
- Have children create sentences using their vocabulary words. Each sentence could be written on a separate slip of paper.
- Have children (individually or in small groups) sort and put sentences into informative paragraphs or a story.
- Edit and re-write paragraphs into one informative paper or a story.

Silly Sentence Structure Activity

A plant or animal's _____ is where it lives and can get _____, water, air, space and shelter.
noun noun

The habitat is part of an _____ where many different _____s and _____s interact.
noun noun noun

Ecosystems include _____ing and _____ing things (like soil and rocks).
adjective adjective

Ecosystems _____ with the height above sea level (_____) and the distance from the _____.
verb noun noun

The _____ gets _____er and _____er the higher you _____ or the closer you are to the poles.
noun adjective adjective verb

The _____ or tundra ecosystems are treeless areas high on mountains or in the Polar Regions.
adjective

Because of the strong _____s and _____ temperatures, both ecosystems are _____ or ice-covered with low-growing lichens, mosses, and stunted shrubs.
noun adjective noun

Plants and animals _____ing in these areas are well adapted to cold, harsh climates.
verb

_____ ecosystems are mountain ecosystems found below the tree line, including both _____ (sometimes called taiga) forests and grassy meadows.
adjective adjective

Word Families and Rhyming Words

Word families are groups of words that have some of the same combinations of letters in them that make them sound alike...or rhyme. For example ad, add, bad, brad (Brad), cad, Chad, clad, dad, fad, gad, glad, grad, had, lad, mad, pad, plaid (silent 'i'), sad, shad, and tad all have an "ad" letter combination and rhyme.

- Find and write down rhyming words in the poem.
- Are they in the same word family?
- If so, circle the combination of letters that are the same.
- Can you think of more words in the word family?

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Word Search

Find the hidden words. Even non-reading children can match letters to letters to find the words! Easy – words go up to down or left to right (no diagonals). For older children, identify the coordinates of the first letter in each word (number, letter).

| | A | B | C | D | E | F | G | H | I | J |
|----|---|---|---|---|---|---|---|---|---|---|
| 1 | T | U | N | D | R | J | A | Y | S | I |
| 2 | A | T | G | O | T | S | N | A | K | E |
| 3 | Y | M | E | A | D | O | W | L | S | L |
| 4 | H | B | C | K | I | S | U | P | E | E |
| 5 | O | I | L | T | S | V | A | I | T | V |
| 6 | O | B | I | G | H | O | R | N | P | A |
| 7 | N | E | M | Y | E | L | G | E | U | T |
| 8 | E | A | B | K | E | B | T | I | K | I |
| 9 | A | R | E | S | P | C | E | F | N | O |
| 10 | I | S | M | O | U | N | T | A | I | N |

MOUNTAIN
ELEVATION
ALPINE
BEARS
OWLS
SNAKE
BIGHORN
SHEEP
CLIMB
MEADOW

Edible Sorting and Classifying Activity

Gather a cup of edible “sorting items.” For example:

As many different kinds of M&Ms as you can find

- Chocolate & peanut butter chips
- Hershey Kisses
- Peanuts or other type of nuts



Ask the children to sort the items into groups. There is no right and wrong, only what makes sense to the child. When finished, ask the child:

What criteria or attribute (color, size, ingredient, etc.) did you use to sort the items?

- Are there some items that fit more than one group or don't fit any group?
- Is it easy to sort or were there some items that were a little confusing?

If more than one person did this, did everyone sort by the same criteria? To extend the learning, graph the attributes used to sort the items, (blank graph below).

Graph the attributes that children used to sort their items.

What was the most common attribute (size, shape, color, etc.) used?

| | | | | |
|-----------|--|--|--|--|
| 10 | | | | |
| 9 | | | | |
| 8 | | | | |
| 7 | | | | |
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| attribute | | | | |

Classifying Animals

Just as we sort candy, scientists sort all living things into groups to help us understand and connect how things relate to each other. Scientists ask questions to help them sort or classify animals.

Based on the answers to the questions, scientists can sort the living organisms. The first sort is into a Kingdom. There are five commonly accepted Kingdoms: Monera, Protista, Fungi, Plantae, and Animalia. All of the living things in this book belong to Animalia or the Animal Kingdom.

The next big sort is into a Phylum. One of the first questions that a scientist will ask is whether the animal has (or had at some point in its life) a backbone. If the answer is “yes,” the animal is a vertebrate. If the answer is “no,” the animal is an invertebrate.

Each Phylum is broken down into Classes, like mammals, birds, reptiles, fish, insects, or gastropods (snails). Then each class can be broken down even further into orders, families, genus and species, getting more specific.

The scientific name is generally in Latin or Greek and is the living thing’s genus and species. People all over the world use the scientific names, no matter what language they speak. Most living organisms also have a common name that we use in our own language.

Some questions scientists ask:

- Does it have a backbone?
- What type of skin covering does it have?
- Does it have a skeleton? If so, is it inside or outside of the body?
- How many body parts does the animal have?
- Does it get oxygen from the air through lungs or from the water through gills?
- Are the babies born alive or do they hatch from eggs?
- Does the baby drink milk from its mother?
- Is it warm-blooded or cold-blooded?

Vertebrate Classes

Mammals:

hair, fur, whiskers, or quills at some point during their lives
backbone (vertebrate)
inside skeleton (endoskeleton)
lungs to breathe
most give birth to live young
produce milk to feed young
warm-blooded

Birds:

feathers
backbone (vertebrate)
inside skeleton (endoskeleton)
lungs to breathe
hatch from eggs
warm-blooded

Reptiles:

dry scales or plates
backbone (vertebrate)
inside skeleton (endoskeleton); most turtles also have a hard outer shell
lungs to breathe
most hatch from leathery eggs
cold-blooded

Warm-blooded animals make their own heat and have a constant body temperature

Cold-blooded animals' body temperature comes from their surroundings

Fish:

most have scales covered with a thin layer of slime
backbone (vertebrate)
inside skeleton (endoskeleton)
gills to breathe
babies are either born alive or hatch from eggs
cold-blooded

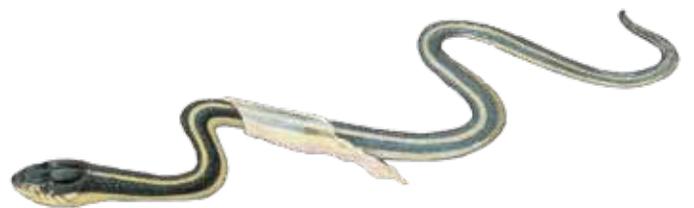
Amphibians:

soft, moist skin
backbone (vertebrate)
inside skeleton (endoskeleton)
most hatchlings are called larvae or tadpoles and live in water, using gills to breathe
as they grow, they develop legs and lungs and move onto land
cold-blooded

Using the sorting cards, sort the animals into their class.

Animal Sorting Cards





Scientific Names

Why do we use scientific names? We call most plants and animals by common names, or names that are familiar to us. But sometimes those same animals are called by a different name in a different part of the country, not to mention other languages. So if a scientist is talking about a particular plant or animal, how does a scientist in another country know what that plant or animal is? The scientific name is generally in Latin or Greek and is the living thing's genus and species. Scientist all over the world use the scientific names, no matter what language they speak.

Here is a list of the various species illustrated in the book. Can you find them in the art?

Cover

- Bighorn sheep: *Ovis canadensis*
- Great gray owl: *Strix nebulosa*
- Mountain goat: *Oreamnos americanus*
- Black bear: *Ursus americanus*
- Clark's nutcracker: *Nucifraga columbiana*
- Broad-tailed hummingbird: *Selasphorus platycercu*
- Yellow-bellied marmot: *Marmota flaviventris*
- Western tiger swallowtail: *Papilio rutulus*
- Trees in background: lodgepole pines: *Pinus contorta*
- Shrub behind nutcracker: snowberry: *Symphoricarpos albus*
- Branch in front right corner: whitebark pine: *Pinus albicaulis*
- Red flowers on left: Indian paintbrush: *Castilleja sp.*
- Purple flowers on left: sidebells penstemon: *Penstemon secundiflorus*

Introduction Spread

- Trees: lodgepole pines: *Pinus contorta*

Bears

- Ponderosa pine: *Pinus ponderosa*
- Saskatoon/serviceberry: *Amelanchier alnifolia*
- Huckleberry: *Vaccinium sp.*
- Black bear: *Ursus americanus*

Great Gray Owl

- Great gray owl: *Strix nebulosa*
- Whitebark pine: *Pinus albicaulis*

Garter Snake

- Garter snake: *Thamnophis sp.*
- Ponderosa pine needles/cones: *Pinus ponderosa*

Clark's Nutcracker

- Clark's nutcracker: *Nucifraga columbiana*
- Whitebark pine: *Pinus albicaulis*

Bighorn Sheep

- Bighorn sheep: *Ovis canadensis*
- Cattails: *Typha sp.*
- Aspen trees: *Populus tremuloides*
- Saskatoon/serviceberry (foreground): *Amelanchier alnifolia*
- Rushes: *Juncus sp.*

Hummingbirds

- Broad-tailed hummingbird: *Selasphorus platycercu*
- Western tiger swallowtail: *Papilio rutulus*
- Bumblebee: *Bombus sp.*
- Silvery blue butterfly: *Glaucopsyche lygdamus*
- Indian paintbrush: *Castilleja sp.*
- Sidebells penstemon: *Penstemon secundiflorus*
- Blue mist penstemon: *Penstemon virens*
- Wild bergamot: *Monarda fistulosa*
- Hairy false goldenaster: *Heterotheca villosa*
- Lupine: *Lupinus sp.*

Marmot

- Yellow-bellied marmot: *Marmota flaviventris*

Salamander

- Long-toed salamander: *Ambystoma macrodactylum*
- Bigleaf maple: *Acer macrophylla*

Mountain Goats

- Mountain goat: *Oreamnos americanus*

Snow Fleas

- Snow fleas: *Hypogastrura sp.*
- Ponderosa pine trunk/needles: *Pinus ponderosa*

Lichens

- Elegant sunburst lichen: *Xanthoria elegans*
- Powder-edged speckled greenshield: *Flavopunctelia soredica*
- Varying rim-lichen: *Lecanora argopholis*
- Sagebrush rim-lichen: *Lecanora garovaglii*
- Treeflute: *Menegazzia terebrata*
- Hammered shield lichen: *Armelia sulcata*
- Map lichen: *Rhizocarpon geographicum*

Red-tailed hawk (concluding spread)

- Red-tailed hawk: *Buteo jamaicensis*
- Trees: lodgepole pines: *Pinus contorta*

Adaptations

Adaptations help animals to live in their habitat: to get food and water, to protect themselves from predators, to survive weather, and even to help them make their homes. Here are a few different types of adaptations.

Physical Adaptations

body parts

teeth—depends on type of food it eats
feet, flippers, fins—ability to move
placement of eyes
how does it get oxygen (gills or lungs)
ears—or how it hears/senses

body coverings

hair or fur
feathers
scales
moist skin

camouflage and protection

color of skin or pattern to blend into background.
mimicry: pretending to be something else to fool predators
poisonous or stinky smells

Behavioral Adaptations

instinct: behaviors or traits that the animals are born with
learned behavior: traits that animals learn to improve their chances of survival or to make their life easier
social groups versus solitary living
communication with other animals
defense/camouflage
reaction to cycles (day/night, seasons, tides, etc.)
migration: the seasonal movement of animals from one location to another
hibernation: a long, deep sleep in which the animal's breathing and heartbeat are slower than usual.

Pick an animal from the book and answer the following questions:
My animal is:

| | |
|---|---|
| <p>Where (in what kind of habitat) does your animal live?</p> | <p>What is one of its physical adaptations and how does it help the animal live in its environment?</p> |
|---|---|

| | |
|---|---|
| <p>What is another of its physical adaptations and how does it help the animal live in its environment?</p> | <p>What is another of its physical adaptations and how does it help the animal live in its environment?</p> |
|---|---|

What behavioral adaptations (if any) were mentioned in the story?

elevation

my definition

my drawing

tree line

my definition

my drawing

lichen

my definition

my drawing

subalpine

my definition

my drawing

Mountain True or False?

Circle whether you think the statement is true or false:

1. T/F Sub means under, beneath, or less than, as in subtraction.
2. T/F The subalpine climate is the coldest, harshest climate on earth.
3. T/F Conifer trees have leaves that turn bright red and orange in the fall.
4. T/F It's possible for a mountain to have a tropical rainforest on the bottom and a snow-capped mountain top.
5. T/F Bears, foxes, mice, birds and humans are just a few of the many animals that love eating wild berries.
6. T/F Lichens are a type of moss.
7. T/F Black bears are always a dark black.
8. T/F Great Gray Owls live hunt and capture food under snow using their sharp hearing.
9. T/F Garter snakes hibernate during the winter, often coiling with others of their same kind for body warmth.
10. T/F Clark's Nutcracker birds use a special pouch to carry seeds and bury them for later. By doing this, the birds help to spread pine seeds for new trees to grow.
11. T/F Bighorn sheep males make a loud noise that sounds like a big horn to attract females.
12. T/F Hummingbirds only live high in the mountains, above the tree line.
13. T/F Yellow-bellied marmots are related to rabbits and skunks.
14. T/F Salamanders need to live near streams, ponds, or lakes so the females can lay eggs in the water.
15. T/F Mountain goats are native to the northern Rocky and Cascade Mountains but were introduced to the southern Rocky Mountains where they compete with the native bighorn sheep for food (grasses, lichen, moss, or twigs).

Map Activity

Using these maps as a reference, color the areas where these animals live on the blank map (in appendix).

If desired, click on the animal name to go to the source of the map.

Do any animals live in the same state or province as you?



Bighorn Sheep



Black Bears



Clark's Nutcracker



Great Gray Owl



Yellow Bellied Marmot



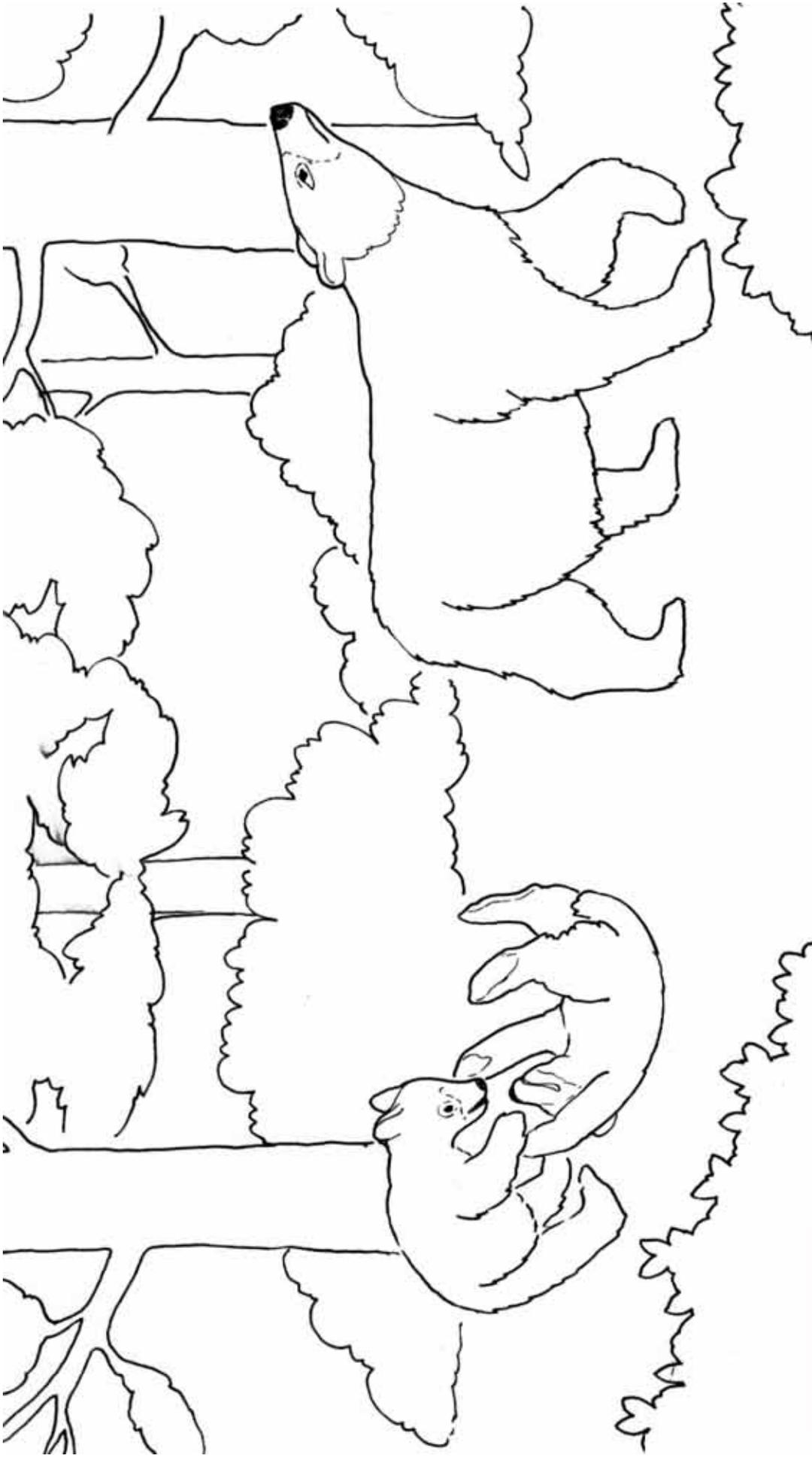
Mountain Goats



Broad tailed hummingbird

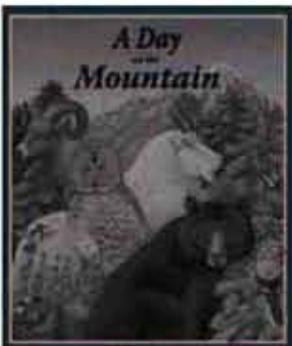


Long-toed salamander



Black bear mother and cub
from *A Day on the Mountain*
written by Kevin Kurtz, illustrated by Erin E. Hunter
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Hummingbirds, butterflies and wildflowers

from *A Day on the Mountain*

written by Kevin Kurtz, illustrated by Erin E. Hunter

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Long-toed salamander

from *A Day on the Mountain*

written by Kevin Kurtz, illustrated by Erin E. Hunter

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Glossary

| Word | Definition | part of speech | Spanish |
|--------------------|---|-----------------------|-----------------------|
| adapt | to change, to alter, to adjust to a changing environment or situation | verb | adaptar |
| adaptation | a physical or behavioral feature of a plant or animal that allows it to survive in its environment | noun | adaptación |
| affect | to have an influence on | verb | afectar |
| alpine | living or growing above the timber line, extreme weather conditions make survival impossible for tall trees | adjective | zone alpino |
| altitude | vertical elevation of an object above sea level | noun | altitud |
| amphibian | a cold-blooded animal with smooth, moist skin, lives in water and then land, breathes through gills and then lungs, egg frogs, newts, and salamanders | noun: classification | anfibio |
| animal | any member of the kingdom Animalia: can move voluntarily, get and eat food, and respond to stimuli | noun | animales |
| Antarctica | one of the seven continents | noun | Antártica |
| Arctic | land or water north of 60° N latitude | noun | Ártico |
| basic needs | plants and animals require food, water, oxygen, and a safe place to live | noun | necesidades básicas |
| bask | to lie in or be exposed to a pleasant warmth (sunshine) | verb | tomar el sol |
| behavior | an organism's actions and responses to its environment and other organisms in that same environment | noun | conducta |
| bighorn sheep | mountainous sheep with big, curly horns. | noun: animal | musmón |
| bird of prey | carnivorous birds that hunt and eat animals: owls, hawks, eagles, vultures, ospreys, peregrines | noun | ave rapaz |
| black bear | a small bear | noun: animal | el oso negro |
| boreal | of or pertaining to the north, north wind, or northern type of forest | adjective | boreal |
| browse | to eat twigs and leaves of woody plants | verb | ramonear |
| browser | an animal that eats twigs and leaves of woody plants: egg deer, moose | noun | ramoneo |
| burrow | an animals' hole or excavation in the ground used shelter or habitation | noun | madriguera |
| cache | a pile of food hidden away for Winter. | noun | escondrijo |
| camouflage | physical adaptations that allow organisms to hide in their surroundings | noun | camuflaje |
| camouflage | to conceal or hide by disguise or color | verb | camuflar |
| carnivore | an animal that eats the meat of other animals (consumer) | noun: classification | carnívora - carnívoro |
| carrion | the flesh of an animal that is already dead | noun | carroña |
| cavity | a hole in a tree that can be used by animals for shelter | noun | cavidad, hueco |
| change | to become different in some way | verb | cambiar |
| characteristic | a distinguishing trait, feature, quality, or property that compares or contrasts one object to another | adjective | característica |
| characteristic | a distinguishing trait, feature, quality, or property | noun | característica |
| Clark's nutcracker | a fairly common bird in the mountains in Western U.S. Known for it's pouch to carry seeds | noun: animal | cascanueces de Clark |
| classify | to arrange or organize according to class or category | verb | clasificar, ordenar |
| claws | sharp curved horny process on the toe of a bird or some mammals or reptiles, structure like a pincer on the limb of a crustacean or other arthropods | noun: body part | pinza, garra |

| Word | Definition | Part of Speech | Spanish |
|----------------|--|-----------------------|---------------------------------|
| climate | average weather condition at a place over a period of years based on temperature, wind velocity and precipitation | noun | ambiente |
| climb | to move from lower to higher position | verb | subir, escalar, trepar |
| cold | feeling the lack of heat or warmth | adjective | frio |
| community | a group of interdependent plants or animals in an ecosystem | noun | comunidad |
| competition | organisms have a wide variety of strategies that help them gather resources such as water, food, shelter, space, and mates | noun | competencia |
| cone | (science) cones are the structures in which the pollen (male cone) or seeds (female cone) of a tree are contained they are also important food items for many forest birds and mammals: (math) A solid bounded by a region called its base (usually a circle) in a plane and the surface formed by straight line segments which join points on the boundary of the base to a fixed point, called its vertex, not in the plane containing the base. | noun | cono |
| conifer | any of a group of needle and cone-bearing evergreen trees | noun: classification | conífera |
| crop | a pouch used to temporarily store food prior to eating or burying | noun: body part | buche |
| decay | to rot; to breakdown matter | verb | descaecer |
| decomposer | an organisms (scavengers, bacteria, and fungi) that eat dead plants and animals, making the materials available to be used again | noun | descomponedores |
| detritus | accumulated organic debris from dead organisms, an important source of nutrients in a food web | noun | detrito |
| ecosystem | a community of living organisms and how they relate interact with their living and non-living (rocks, soil) environment | noun | ecosistema |
| elevation | height above a given level, especially sea level | noun | elevación |
| environment | all living (plants, animals) and nonliving things (soil, weather, etc), that affect organisms in that community | noun | medio ambiente |
| equator | an imaginary circle around the Earth, halfway between the North and South Poles. | noun | ecuador |
| evergreen | a plant that retains green leaves throughout the year; life span of an individual leaf can be two to 15 years | noun: plant | árbol de hoja perenne |
| flora | plants living in a particular ecosystem | noun | flora |
| food | what is eaten to sustain life, provide energy, promote growth, etc | noun | alimento |
| food chain | a series of plants and animals linked together by their food relationships | noun | cadena alimenticia. |
| food web | a group of interconnected food chains in an ecosystem | noun | red alimenticia |
| graze | to eat growing grass | verb | apacentar |
| grazer | an animal who eats growing grass | noun | sustantivo |
| Great Gray Owl | a very large owl found in the Northern Hemisphere | noun: animal | búho gris grandes, carabo lapón |
| habitat | an address: a combination of the physical environment - the rocks and land and water - as well as all of the organisms that live in the same place | noun | hábitat |

| Word | Definition | Part of Speech | Spanish |
|---------------|---|-----------------------|-------------------------------|
| harsh | extremely unkind, cruel, or severe | adjective | violento |
| herbivore | an animal that eats only plants, a primary or first-order consumer | noun | herbívora - herbívoro |
| hike | to walk great distances | verb | ir de excursión |
| horn | the bony, permanent, hollow paired growths, often curved and pointed, from the upper part of the head of certain ungulate mammals (cattle, sheep, goats, or antelopes) | noun: body part | cuerno |
| hover | to flutter about in one area | verb | cernerse, suspender (suspend) |
| hummingbird | tiny bird with bright, iridescent feathers and long slender bills; wings are specialized for vibrating flight | noun: animal | colibrí |
| invertebrate | the group of animals without a backbone, this group makes up about 97% of all known animal species | noun: classification | invertebrados |
| Krummholz | a forest of wind-stunted trees near the mountain tree line | noun | |
| lichen | a plant that is a combination of a fungus and an alga; grows on trees or rocks | noun: plant | liquen |
| life cycle | a series of stages that occur during the lifetimes of all organisms | noun | ciclo de vida |
| live | to make ones home, where one's home is | verb | vivir |
| living | having life, able to grow and reproduce, use food | adjective | viviente |
| lungs | organs to provide an animal with oxygen | noun: body part | pulmones |
| mammal | a warm-blooded vertebrate that breathes with lungs and is covered with hair/fur (at some point in its life); females produce milk to feed their live offspring | noun: classification | mamífero |
| meadow | a grassy field | noun | prado |
| migration | animal movement to a different location during seasonal changes to better find food, and/or to breed or nurse young: may be repeated within a species from year-to-year and even from generation-to-generation; some animals migrate long distances, other animals migrate up and down a mountain | noun | migración |
| mountain | A massive and usually steep-sided, raised portion of the Earth's surface. Can occur as single peaks or as part of a long chain. They can form through volcanic activity, by erosion, or by uplift of the continental crust when two tectonic plates collide. | noun | montaña |
| mountain goat | sure-footed mammal of mountainous northwestern North America | noun: animal | montaña cabras |
| nectar | a sweet liquid from flowers, food for pollinators (hummingbirds, insects, and gathered by bees for making honey) | noun: plant part | néctar |
| needle | the narrow leaves of most coniferous trees | noun: plant part | agujas de los pinos |
| nest | a place used by birds, insects, fishes, turtles, rabbits, etc, for depositing their eggs or raising young | noun | nido |
| non living | objects that don't reproduce, grow, react, or use food | adjective | no vivientes |
| North Pole | the northernmost point of the Earth's axis | noun | Polo norte |
| omnivore | consumer: an organism that eats both animals and plants | noun | omnívora - omnívoro |

| Word | Definition | Part of Speech | Spanish |
|-----------------|---|-----------------------|-------------------|
| organism | any living thing that can carry out life processes on its own | noun | organismo |
| pellet | parts of a bird's food that some bird species occasionally throw up | noun | egagrópila |
| perch | a high resting place | noun | perca, mojerra |
| perch | to rest on a pole or something high, | verb | perca, mojerra |
| pine | a type of tree | noun: plant | pino |
| pinecones | the seeds of a pine tree | noun: plant part | piña |
| plant | any member of the kingdom Plantae, comprising multicellular organisms that typically produce their own food from inorganic matter by the process of photosynthesis | noun: plant | planta |
| ram | an adult male sheep | noun | carnero |
| regurgitate | to throw up | verb | regurgitar |
| reptile | a cold-blooded, air-breathing animal with scales or plates, a backbone; most hatch from eggs (snakes, turtles, crocodiles) | noun: classification | reptiles |
| salamander | amphibians that look like lizards but that return to water only to breed | noun: animal | salamandra |
| scientific name | a formal, Latinized name applied to a taxonomic group of animals or plants | noun | nombre científico |
| sea level | the level of the ocean's surface, usually measured from the middle of the high and low tide line | noun | nivel del mar |
| sedge | common grass-like plant found growing beside a wetland | noun: plant | ciperáceas |
| shed | to cast off, to separate | verb | quitarse |
| slither | to move in a sliding motion | verb | culebrear |
| snow | frozen precipitation | noun | nieve |
| snow flea | a type of springtail, seen jumping about on the surface of snow | noun: animal | pulgas de nieve |
| soar | to fly about | verb | cernerse |
| South Pole | the southernmost point of the Earth's axis | noun | Polo sur |
| subalpine | high altitude, just below the alpine elevation | adjective | subalpino |
| taiga | evergreen forest located just south of the tundra in northern latitudes (subarctic) or alpine elevations | noun | taiga |
| throw up | to vomit, to eject the contents of the stomach through the mouth | verb | vomitarse |
| tree | a type of plant with a permanent woody stem | noun: plant | árbol |
| tree line | the elevation or laltitude where the trees can't grow due to the harsh environment | noun | línea arbolada |
| treeless | without trees | adjective | sin árboles |
| tundra | a treeless area north of the Arctic tree line or above the tree line on mountains, having a permanently frozen subsoil and supporting low-growing vegetation such as lichens, mosses, and stunted shrubs. | noun: habitat | tundra |
| wary | being on guard against danger | adjective | cauteloso |
| wind | a natural motion of the air, especially a noticeable current of air moving in the atmosphere parallel to the Earth's surface | noun | viento |

Answers

Silly Sentences

A plant or animal's **habitat** is where it lives and can get **food**.
The habitat is part of an **ecosystem** where many different **plants** and **animals** interact.
Ecosystems include **living** and **non-living** things (like soil and rocks).
Ecosystems **change** with the height above sea level (**elevation**) and the distance from the **equator**.
The **climate** gets **colder** and **harsher** the higher you **climb** or the closer you are to the poles.
The **alpine** or **tundra** ecosystems are **treeless** areas high on mountains or in the Polar Regions.
Because of the strong **winds** and **cold** temperatures, both ecosystems are **snow** or ice-covered with low-growing lichens, mosses, and stunted shrubs.
Plants and animals **living** in these areas are well **adapted** to cold, harsh climates.
Trees cannot survive here; the line where trees stop growing is called the tree line.
Subalpine ecosystems are mountain ecosystems found below the tree line, including both **boreal** (sometimes called taiga) forests and grassy **meadows**.

Word Search

| | |
|-----------|------|
| MOUNTAIN | 10,C |
| ELEVATION | 2,J |
| APLINE | 2,H |
| BEARS | 6,B |
| OWLS | 3,F |
| SNAKE | 2,F |
| BIGHORN | 6,B |
| SHEEP | 5,E |
| CLIMB | 4,C |
| MEADOW | 3,B |

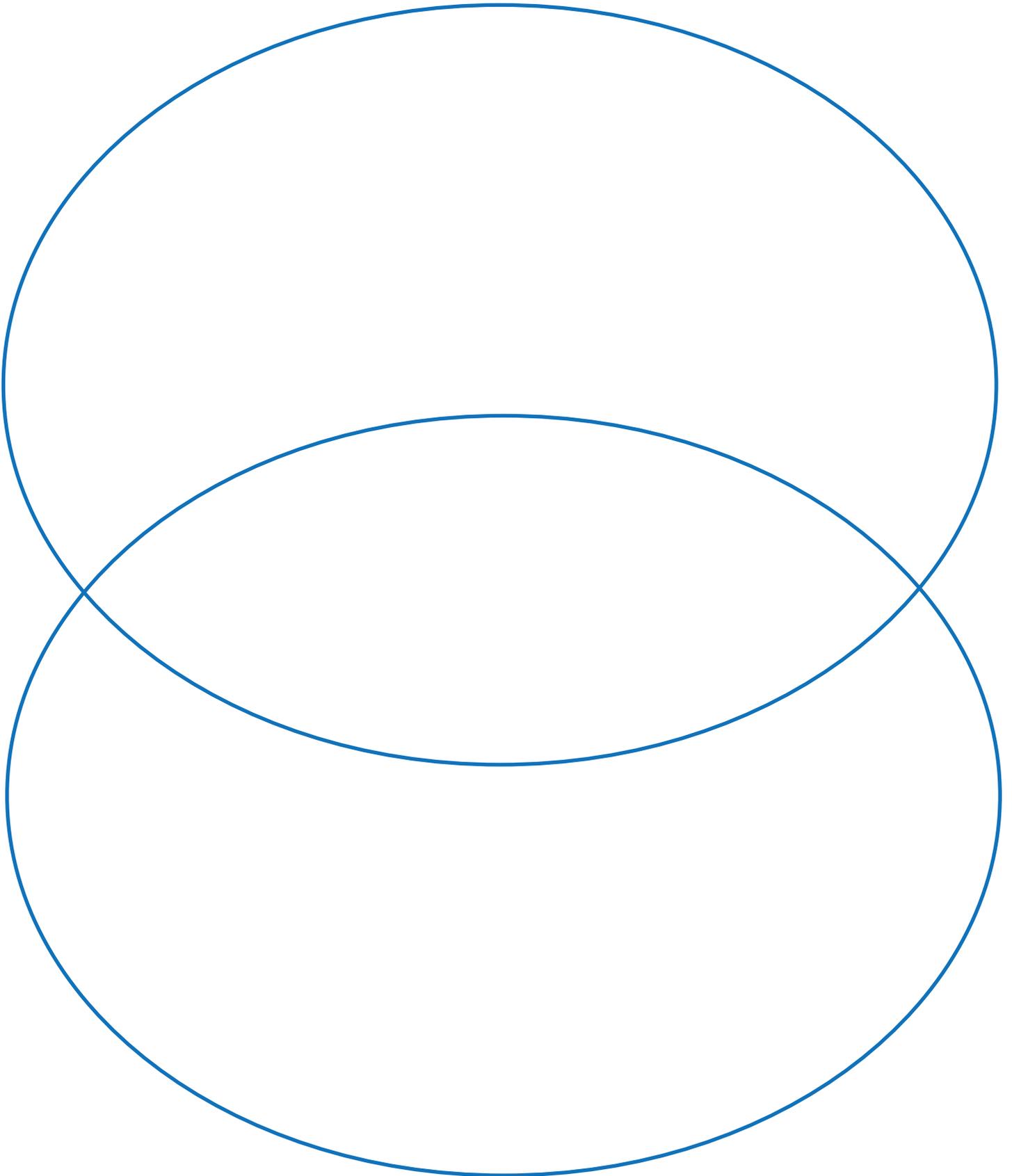
Mountain True/False:

1. True
2. False
3. False
4. True
5. True
6. False
7. False
8. True
9. True
10. True
11. False
12. False.
13. False
14. True
15. True

Appendix A—"What Children Know" Cards

| | |
|--|--|
| Question: _____ | Question: _____ |
| My answer: | My answer: |
| _____ | _____ |
| | |
| | |
| | |
| This information is correct! This information is not correct, can you find the correct information? | This information is correct! This information is not correct, can you find the correct information? |
| Question: _____ | Question: _____ |
| My answer: | My answer: |
| _____ | _____ |
| | |
| | |
| | |
| This information is correct! This information is not correct, can you find the correct information? | This information is correct! This information is not correct, can you find the correct information? |

Appendix B—Venn Diagram



Appendix C—Blank Map

