ROCKY MOUNTAIN NATIONAL PARK

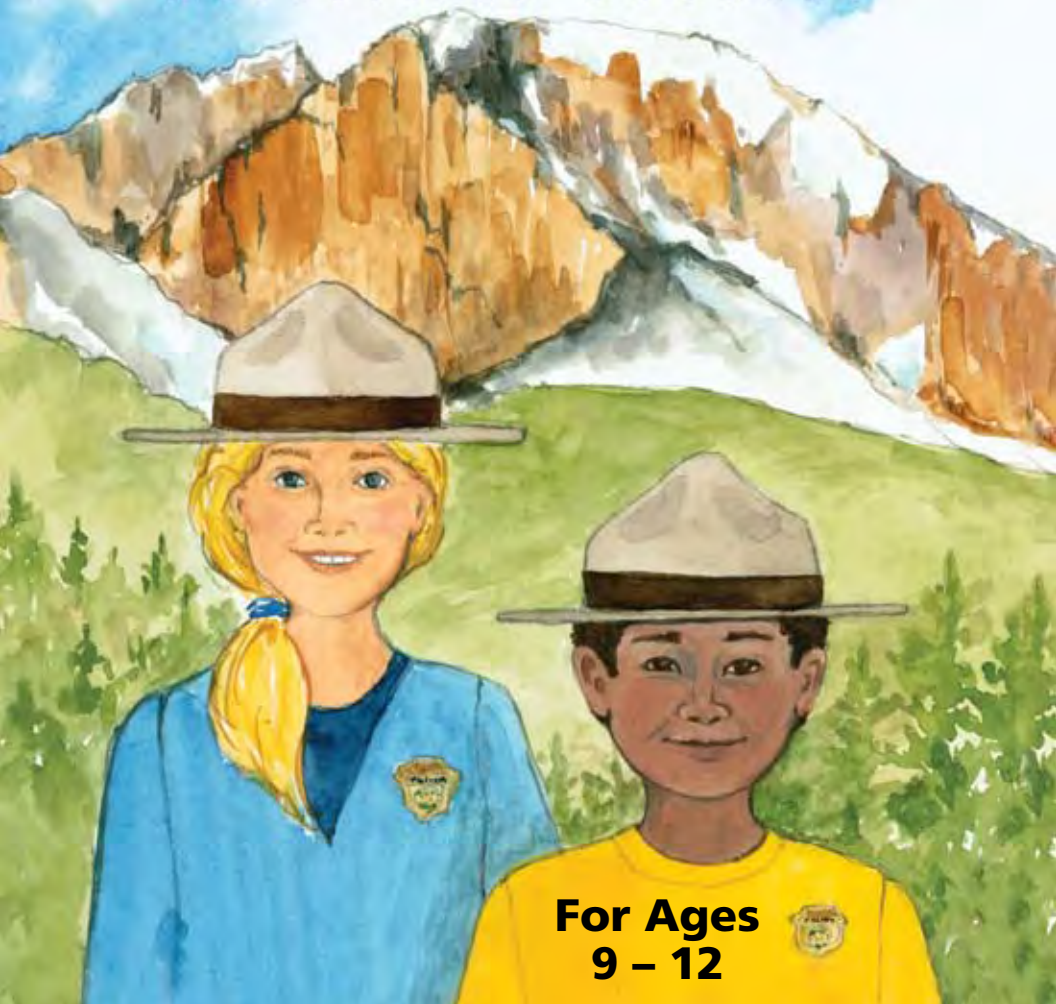
JUNIOR RANGER
ROCKY MOUNTAIN NATIONAL PARK

NATIONAL PARK SERVICE

OFFICIAL

# Junior Ranger

## ACTIVITIES BOOKLET



**For Ages 9 – 12**

# Your Adventure Begins

Like all of America's national parks, Rocky Mountain National Park is an amazing place. This park was set aside to preserve its beautiful mountains, ice-cold lakes, rushing rivers, roaring waterfalls, vast forests and fascinating wild animals. You are about to become an important part of the park – a Junior Ranger. Junior Rangers help protect the special treasures found in their national parks and back home in their own communities.

## Become a Junior Ranger! Here's How

**STEP 1:** Complete as many of the activities in this booklet as you can with your family and friends.

**STEP 2:** Take your booklet to any Rocky Mountain National Park visitor center and review it with a ranger.

**STEP 3:** The ranger will sign the certificate of achievement on the back cover and you will receive your official Junior Ranger badge.


## ACTIVITY 1 Ranger Tips

**FILL IN THE BLANKS.** When you're finished, you'll see that the missing words form another important message from park rangers. The answers are jumbled at the bottom of the page.

The following common-sense tips will _____ you protect Rocky Mountain National Park while enjoying a safe, fun visit.

When hiking, never become separated. Make sure everyone in your group is able to _____ up.

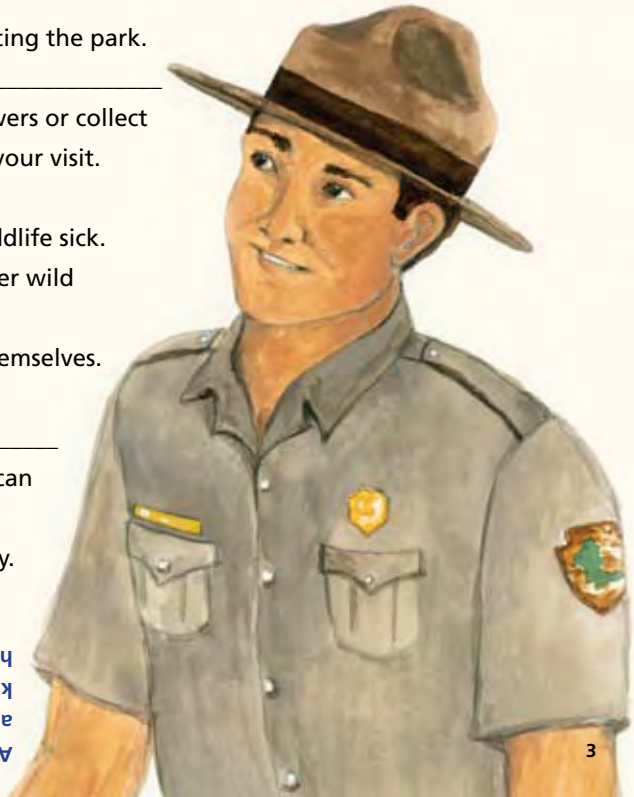
The park's _____ won't stay on hiking trails, but people should. This protects fragile plants and prevents erosion.

Rangers – and Junior Rangers – protect Rocky Mountain National Park so it will always remain _____.

**Do** have a great time visiting the park. Please _____ litter, pick plants and flowers or collect anything you see during your visit.

Human food can make wildlife sick. Birds, chipmunks and other wild animals know how to _____ themselves.

Observe wild _____ from a distance. They all can become aggressive if you approach them too closely.



ANSWERS: animals, wild, feed, keep, don't, wildlife, help

# A Changing, Living Land

As you hike up a mountain trail or drive up Trail Ridge Road, you can see and feel the changes. The air turns cooler the higher you go. The trees and plants – and the animals that depend on them for food and shelter – also change as you pass through distinct natural communities called ecosystems. There are four ecosystems in the park:

**MONTANE:** Found at the park's lower elevations, it's the warmest and driest ecosystem.

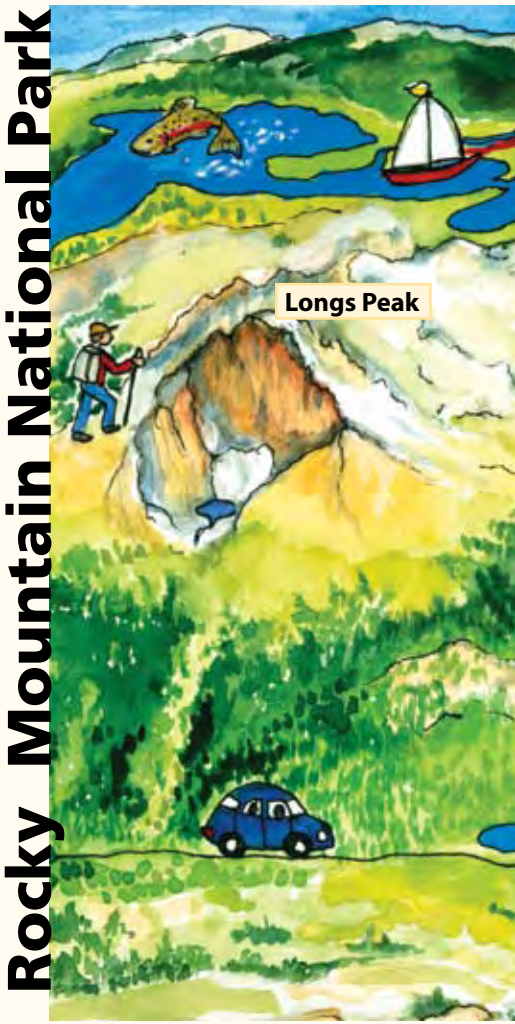
**SUBALPINE:** Higher up, it turns cooler and wetter. You might see snow in the thick subalpine forests well into summer.

**ALPINE TUNDRA:** The trees are gone in this arctic-like place way up high. The weather may be windy and cold, and snow can fall in July and August.

**RIPARIAN:** No matter which ecosystem you're in, land next to lakes and streams is called riparian land.

In some of the pages that follow, you'll see detailed illustrations of each ecosystem. The pictures will show you that the park's changing ecosystems are full of life, even though you might not see it at first glance. **Let's get going!**

Support for this publication came from the Rocky Mountain Nature Association, Rocky Mountain National Park, El Pomar Foundation and the National Park Foundation.



## ACTIVITY 2 Trail Ridge Road Map

In the map below, some destinations along Trail Ridge Road appear in the ecosystem colors used throughout your Junior Ranger booklet. Fill in the answers.

**Estes Park is in the _____ ecosystem**

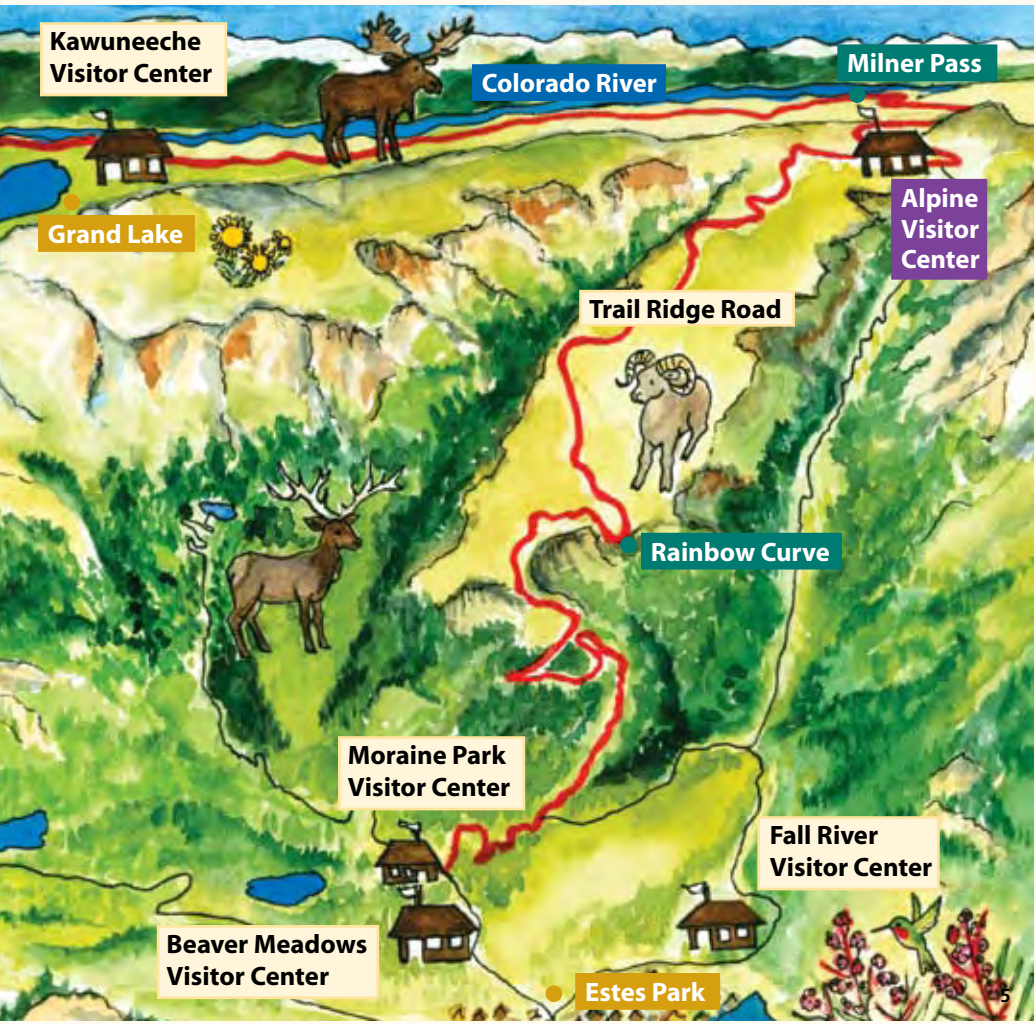
**Rainbow Curve is in the _____ ecosystem.**

**The Alpine Visitor Center is in the _____ ecosystem.**

**Milner Pass is in the _____ ecosystem.**

**Land next to the Colorado River is part of the _____ ecosystem.**

**The town of Grand Lake is in the _____ ecosystem.**



## ACTIVITY 3 Wildlife Watch

People come from all over the world to see Rocky Mountain National Park's wonderful wildlife. Here are some of the animals found in the park. They are listed in the ecosystem where they are often spotted, but you may see them in other places. See how many you can find and check them off.

### MONTANE

☐ Abert's Squirrel

☐ Black Bear

☐ Coyote

☐ Elk

☐ Mountain Lion

☐ Mule Deer

☐ Nuttall's Cottontail

☐ Wyoming Ground Squirrel

☐ Black-billed Magpie

☐ Broad-tailed Hummingbirds

☐ Mountain Bluebirds

☐ Red-tailed Hawk

### SUBALPINE

☐ Chickaree (Red Squirrel)

☐ Golden-mantled Ground Squirrel

☐ Least Chipmunk

☐ Long-tailed Weasel

☐ Porcupine

☐ Dusky Grouse

☐ Clark's Nutcracker

☐ Steller's Jay

## ALPINE

☐ American Pika

☐ Bighorn Sheep

☐ Northern Pocket Gopher

☐ Yellow-bellied Marmot

☐ Brown-capped Rosy Finch

☐ Common Raven

☐ Horned Lark

☐ White-tailed Ptarmigan

## RIPARIAN

☐ American Beaver

☐ Greenback Cutthroat Trout

☐ Moose

☐ Red Fox

☐ River Otter

☐ Western Terrestrial Garter Snake

☐ American Dipper

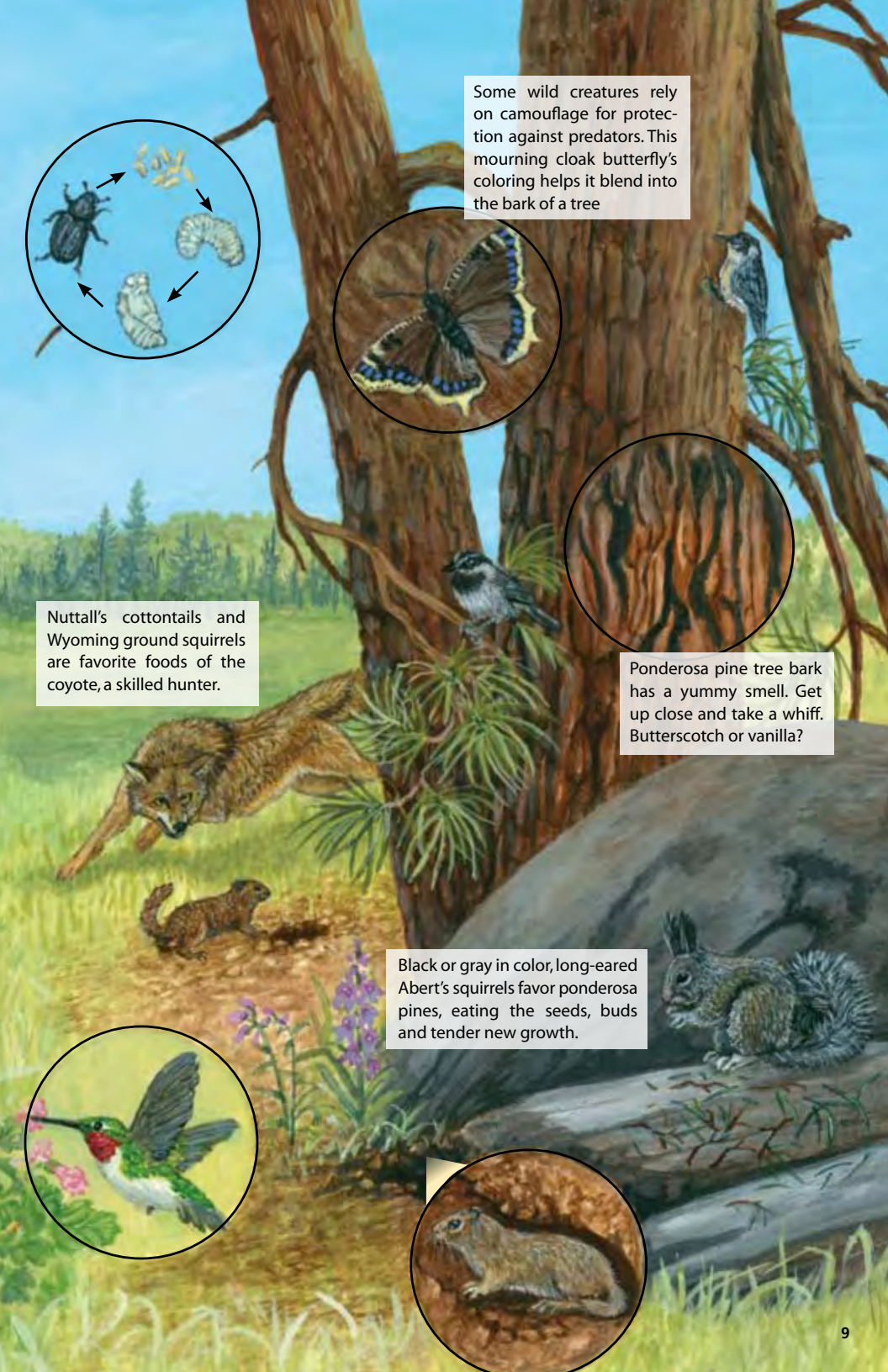
☐ Red-winged Blackbird

# Montane

In the summer, mountain pine beetles tunnel into pine tree bark and lay their eggs. The eggs hatch into larvae that change into pupae and finally, adult beetles. The beetles' activities usually kill the tree. This life cycle is repeated the next summer, when the new generation of beetles flies from the doomed tree to colonize other pines.

Mountain bluebirds build their nests and hatch their young in tree cavities usually made by woodpeckers.

While flying from flower to flower sipping sweet nectar, hummingbirds unknowingly spread pollen, which helps plants make seeds and reproduce.


Some wild creatures rely on camouflage for protection against predators. This mourning cloak butterfly's coloring helps it blend into the bark of a tree
Nuttall's cottontails and Wyoming ground squirrels are favorite foods of the coyote, a skilled hunter.
Ponderosa pine tree bark has a yummy smell. Get up close and take a whiff. Butterscotch or vanilla?
Black or gray in color, long-eared Abert's squirrels favor ponderosa pines, eating the seeds, buds and tender new growth.

## ACTIVITY 4 Food Web Connections

The montane ecosystem illustration – and the other ecosystem pictures to come – show how animals and plants interact. Draw arrows from each animal to the foods you think it eats (other animals or plants). **Hint:** Some animals eat more than one. Give it your best shot!

Red-tailed Hawk

Mountain Lion

Coyote

Mule Deer

Golden-mantled Ground Squirrel

Nuttall's Cottontail

Grasses, Shrubs and Wildflowers

ACTIVITY 5

# Animal Signs Treasure Hunt

Animal signs tell you what lives where. There are lots of different tracks, nests, scat and tree cavities in the park. If you see any of these wildlife signs, check them off.

☐ Animals leave tracks in loose soil and mud. These tracks (from top) are elk, beaver, coyote and Nuttall's cottontail.

☐ Birds build nests, where they lay their eggs and raise their young. A Steller's jay made the larger nest. A hummingbird made the smaller one.

☐ Popcorn-size accumulations of sap on pine tree trunks mean mountain pine beetles have invaded the tree.

☐ Scat is seen everywhere in the park. The elk and deer droppings (from top) are similar, but different in size. Coyote scat (bottom) is easier to identify.

☐ Some birds make nests in tree cavities made by woodpeckers. Aspen cavities like this one also may be used by other animals.


At home in the trees of the cool, dense subalpine forests, American martens are ferocious hunters. Their prey includes small mammals and birds.
Patches where the tree bark is missing may be the work of porcupines, which eat the tender inner bark.
The slim body of the long-tailed weasel enables it to enter dens to find prey like this slumbering chipmunk.
W. Smith

# Subalpine

Hawks and other raptors have a diet of birds and small mammals. This northern goshawk is chasing a dusky grouse.

Chickarees, or red squirrels, pile up mounds of pinecone pieces called middens on the forest floor as they tear apart the cones to find the tasty seeds.

Mushrooms help dead trees and other plant life decompose. The mushroom cap provides food for this golden-mantled ground squirrel and other animals.

Clark's nutcrackers are natural gardeners that store pinecone seeds in the ground for winter food. Some seeds the birds forget to dig up will sprout and grow into trees.

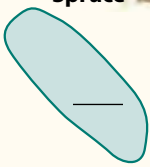
## ACTIVITY 6 Tree Finder

Different kinds of evergreen trees have different kinds of needles and cones. You already know that the forests change as you go higher or lower in elevation in the park, and knowing which tree is which will help you identify the ecosystem you're in. Write the number of the missing tree twig in the cutout next to the tree where it belongs. The cutout colors will tell you where the trees live.

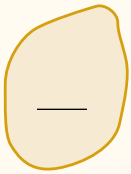




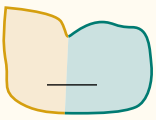

Engelmann Spruce



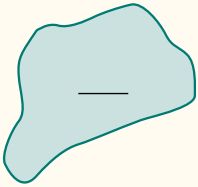
Ponderosa Pine



Lodgepole Pine



Subalpine Fir



Douglas-fir

ACTIVITY 7

# Ranger Programs

Rangers protect the park's plants and animals. They also keep the park safe for visitors. Some rangers lead fun, interesting nature walks and conduct evening programs. The programs are listed in the official park newspaper. Attend one that interests you, and get the ranger's signature. In the notebook below, write down a few things you learned.

**Program I attended:**

**Stuff I learned:**

**Ranger signature:** _____

The hum of bumblebees can be heard on the tundra as these important pollinators seek the nectar of beautiful alpine flowers.

Pikas store plant material in the rock piles that give them shelter. During the harsh alpine winters, the hay piles provide food for these tiny members of the rabbit family.

The white-tailed ptarmigan is the only bird that spends its entire lifetime on the tundra. Well-camouflaged ptarmigans and their chicks may be spotted feeding in and around rock piles and willows.

# Alpine Tundra

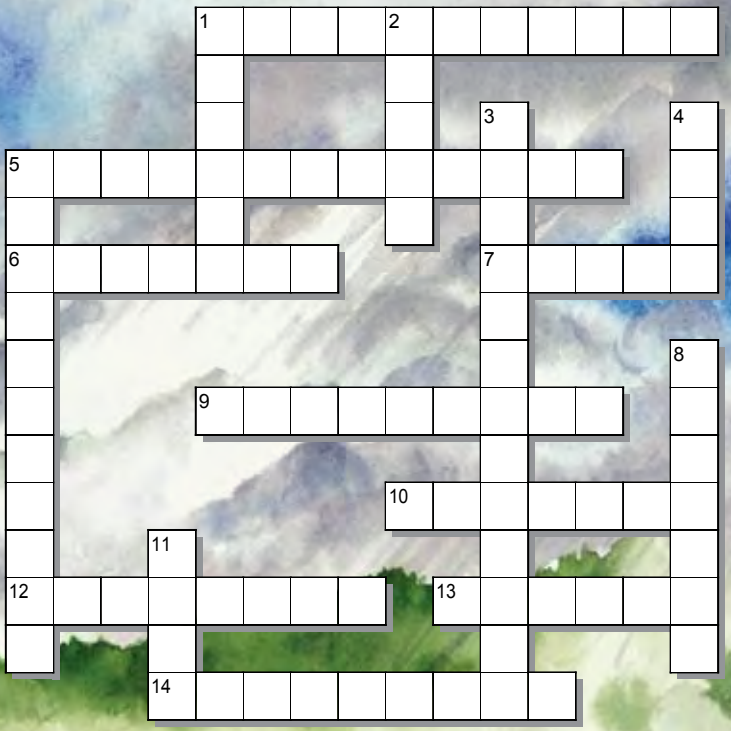
To spot the nest of a horned lark, look on the ground. This summer tundra resident builds its nest – and spends much of its time – on the ground.

Lichens are plants that grow in the harshest of conditions. Commonly seen on rocks, lichens produce an acid that breaks down the rock.

Long, slender mounds of earth called eskers are made by the underground tunneling of northern pocket gophers.

## ACTIVITY 8 Weather Word

Complete the puzzle by answering the questions below.



### ACROSS

1. Use a _____ to measure the temperature of air or water.
5. Mountains cause warm air to rise, cool and form dramatic clouds that build into rumbling summer _____.
6. The _____ ecosystem is the lowest, warmest and driest life zone.
7. The wispy cirrus _____ is common in the summer skies.
9. More snow and rain fall in the _____ ecosystem than in the montane ecosystem just below it.
10. Before you go out to explore the park, drop by any visitor center for the latest _____ report.
12. During spring, melting snow fills the rivers, streams and lakes. The land next to these bodies of water is called the _____ ecosystem.
13. Precipitation that falls west of the Continental _____ flows toward the Pacific Ocean. Rain and melting snow to the east flow toward the Atlantic Ocean.
14. Dangerous _____ strikes most often occur on mountaintops, near water and in open areas.

### DOWN

1. Weather on the treeless alpine _____ can be extreme.
2. Streams and rivers run fullest when snow in the mountains _____ in the spring and early summer.
3. As elevation increases, rainfall and snowfall, also known as _____, increases.
4. The _____ speed on the alpine tundra has topped 150 miles per hour.
5. As elevation increases, the _____ of the air becomes cooler.
8. Temperature is measured in _____ Fahrenheit in the United States, Celsius in other parts of the world.
11. Summer storms can produce _____, a frozen precipitation that falls in the form of ice pellets.

## ACTIVITY 9 Alpine Tundra Adaptations

These plants found on the alpine tundra have adaptations that enable them to survive in this cold, windswept ecosystem. Answer the questions below. The answers are jumbled at the bottom of the page.

What keeps me warm like a sweater in the wind and cold?

ANSWER

*Rydbergia*

What covers me like a sunscreen and keeps the water in me from evaporating in the intense sun and wind?

ANSWER

*Yellow Stonecrop*

How do I hide from the cold wind and stay kind of warm?

ANSWER

*Moss Campion*

What do I use to reach water deep underground?

ANSWER

*Alpine Springbeauty*

ANSWERS:
Deep roots
Insulating hairs
Hug the ground
Waxy coating

Dragonflies lay their eggs on aquatic plants or in the water. The eggs hatch into nymphs that live underwater and later emerge on the stems of plants to shed their skin. Full-grown dragonflies fly away.

The legs of the water strider have tiny hairs that collect air bubbles, allowing these interesting insects to "skate" on the surface of the water. This one is being eyed by a hungry cutthroat trout.

This little bird, the American dipper, catches insects, small fish and other aquatic prey by swimming and walking underwater.

Plants that grow underwater are favorite summer foods for moose, the largest member of the deer family. Moose are most commonly seen on the west side of the park.

# Riparian

Many beaver raise their young in lodges built from sticks and mud. The beavers' "front door" often is an underwater entrance.

This bird lives up to its name. The kingfisher dives into lakes and streams to catch small fish, its favorite food.

The tiger salamander leaves its winter den in the spring to breed in water, where it feasts on insects and other prey.

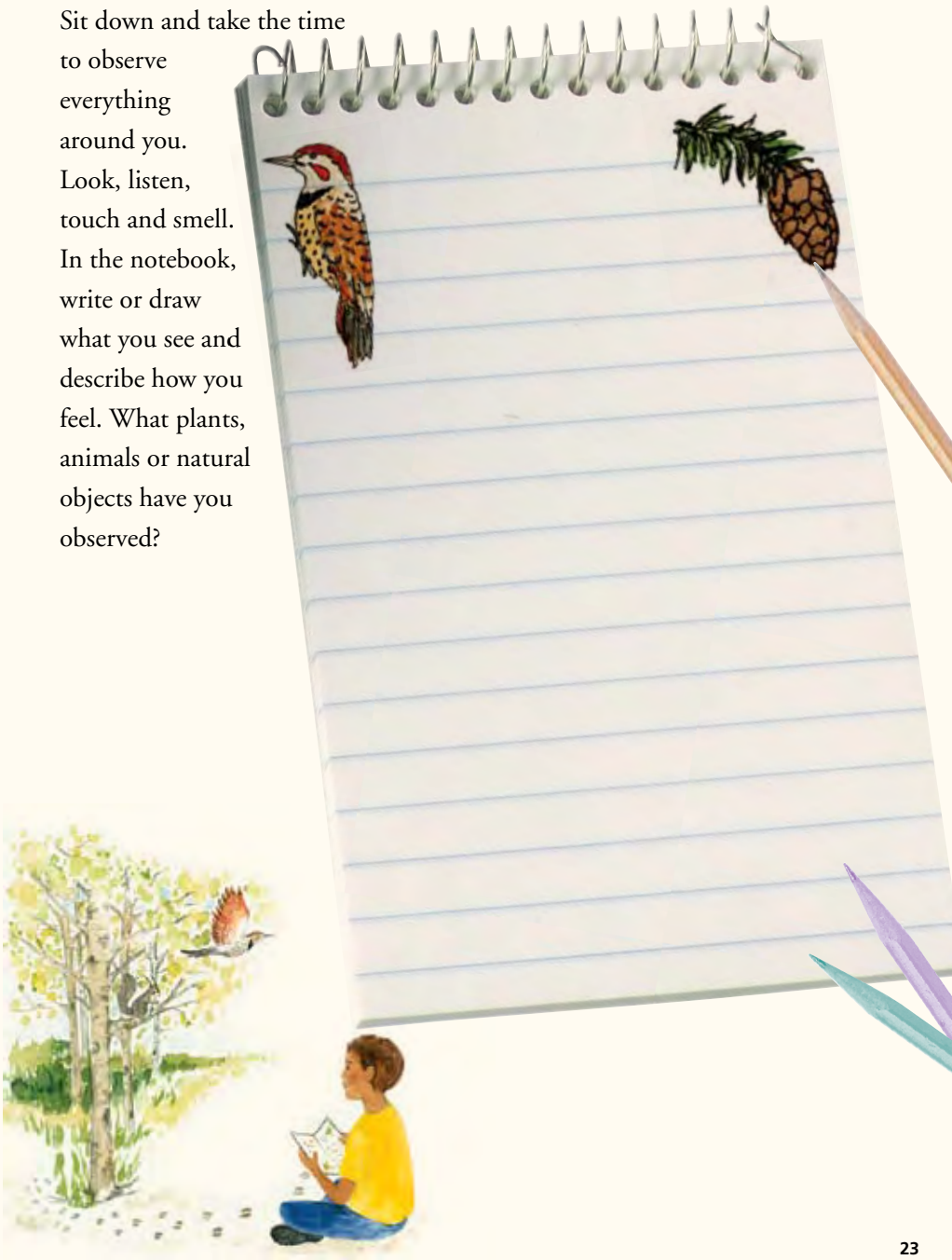
## ACTIVITY 10 Observation Skills

You have visited Rocky Mountain National Park's four incredible ecosystems and seen how many plants and animals interact with one another and their environment. Look carefully at the illustration above. See if you can find at least three examples of these important natural relationships and circle them.

**Hint:** There are six in the picture.

## ACTIVITY 11 Naturalist Journal

Many park rangers are naturalists. They study nature to protect it. Now, find a safe, quiet place along a hiking trail. Sit down and take the time to observe everything around you. Look, listen, touch and smell. In the notebook, write or draw what you see and describe how you feel. What plants, animals or natural objects have you observed?



# Junior Ranger Pledge

As a Junior Ranger, I promise to help protect Rocky Mountain National Park, my neighborhood parks and all other natural areas by being a responsible steward of the environment.

- **I will help keep wildlife wild by not feeding animals.**
- **I will help protect plants by not picking them.**
- **I will help keep parks beautiful by placing trash in recycling bins or trash cans.**
- **I will enjoy nature safely and be a good example to others.**

# Congratulations

## JUNIOR RANGER!

You are an important part of this park.
Stay in touch. Contact us anytime at
romo_junior_ranger@nps.gov

**Look for Junior Ranger products at rmna.org**

# Certificate of Achievement

This certifies that

_____

has met the requirements of a
Rocky Mountain National Park Junior Ranger

_____ _____

Ranger Signature Date