



Friends of Alta Snow Ranger Activity Book



SCAN ME

Welcome to Alta!

This is a guide for your adventures at Alta! The following pages have fun activities to help you enjoy your day while learning about this special place. Complete as many of the activities as possible and when you are all done, take the pledge on the back page to become an official **Friend of Alta Snow Ranger!**



How to become a Snow Ranger:

Snow Rangers earn their badges by completing the following activity pages and sharing their book with Friends of Alta or Alta Environmental Center staff. If you are unable to complete your junior ranger book while visiting Alta, please return the parent certificate of completion by mail or email to Friends of Alta or Alta Environmental Center to receive a pin.

Ages 5 to 7	Ages 8 to 10	Ages 11 and Over
Complete 2 pages of your choice.	Complete 3 to 4 pages of your choice.	Complete 5 to 6 pages of your choice.
Draw two pictures on leave no trace principles (Page 4).	Draw or write four leave no trace principles (Page 4).	Complete all leave no trace principles (Page 4).
Draw a picture describing your visit in your Naturalist Notebook (Page 16).	Draw or write about your visit in your Naturalist Notebook (Page 16).	Write about your visit in your Naturalist Notebook (Page 16).



Friends of Alta
 P.O. Box 8126
 Alta, UT 84092
info@friendsofalta.org

Alta Environmental Center
 10010 East Highway 210
 Alta, UT 84092





Don't Be a Litterbug!

People from all over the world visit Alta, Utah. Some visitors come to Alta to ski, snowshoe, or bird watch, often bringing food and supplies for their trip. Almost everyone throws away some garbage. Fortunately, most people place trash in the garbage can where it belongs. A good Snow Ranger never litters, especially in our National Forest and watershed. However, a few careless people leave behind trash along roads, trails, and in parking areas. Did you know some of this trash takes years to decompose or break down?

The chart below shows how long some trash takes to break down:

Banana Peel	3 to 4 Weeks
Orange Peel	6 Months
Milk / Juice Carton	5 Years
Cigarette Butt	12 Years
Leather Shoe	25 to 40 Years

Nylon Cloth	30 to 40 Years
Plastic Container	50 to 80 Years
Aluminum	90 to 100 Years
Plastic 6-pack Holder	450 Years
Plastic Foam	100 Years

Did you know...

Alta Ski Resort has started a green food waste container program. The green food waste containers are available to put food scraps in instead of putting food waste in the trashcan. By putting your food waste in the correct designated bins, you are not only helping lower greenhouse gas emissions caused by your waste, but you are also helping create nutrient-rich fertilizer which can be used in gardening and farming operations.



Safety Always Comes First

While working to become an official Snow Ranger, remember- safety always comes first. Never do anything to place yourself or others in danger.

Some of the most important safety rules are:

- Be prepared for cold winter weather! **Wearing appropriate winter attire with many layers and warm boots** will not only protect you from the weather but will also make completing the activities more enjoyable.
- **Pay attention to local weather reports** and know yours and other group members' physical abilities and limitations.
- **Drink plenty of water**, even when you do not feel thirsty.
- **Carry extra gear and water with you.**
- Treat all wildlife with respect. Remember, you are visiting their home, and they need their space. **Never touch any wildlife.**
- **Stay on trails.** Also, be aware of trail conditions and distances before setting out. During the wintertime, trails can become covered so make sure to check the trail map.
- **Never hike or ski off trail alone.**
- **Put trash, recycling, and food waste in proper bins.**



7 Principles of Leave No Trace

- Know Before You Go
- Choose The Right Path
- Leave What You Find
- Be Careful With Fire
- Respect Wildlife
- Be Kind To Other Visitors
- Travel & Camp on Durable Surfaces



Before You Go...

It is very important that we respect our natural spaces. You can do your part by following these **Leave No Trace Principles**.

In the space next to each principle, **draw a picture or write a sentence describing how you will Leave No Trace.**

1) Plan ahead and prepare

2) Travel on durable surfaces

3) Dispose of waste properly

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4) Leave what you find

5) Minimize campfire impact

6) Respect wildlife

--	--	--

7) Be considerate of others

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Bingo!

Look up, look down, look all around! Each of these things can be found or heard somewhere in Alta. When you see or do one of the items below, mark it. When you have a whole row, diagonal, or horizontal, you have a **BINGO!**

<p>Pick up Trash</p> 	<p>See an Animal</p> 	<p>See a snowflake</p> 	<p>Hug a tree</p> 
<p>Find Animal Tracks</p> 	<p>Spot an insect</p> 	<p>Listen to a Bird</p> 	<p>Make a Snowman</p> 
<p>Name a bird you see</p> 	<p>See red gloves, scarf, or coat</p> 	<p>Name a tree you see</p> 	<p>Point Out Mount Superior</p> 
<p>See a Chairlift</p> 	<p>Make a snow angel</p> 	<p>Listen for wind</p> 	<p>Name a ski run</p> 

Settlers in Little Cottonwood Canyon

Gosuite, Shoshoni, and Ute Native American tribes used Little Cottonwood Canyon as hunting, fishing, and gathering grounds for hundreds of years before Mormon settlers arrived. Their arrival forced Native Americans elsewhere, many went south towards Utah Lake. When the Mormons arrived in the Salt Lake Valley in the late 1800s, they were excited by the wealth of resources found in Little Cottonwood Canyon. They used the trees as building materials for their homes and drank the fresh water that flowed freely from the high mountains. Eventually, miners discovered silver and the Town of Alta was established. All this building and mining used up a lot of trees until there were almost none left on the hillsides! After a while, the miners stopped finding silver and the focus of Alta shifted to skiing. The Town of Alta realized that not only was it fun to ski through trees but that trees were very important to the beauty and functioning of Little Cottonwood Canyon so they began replanting!

Help reforest the barren hillside by drawing as many trees and plants as you would like to see!



Bonus activity: While you are walking around Alta, look carefully to find evidence of mining you can still see today.

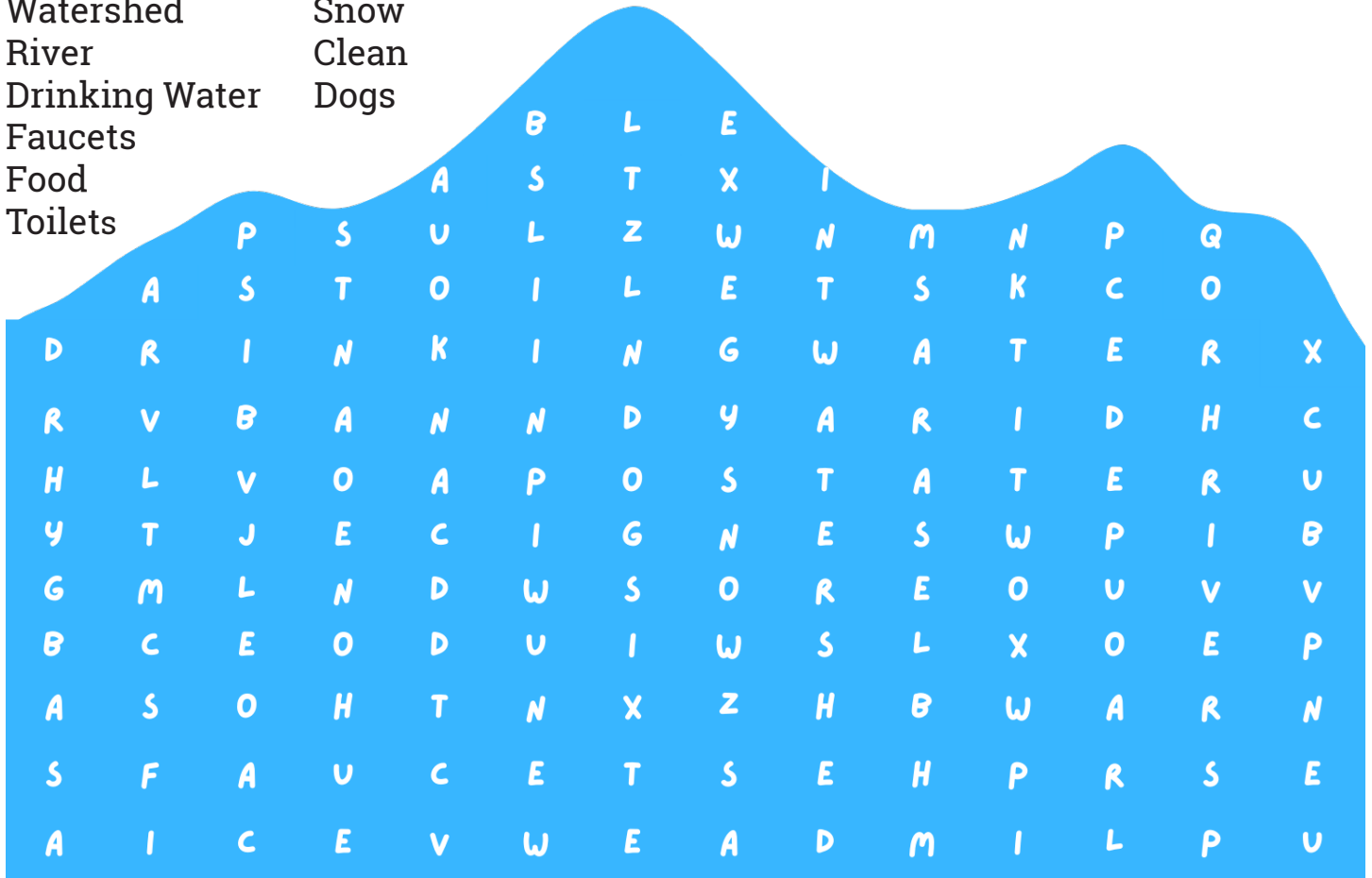
From Mountains to Faucet: The Watershed

Utah has limited water sources and depends on precious watershed areas to provide culinary drinking water to the population. Complete the below word search to learn more about the watershed.

Word-Bank:

Watershed
River
Drinking Water
Faucets
Food
Toilets

Snow
Clean
Dogs



One of the many reasons why Little Cottonwood Canyon is so special is that it is part of a W _____. A watershed is an area of land where all the water that lands on it- rain or S ___ - drains into one R _____ system. The water that comes out of this watershed is used as D _____ W _____.

Even though the water gets treated and cleaned before it flows out of people's F _____, it is still very important that we do everything we can to keep the water C _____ so that people don't get sick in Salt Lake City. Because both dogs and humans eat processed F _____, their waste is hard to get out of drinking water. That is why D _____ are not allowed in the canyon and why it is very important to use the provided T _____.

watershed, snow, river, drinking water, faucet, clean, dogs, food, toilets

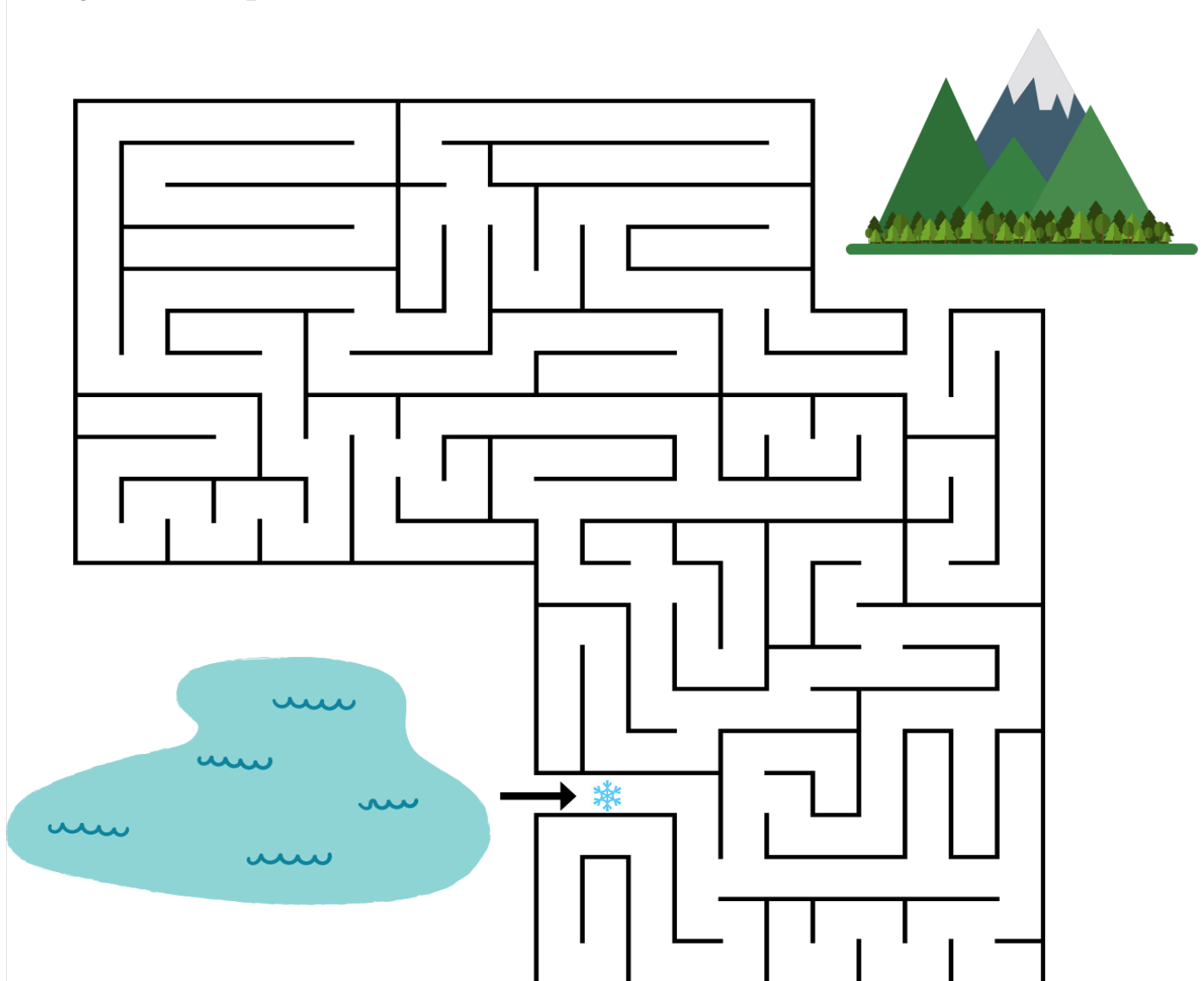
Lake Effect and Snow

Great Salt Lake, through a process called “lake effect,” can increase precipitation along the Wasatch Front. This lake effect contributes to “the Greatest Snow on Earth” at the ski resorts in the Cottonwood Canyons. The

Great Salt Lake never freezes and can warm rapidly which allows lake enhanced precipitation to occur from September through May.

Lake effect snow occurs when cold air moves across the relatively warm waters of the Great Salt Lake. As the cold air passes over the unfrozen and relatively warm waters of the Great Salt Lake, warmth and moisture are transferred into the lowest portion of the atmosphere. As the air rises it will form clouds, the clouds will grow bigger and eventually snow begins to fall.

Can you find a path for the snow to travel from the lake to the mountain?

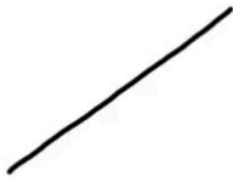


How is Snow Made?

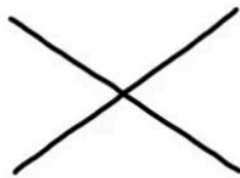
Snow forms if the air in a cloud is below freezing (32 F). When it hits freezing the water turns into ice instead of rain, and the tiny ice crystals stick together until they form snowflakes. Once the snowflakes get heavy enough, they drop out of the clouds. On the way down they either turn into rain or remain a snowflake to create snow on the ground.

This is determined by the outside temperature staying above or below freezing. If it gets warmer, they turn into rain, but if the air stays close to freezing all the way down, then the snowflakes will make it without melting and fall as snow.

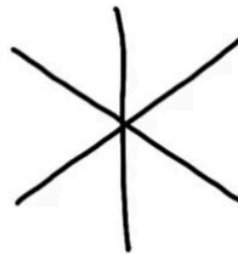
Snowflakes occur in a huge variety of forms. In fact, no two snowflakes are the same! Each one is unique, just like each person is unique. All snowflakes have one thing in common. They all have six sides. If you look at them under a magnifying glass, you will see the different shapes, as well as the fact that they are all hexagons (six-sided).



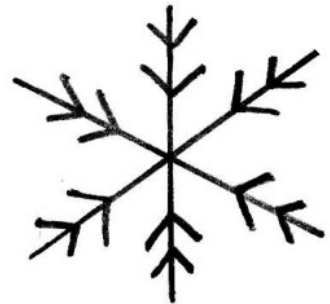
1



2

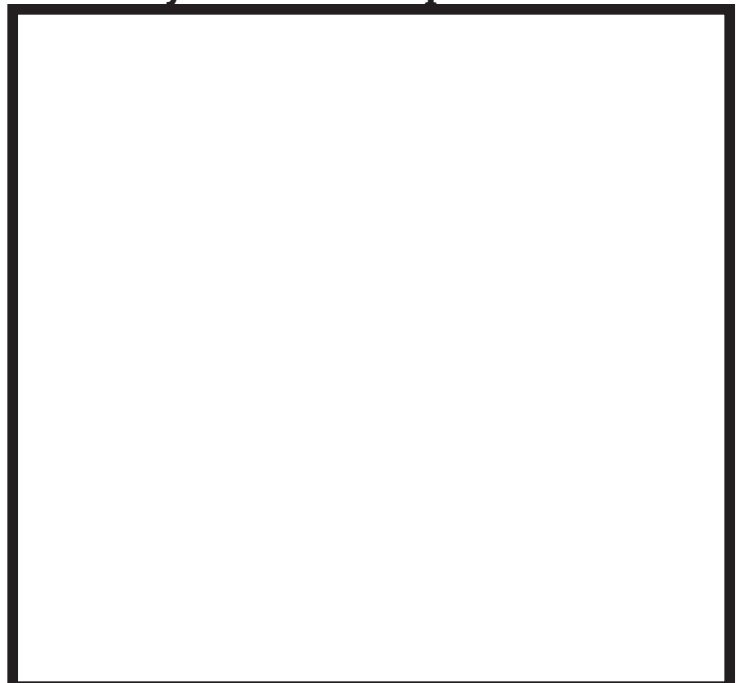


3



4

Draw your own unique snowflake



How Avalanche Happens

An avalanche is a large amount of snow that quickly moves down a slope. An avalanche can be deadly because it will bury or sweep away anything in its path. An avalanche is more likely to happen on a slope greater than 35 degrees. You can often spot an avalanche prone area by the lack of trees or large rocks. These things help to keep snow in place. A weak layer of snow also makes an avalanche likely. For example, melting and refreezing may cause a layer of snow to become slick. Snow piling on top of this weak layer can easily slide off.

Once the conditions are right, several things can start an avalanche. Heavy snowfall, strong wind, and rising temperatures all can loosen snow on a slope. However, some avalanches are triggered by people skiing, snowboarding, hiking, or snowmobiling. Can you label the below pictures with the activities that trigger avalanches? Can you see the avalanche prone paths while driving up Little Cottonwood Canyon?

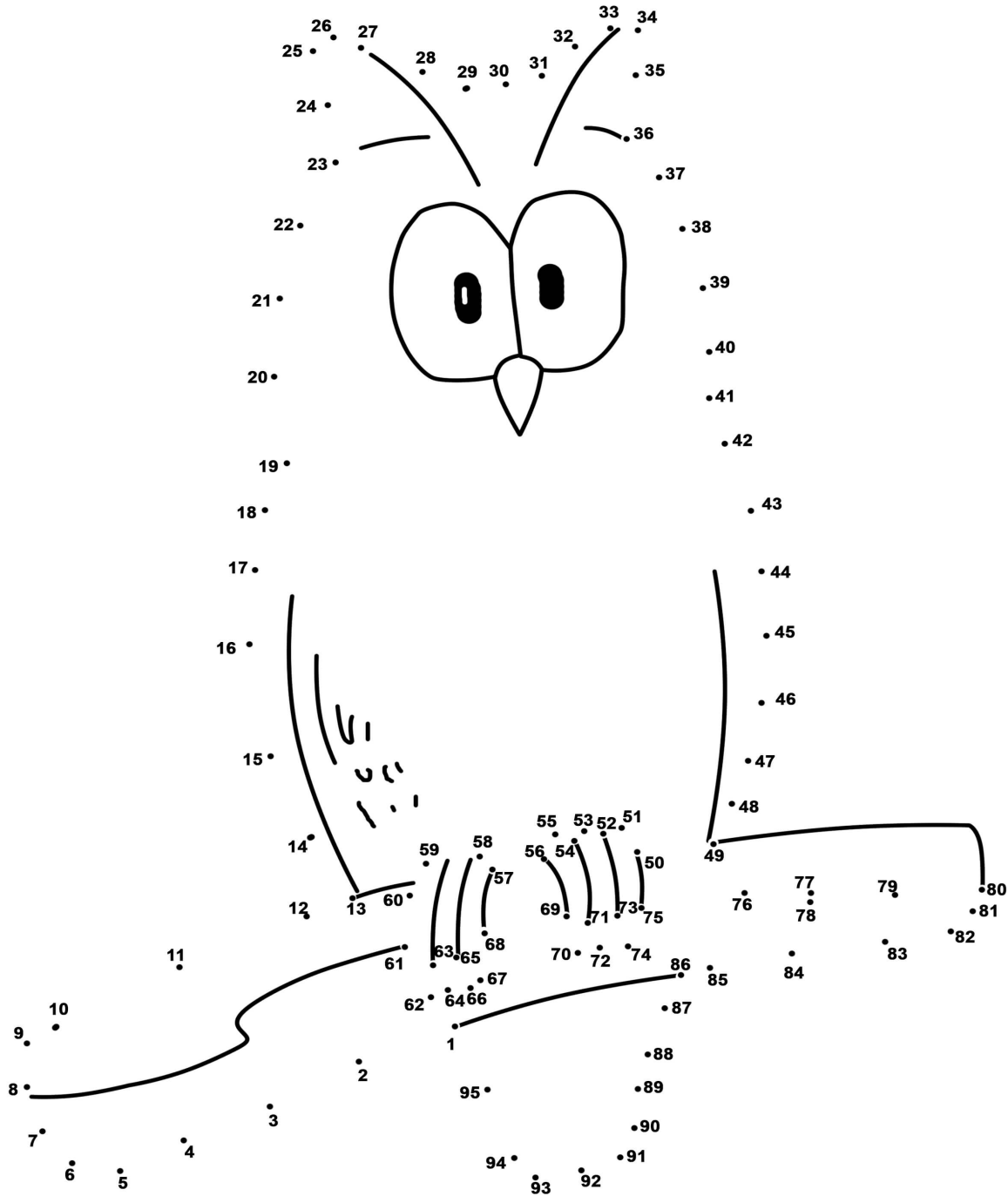


WORD-BANK:
Snowmobiling
Skiing
Hiking
Snowboarding



Learn about the Great Horned Owl!

Connect the dots to uncover the big eyed owl!



Did you know..

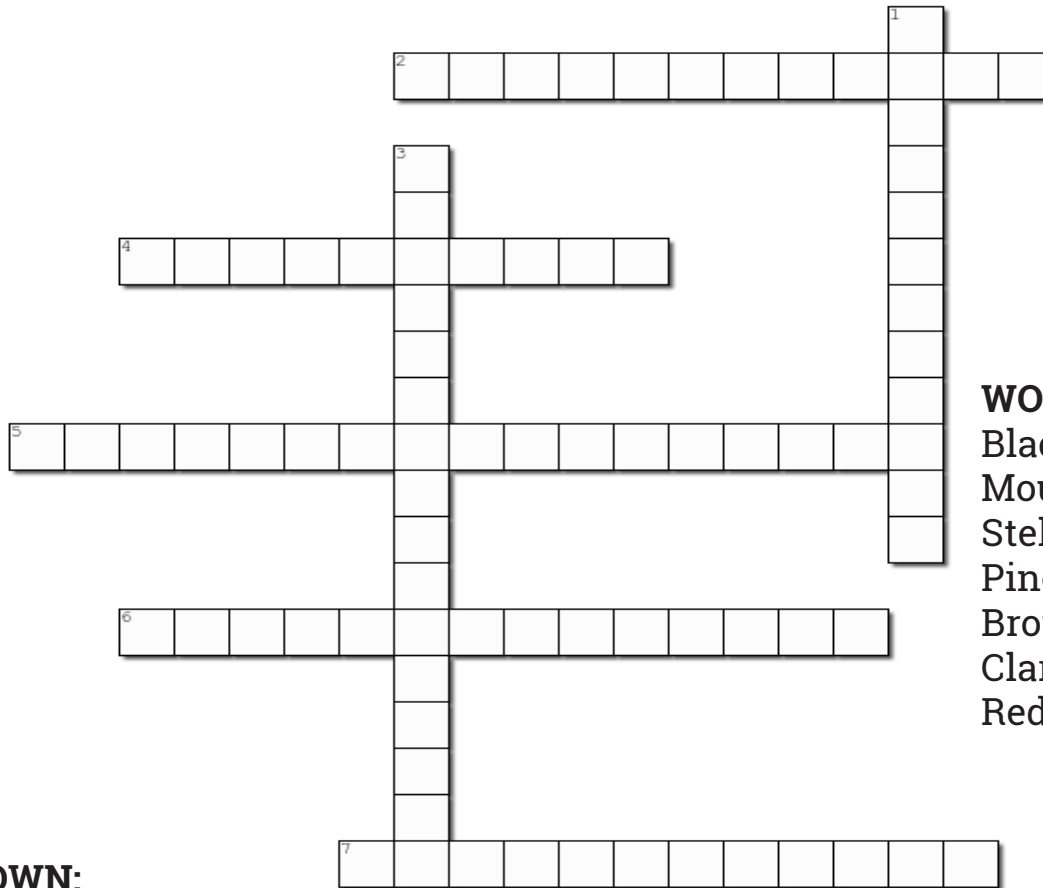
With its long, earlike tufts, intimidating yellow-eyed stare, and deep hooting voice, the Great Horned Owl is the classic owl of storybooks. This powerful bird can take down birds and mammals even larger than itself! Although it is called the Great Horned Owl, the tufts that look like horns are not actually horns, rather they are feathers that help camouflage the bird from predators. They are also covered in extremely soft feathers that insulate them against the cold winter weather and help them fly very quietly in pursuit of prey.



Winter Birds of Alta

One of the easiest ways to spot wildlife in the winter while hiking or skiing is by looking for birds. Although some birds migrate out of Alta during the winter months, a lot stay behind and adapt for the cold winter environment. Birds remain very active throughout the winter and Alta is home to a variety of bird species. Alta has a mixture of conifer and evergreen forests as well as some aspen groves. The evergreens provide great shelter from the harsh winter conditions and storms, though, if you just look upward, you can often spy a pine grosbeak or mountain chickadee.

Use the word-bank to match the clue with the bird. Good luck!



WORD-BANK:

- Black Rosy Finch
- Mountain Chickadee
- Stellar Jay
- Pine Grosbeak
- Brown Creeper
- Clarks Nutcracker
- Red Crossbill

DOWN:

- 1. These plump finches dwarf every other finch in the trees and nearly every bird that lands on the feeder. The grayish bodies of these birds are decked out in pinkish reds on males and yellows on females
- 3. This bird travels in flocks and uses their spike-like bills to pick seeds out of pine cones. They eat some of the seeds and bury thousands of others for the winter.

ACROSS:

- 2. Its odd bill shape helps it get into tightly closed cones
- 4. Look for a distinctive black triangle crest and gorgeous cerulean blue feathers that blend well with shadows.
- 5. They have a distinct "chick-a-dee-dee-dee" call.
- 6. These birds nest in cliffs and crevices in alpine areas where few people go. They are a focus of a bird study conducted in Alta by the Division of Wildlife Services and Friends of Alta.
- 7. They probe into crevices and pick at loose bark with their slender, downcurved bills, and build their hammock-shaped nests behind peeling flakes of bark

Winter Adaptions

When winter comes animals work in many ways to prepare for the cold weather just as we do. We turn on the heat, get out our warm coats and in areas that are quite cold we buy extra food in case a storm comes that prevents us from going to the store. Some animals grow warmer coats for the winter. Others waterproof their homes in order to stay dry and warm. Some store up food for the long winter and others migrate to warmer places until the cold weather is gone. Some even curl up and sleep the winter away.

Solve the scrambled words, then draw a line to match each animal with its winter adaption.



In order to survive the long cold winter, it builds an edible nest of plant material, which serves as its food store, as well as a cozy home. So, I survive the winter by..

P
P A N L G N I N A
H E D A



In the spring and summer, I eat leaves, twigs, and grass. In the winter, I'm forced to eat tree bark and evergreen needles. Fortunately, I have extremely long legs that rotate like our shoulders to run and walk in deep snow. Also, my large, hooved feet have a big surface area that allows me to stay on top of the snow without

S
K I G N I N



In the summer, I run around eating seeds. To survive the winter, I burrow into the ground. I lower my temperature and heart rate to save energy. It looks like I'm asleep! Scientists call this

H
B I R E N T A O I N



In the summer, my fur is brown with a white chest. In the winter, I grow a white coat—the color of the snow! It keeps me hidden from my prey, as well as from predators such as foxes and owls. My fur is an example of

C
M A U O F A L E G



During the spring, summer, and fall months I eat plenty of food to build up my fat reserves that help provide energy to get me through the snowy winter months. When winter arrives, I will often move to lower elevations to find feed. Scientists call this behavior of leaving Alta

M
G R I A O T T I N



During the winter months my feathers are soft, down-like which help insulate me against the cold. I have completely silent flight due to the soft feathers and short wide wings to help me maneuver silently amongst the forest's trees. I have excellent night vision which allows me to hunt prey during the night. Scientists call me being active during the night

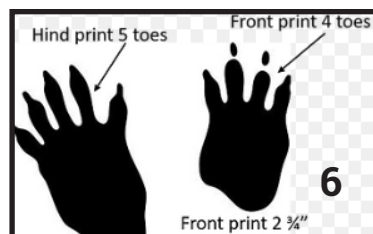
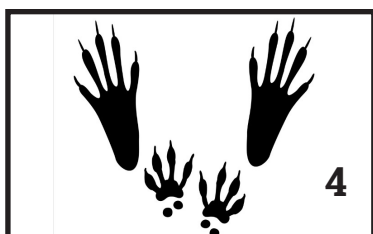
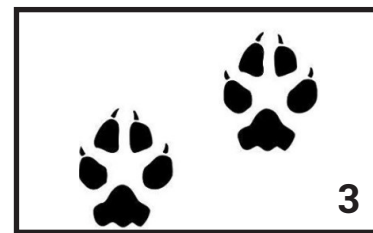
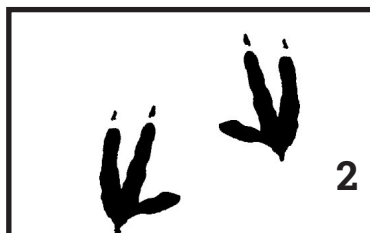
N
C T U O R A N L

Planning Ahead (Pika), Sinking (Moose), Hibernation (Squirrel), Camouflage (Ermine), Migration (Deer), Nocturnal (Owl)

Animal Tracks

Winter is an especially great time to go looking for animal tracks in the snow. In summer, animals prints can be difficult to spot on packed dirt trails. But snow preserves them, allowing hikers to experience the busyness of the forest in a new way. You can start identifying the animal by its walking pattern. Animals move in all sorts of unique ways, and these movements leave behind valuable evidence as to who the tracks belong to. Such as being a hopper like a rabbit, having a long body with short legs like a weasel, or having a side-to-side stride like a bear. Some even have perfect steps where their rear foot steps on top of the front footprint, forming a series of single tracks, such as foxes. After you identify the walking pattern of the animal you can search for additional clues such as fur in the snow, scat, and starting / stopping points of the tracks to help identify what animal it is.

Match the bottom animal track with the animal demonstrated above. Bonus! Can you identify the walking pattern of the animal?



1) Moose, 2) Owl / Great Horned Owl, 3) Coyote, 4) Squirrel, 5) Rabbit / Snowshoe Hare, 6) Porcupine

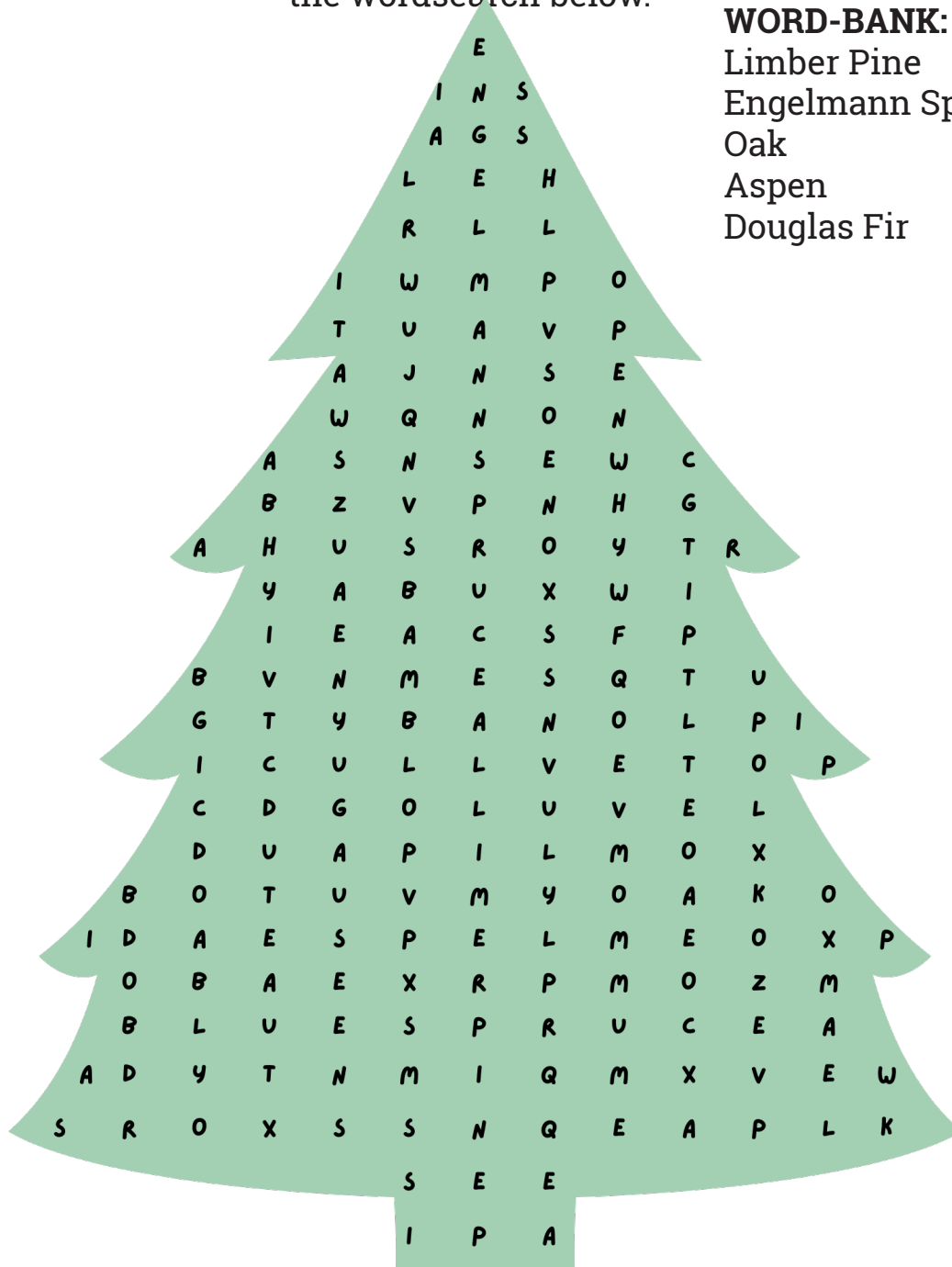
Trees of Alta

Many of the trees you see today in Alta weren't around before 1933 due to deforestation for mining and timber operations. There was a lack of coal in the Wasatch Front, so timber was cut for fuel for heating. Efforts to reforest were headed by the Forest Service and Civilian Conservation Corps in the early 1930s. Now many nonprofit groups and Alta Ski Resort primarily continue to replant trees each year. As you hike around or ski at the resort today see how many different types of trees there are. Can you name them all?

To help learn the names of the most common trees you will see at Alta, complete the wordsearch below.

WORD-BANK:

Limber Pine
Engelmann Spruce
Oak
Aspen
Douglas Fir



Naturalist Notebook

Naturalist Rangers carry a notebook to record things they have seen. Did you know if you write or draw what you see you won't forget it? On your adventures, you can keep a record of all the animals, plants, and places you see. You might notice an owl in a tree or see a moose. What types of tracks did animals leave behind? What was the weather like during your visit? You can keep a naturalist's notebook throughout the year to record what you see. Why not begin today by keeping a record of your adventures here in Alta? Record what you have seen and experienced in the notebook below. Have fun!



Junior Ranger Oath

We hope you had a full day of fun discoveries at Alta. You are ready to take the Friends of Alta pledge:

Please place your left hand over your heart and raise your right hand and read the following aloud:

“I (state your name) pledge to always be curious, respectful and safe when visiting natural spaces. I pledge to care for my community and the earth and encourage others to do the same. I will continue to explore the natural world and learn as much as I can where ever I go.”

Congratulations! You are now a Friend of Alta!



Parent Certificate of Completion

Has completed the Junior Ranger Program at

Name

Alta, Utah by completing pages 5 and _____ of the Junior Ranger

Page Numbers

Activity book.

Parent Signature and Date

This certifies that

Has completed the Junior Ranger Program at Alta, Utah
and is hereby considered an official Junior Ranger and a
Friend of Alta.

Awarded on the _____ day of _____, 20____



We want to thank the talented photographers
who contributed their images:

Jason Luther
Janice Gardner
John Frawley



Thank you for completing the Snow Ranger Activity Book!
Written and interpreted by Friends of Alta staff.

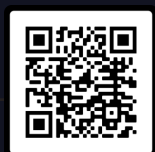
The purpose of Friends of Alta is to protect our natural resources for generations to come.
We partner with local, state and national agencies, nonprofit
organizations and individuals who share a commitment to conservation.

Friends of Alta operates entirely on contributions from donors like you! Any
donation makes a huge a difference. Thank you for your support.

Thank you to Central Wasatch Commission and Alta Environmental Center that
helped make this program possible!



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