

White Mountain National Forest

Junior Forest Ranger Activity Book



Drawn by Marek Bennett
in collaboration with White Mountain National Forest Staff

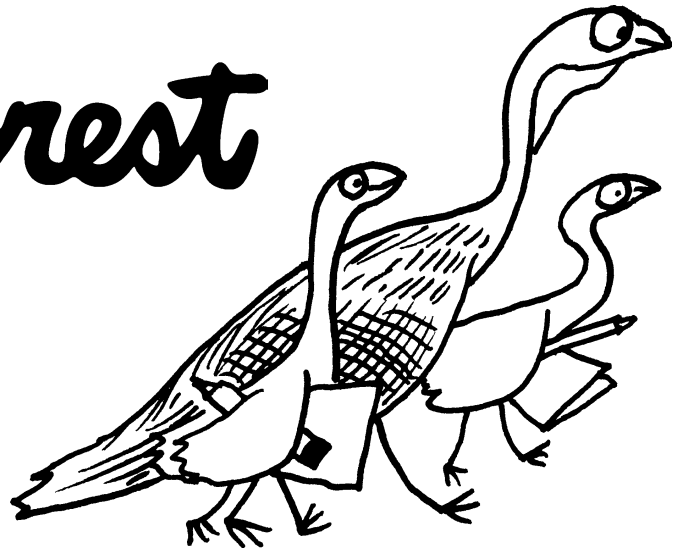


WELCOME TO YOUR

White Mountain National Forest

This **Junior Forest Ranger Activity Book** will help you discover some of the fascinating and fun things about a national forest. Together with an adult, a friend or even by yourself you can complete activities in this book to earn a Junior Ranger patch! (See "How to Use This Book," below.)

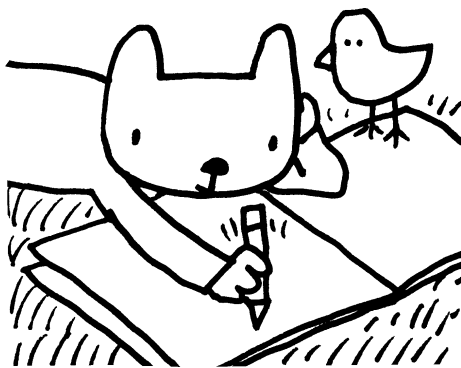
As you complete this book, we wish you good luck, lots of forest fun, and some White Mountains discoveries of your own...



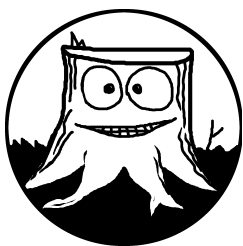
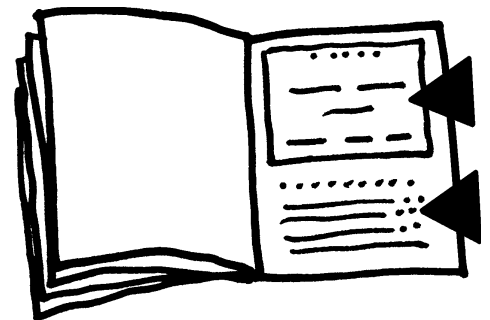
Enjoy your national forests!

Sincerely,
the **WMNF Junior Ranger team.**

HOW TO USE THIS BOOK:



- 1) **Complete as many pages as your age** in this book.
- 2) **Bring this book** to any WMNF Visitor Center or District Office.
- 3) **Ask a ranger** to check your pages, then fill out & sign your Junior Forest Ranger Certificate (on the inside back cover).
- 4) Be sure to fill out the **feedback form** (also on the inside back cover) & return it as directed in the form.



Whenever you see "Stumpy" in this book, that's your invitation to play "Stump the Ranger!" Just follow the extra directions, then show your work to a forest ranger to receive a special sticker (or other prizes, as available). If you can't find a ranger, you can test out your "stumpwork" on your friends & family.

The White Mountain National Forest Junior Forest Ranger Activity Book / VERSION 2019.09.18

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LEAVE NO TRACE

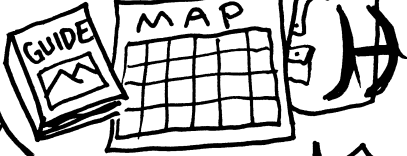
As you explore & enjoy the White Mountain National Forest, the "Leave No Trace" **Seven Principles** help you safeguard the environment for all! Follow the path through this maze to find all 7 principles...



The Leave No Trace Seven Principles
© 1999 by the Leave No Trace Center for Outdoor Ethics: www.LNT.org

START:

① PLAN AHEAD and PREPARE!



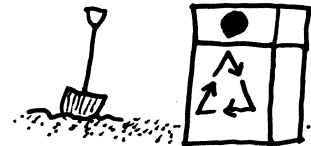
② TRAVEL and CAMP on DURABLE SURFACES.



④ LEAVE what you FIND.



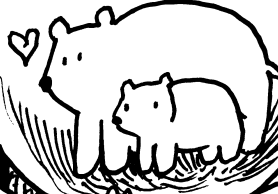
③ DISPOSE OF WASTE PROPERLY.



⑤ MINIMIZE CAMPFIRE impacts.



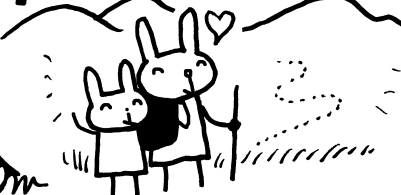
⑥ RESPECT WILDLIFE.



⑦ BE CONSIDERATE of other VISITORS.



"LEAVE NO TRACE"



hikeSafe MOOSE!



Help **Moose** pack the "hikeSafe" Ten Essential Items needed for a safe hike! Draw a line from each backpack clue (left) to the correct essential item in Moose's too-big packing list (right):



1. This helps you find directions... especially NORTH!

2. Helps you find the right trails.

3. In case you need more layers.

4. Handy tool for cutting, marking, etc.

5. In case you're still hiking when night falls.

6. In case you get hungry or thirsty.

7. In case of weather surprises.

8. Helps you make a loud, piercing signal for help.

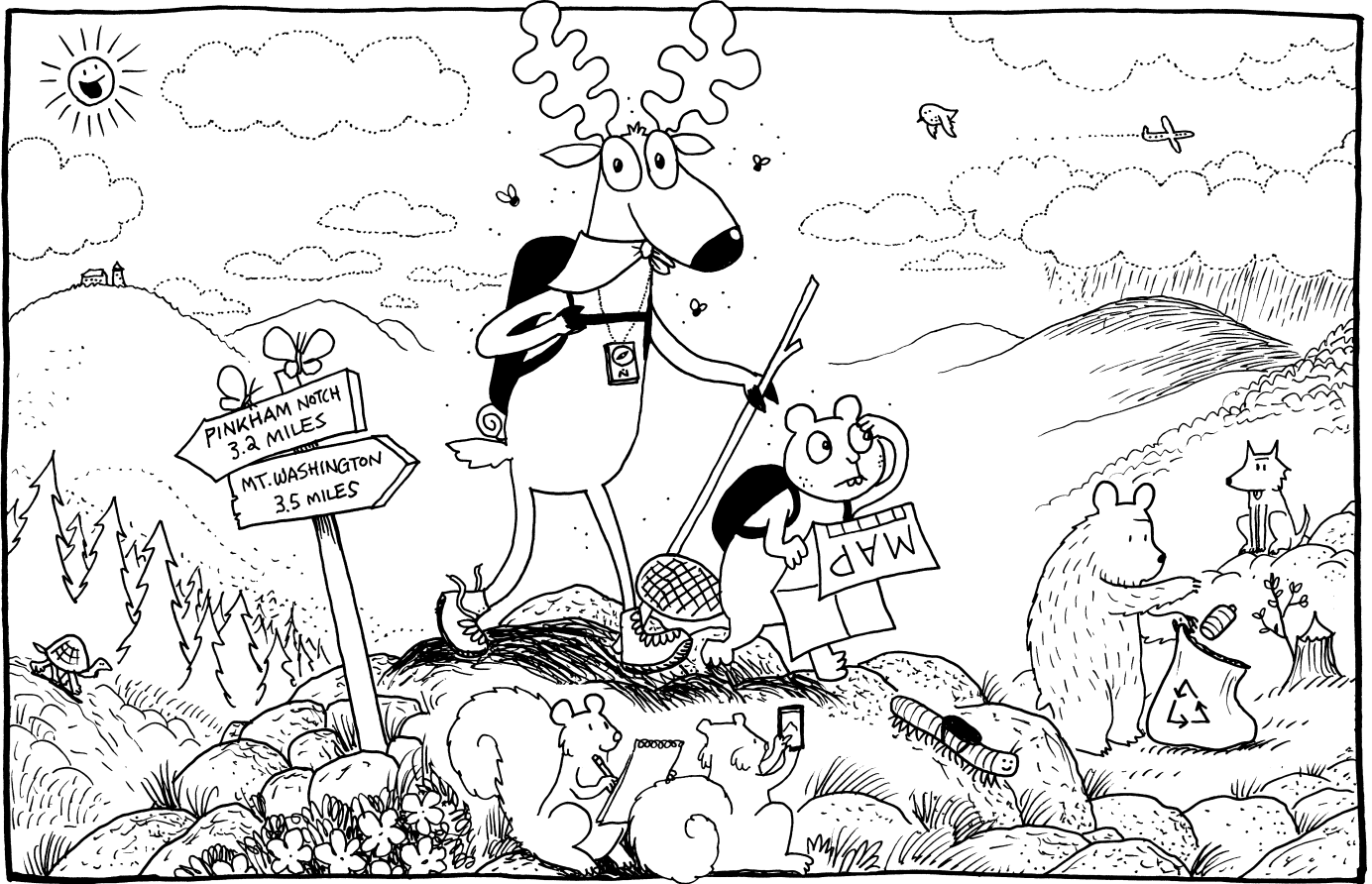
9. In case of injury.

10. In case you need to start a campfire.

- ball
- binoculars
- camera
- cards
- CD player
- compass
- food & water
- first aid kit
- flashlight
- frisbee
- guitar
- hair dryer
- hammock
- makeup
- map
- matches
- nametags
- pocket knife
- popcorn popper
- rain/wind gear
- recipe book
- stilts
- sunglasses
- umbrella
- vacuum cleaner
- warm clothing
- whistle
- yo-yo



STUMP A RANGER: What "Essential Item" (or items) would *you* add to Moose's packing list? Make up your own clue(s) & see if a ranger can guess your items!

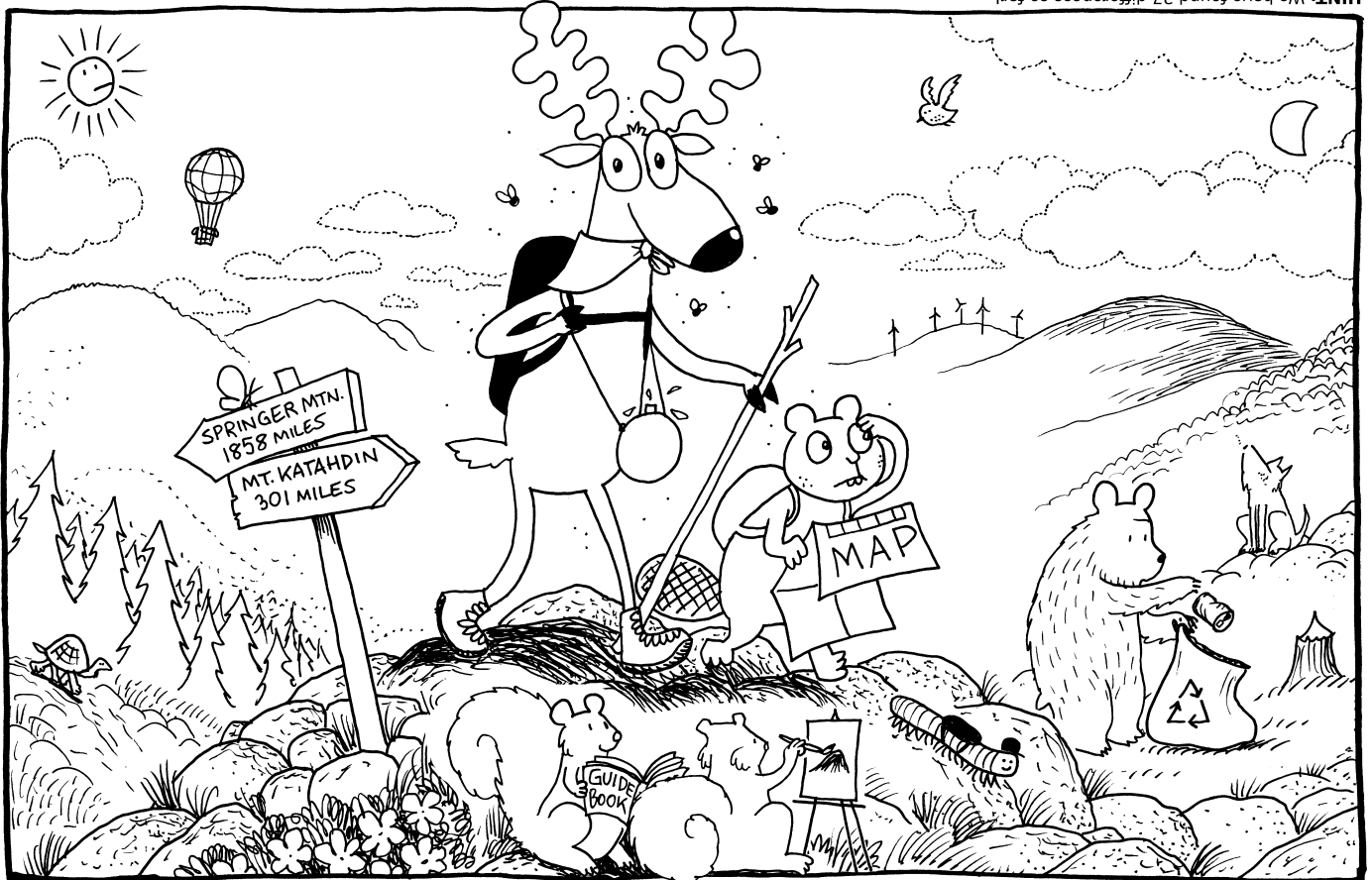


SPOT THE DIFFERENCES...

These two hiking pictures *seem* identical, but they actually have more than 20 differences. Circle all the differences you can spot -- Some are obvious, but some are not!

How many differences can you find? Write your total here:

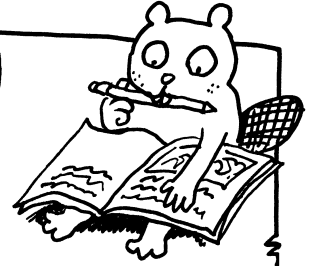
HINT: We have found 27 differences so far!



Use this page to record some observations from a favorite spot in the White Mountain National Forest. Descriptive words & drawings can help your readers feel like they're AT your chosen spot!



My Nature Journal



TODAY'S DATE: _____

THE SEASON IS: spring / summer / fall / winter

THE WEATHER IS: _____

THE TEMPERATURE IS: _____ °F / _____ °C

MY LOCATION IS: _____

OBSERVATIONS:

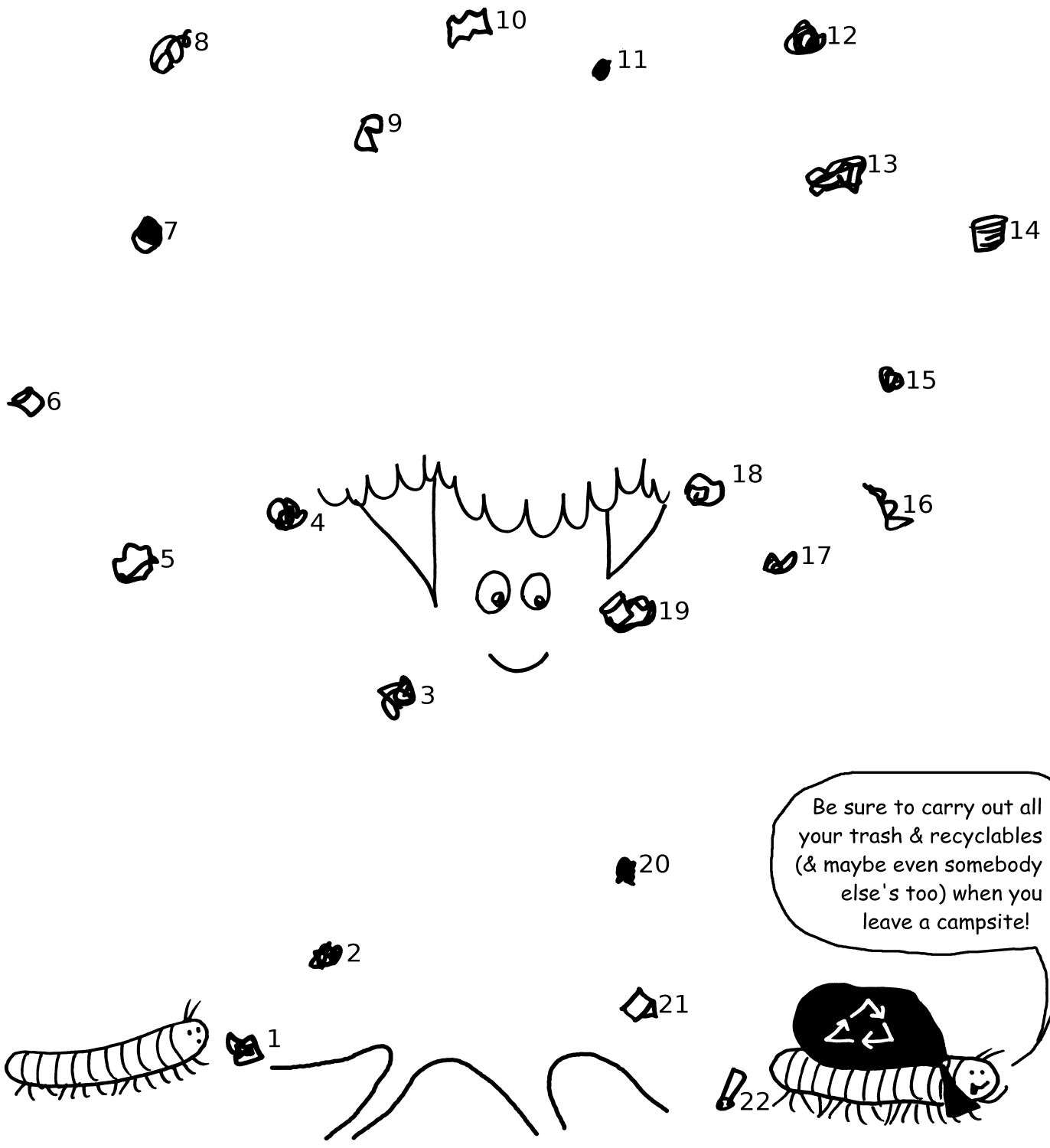
SKETCH SOME DETAILS YOU NOTICE IN YOUR ENVIRONMENT:



BONUS: Visit the WMNF website for an extra page showing you how to draw "Nature Journal Comics"!

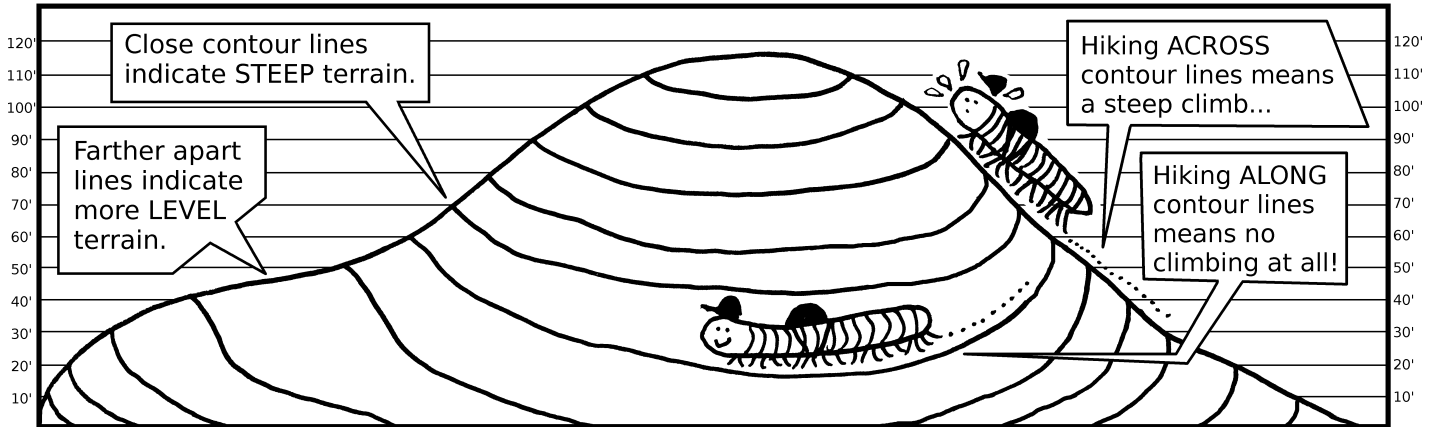
CAMPSITE CLEAN-UP CONNECT THE DOTS

Help Centi the centipede clean up her campsite by collecting all the little bits of litter! Connect each piece of "micro-trash" in order from #1-22 to leave behind a healthy, happy forest...

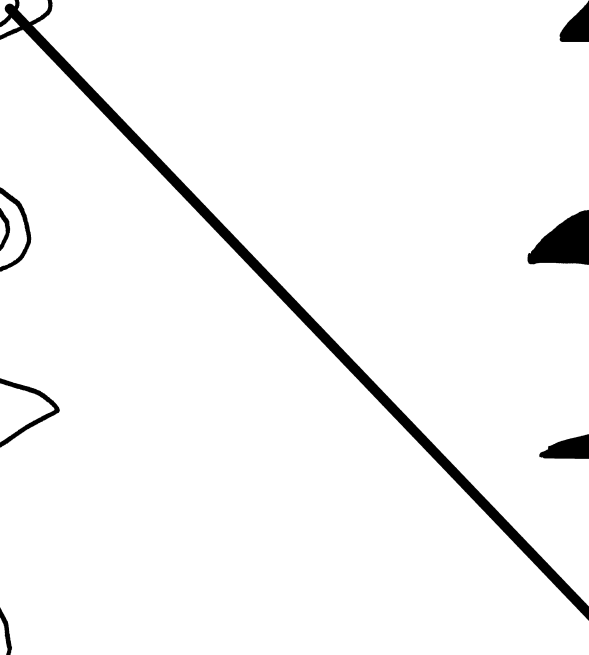
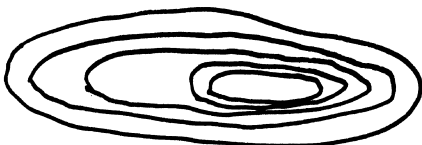
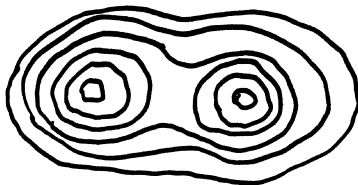
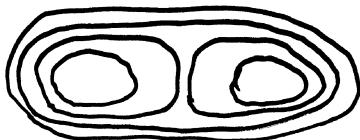
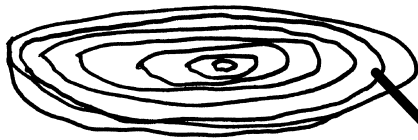
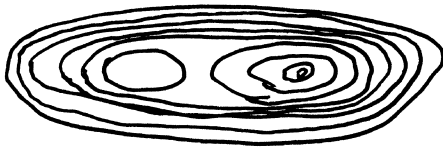


CONTOUR MATCH-UP!

CONTOUR LINES are imaginary map lines that join points of equal elevation in the terrain.



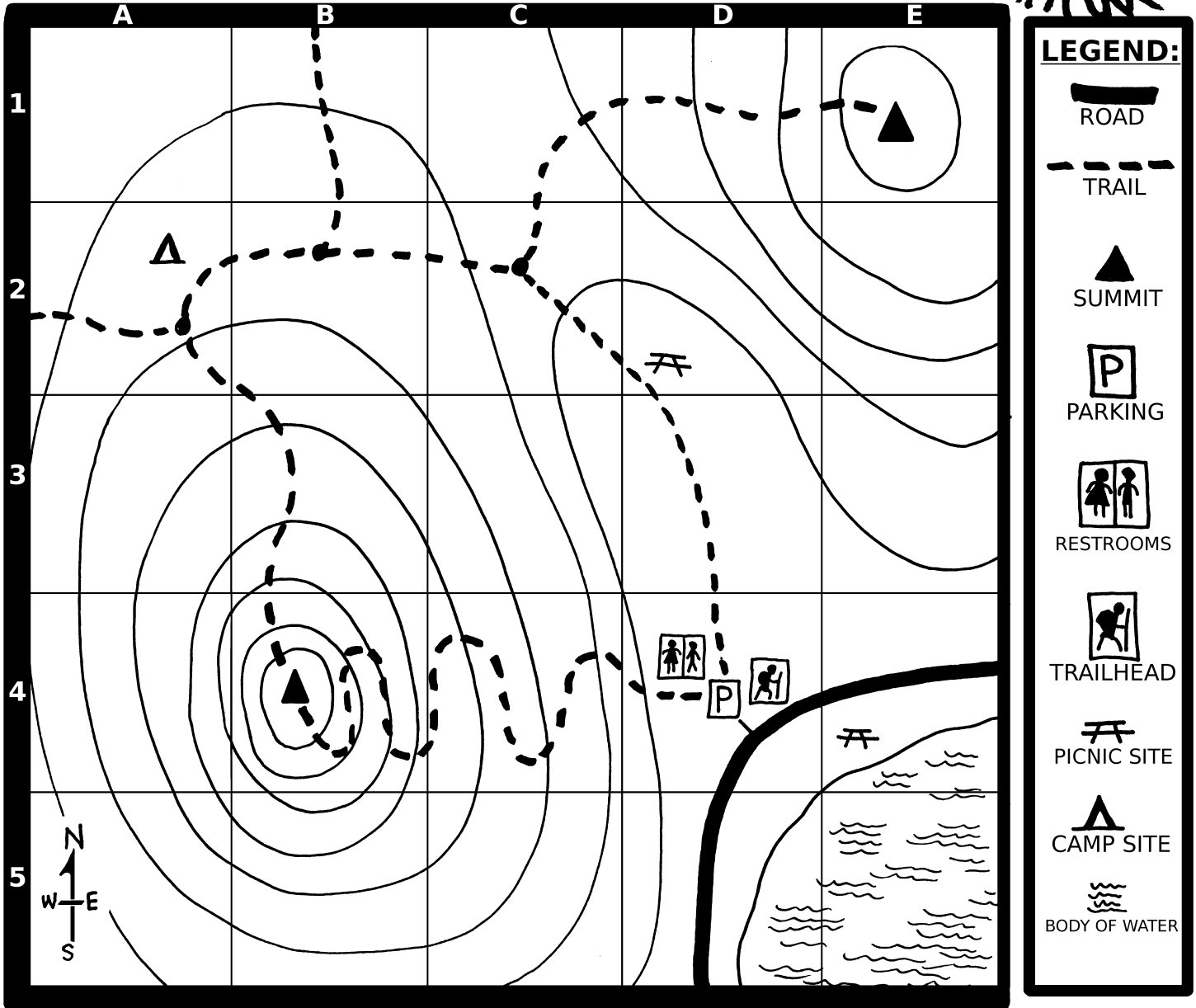
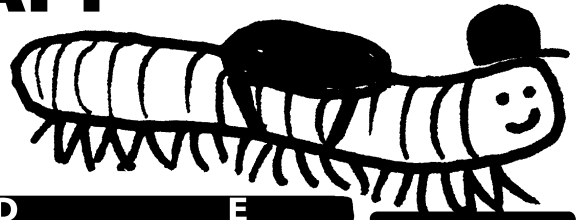
Draw a line matching each **CONTOUR LINE DRAWING** (left) with the actual side-view **HILL SHAPE** it represents (right):



READING A TRAIL MAP:

Help Centi read this trail map to plan her next hike!

You can find "coordinates" by combining a letter (from along the top of the map) with a number (left side) to indicate a precise square on the map.



FIND THE COORDINATES FOR...

1) Starting from the ROAD, find the PARKING LOT & TRAILHEAD: **D4**

2) The highest SUMMIT on the map: _____

3) A PICNIC SITE near water: _____

4) A PICNIC SITE between two summits: _____

5) A possible CAMP SITE: _____


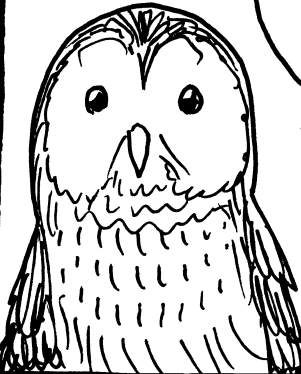

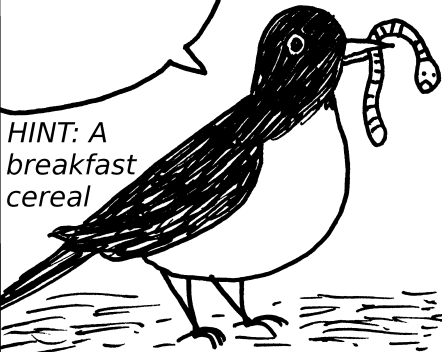


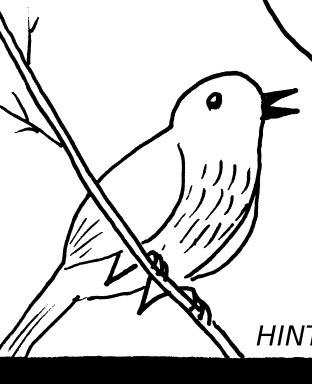

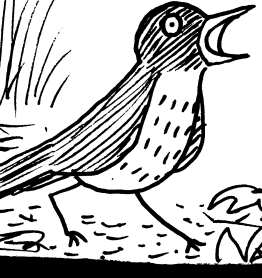
6) A TRAIL JUNCTION where the trail from the camp site meets a trail that leaves the map heading NORTH: _____

7) Two squares with SWITCHBACKS (where the trail goes back & forth along steep terrain): _____ and _____

MUSICAL MESSAGES



Birds sing to identify their territory or to find a mate. Birds also sing to “talk” to let other birds know where they are and if they’re friendly or looking to defend food or territory. Some bird songs sound like everyday words people use. Below are pictures of some birds you will find in the White Mountains. Using the clue in each panel, match that bird with its human-word song (bottom) & put the correct song letter in that bird’s balloon:

<p>RED-EYED VIREO</p>  <p>HINT: Elevator</p>	<p>BARRED OWL</p>  <p>HINT: A chef</p>	<p>BLACK-CAPPED CHICKADEE</p>  <p>HINT: Baby chicken</p> <p>A</p>
<p>ROBIN</p>  <p>HINT: A breakfast cereal</p>	<p>WHITE-BREASTED NUTHATCH</p>  <p>HINT: Pull twice</p>	<p>WILD TURKEY</p>  <p>HINT: Eat fast X 2</p>
<p>YELLOW WARBLER</p>  <p>HINT: Candy</p>	<p>GOLDFINCH</p>  <p>HINT: Salty crisp</p>	<p>OVENBIRD</p>  <p>HINT: Works at a school</p>

- ✓(A) “Chick-a-dee-dee-dee”
- (B) “Sweet, sweet, sweet, I’m so sweet”
- (C) “Cheerio, cherry me, cherry me”
- (D) “Teacher-teacher-teacher”
- (E) “Yank, yank”
- (F) “Gobble, Gobble”
- (G) “Going up — coming down”
- (H) “Potato chip-potato chip”
- (I) “Who cooks for you”

SOIL SEARCH!

Can you help these eager earthworms with their scientific research? Follow the tunnels to uncover the soil science facts!

We're tunnelling down to connect these MEASUREMENTS with their FACTS...

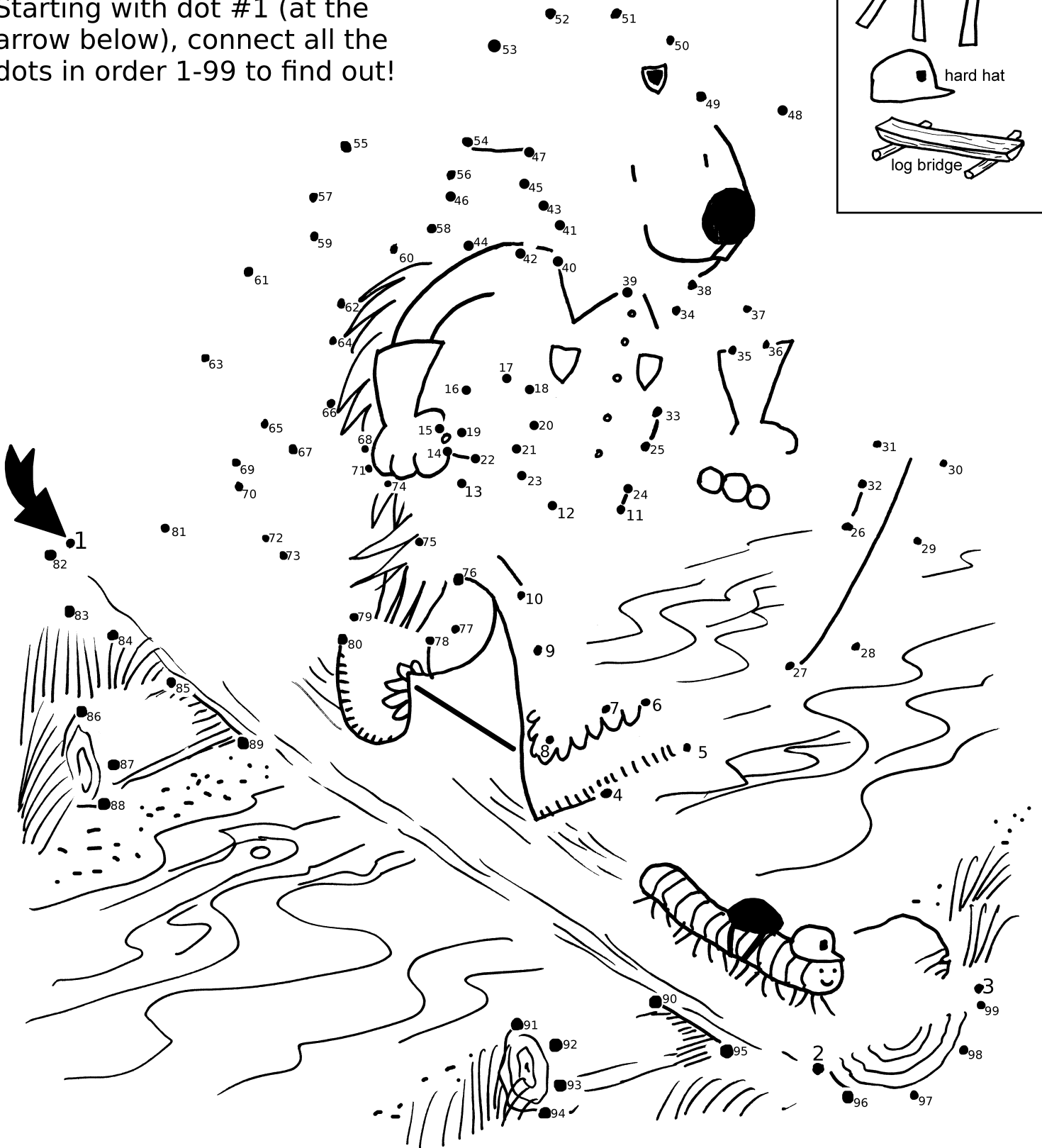
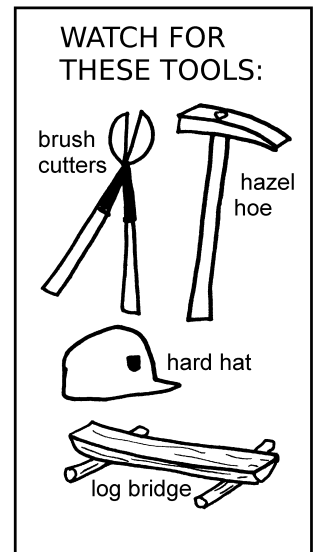
Let's make EACH TUNNEL a different color!

STUMP A RANGER: Earthworms play an important role in the forest ecosystem, but many other living things both depend on AND help build healthy soil! **Draw a picture** showing as many "soil protectors" as you can find in the White Mountain National Forest, and share it with a ranger. Can they find all the soil protectors in your picture? Can they suggest any others?



TRAIL MAINTENANCE CONNECT-THE-DOTS

Who's working to maintain our National Forest trail system? Starting with dot #1 (at the arrow below), connect all the dots in order 1-99 to find out!





NATURE RIDDLES!

Write in the answer to each nature riddle below. We started you off with the first one!

1) What TREE NAME do people carry in their hands?

PALM!

2) What ARACHNID'S NAME is like the sound of a clock?

3) What TREE NAME sounds like what you call lots of sand at the edge of the water?

4) What INSECT is also a letter?

5) What TREE NAME sounds like what keeps animals warm?

6) What FRUIT TREE NAME always has a partner?

7) What INSECT NAME is like your father's sister?


8) What BIRD is also a church official?

9) What TREE NAME sounds like what you find after a fire?

10) What BIRD is a royal angler?

11) What INSECT can help you climb a mountain?

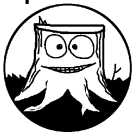
12) What BIRD is also a letter?



STUMP A RANGER: Write your own nature riddle, and test it out on a forest ranger!



WHITE MOUNTAINS IN COLOR: Color this trailside scene as our forest friends plan their hike! The colors you choose will help determine the season in different parts of this poster...

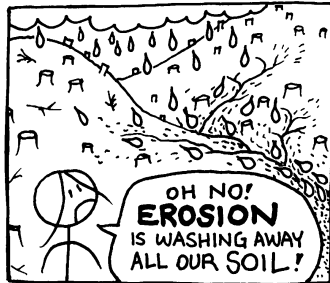
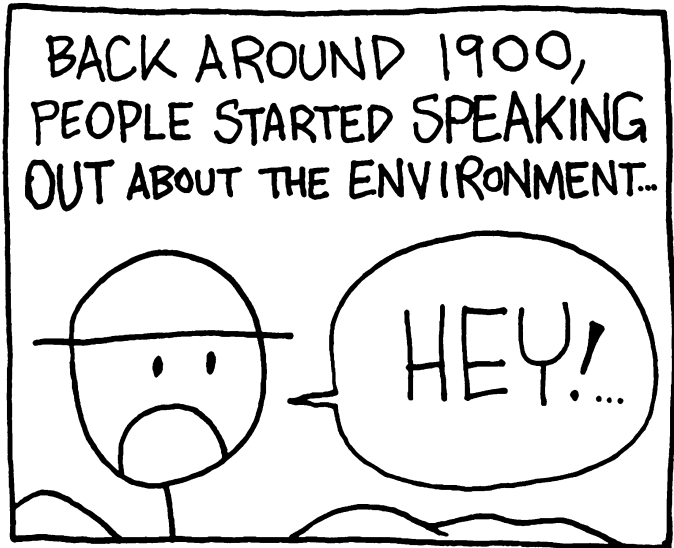


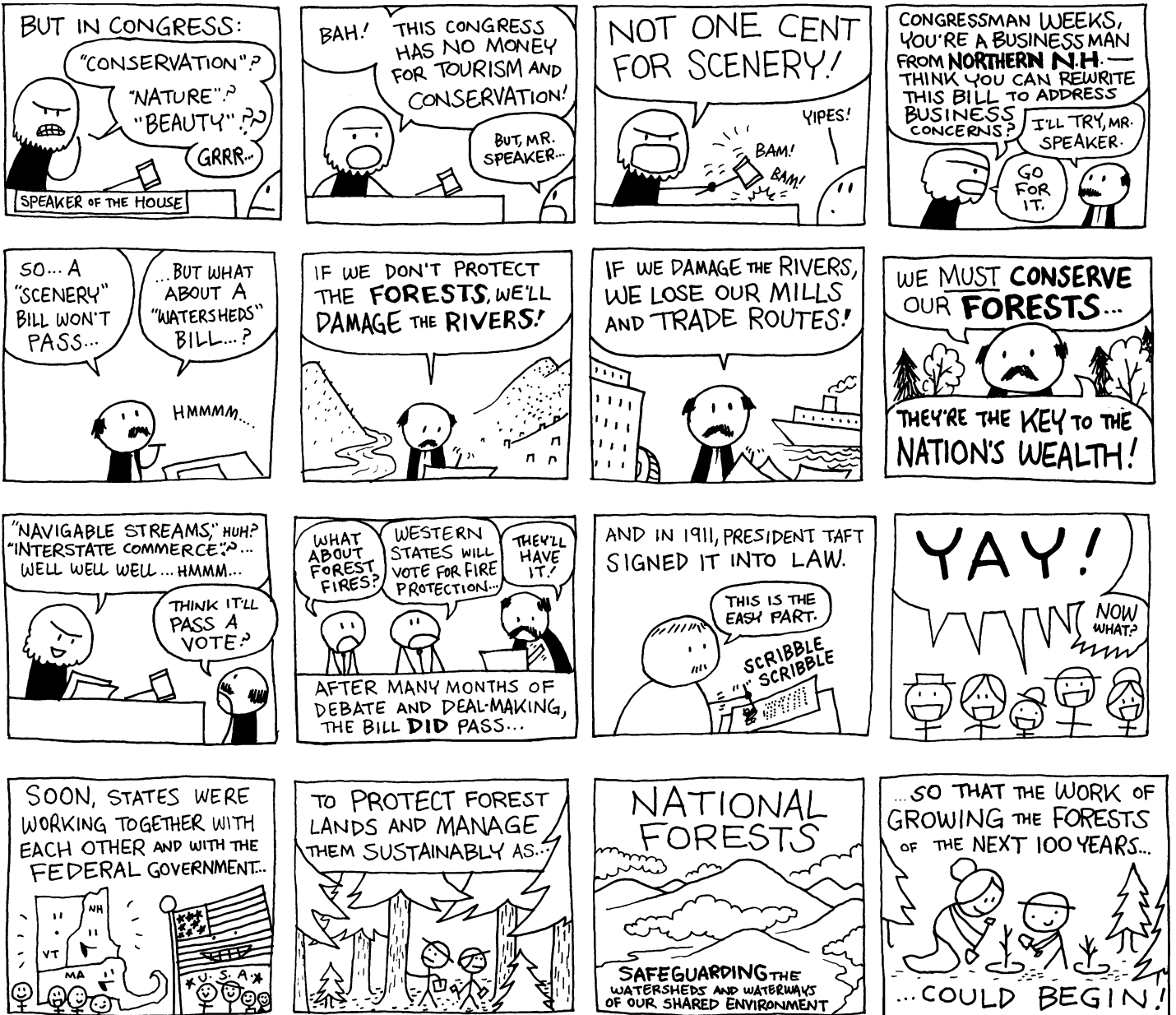
BONUS: Can you find each of the *hikeSafe 10 Essential Items* somewhere in this poster? Circle them and share them with a ranger. Do you think these hikers are well prepared for their hike?



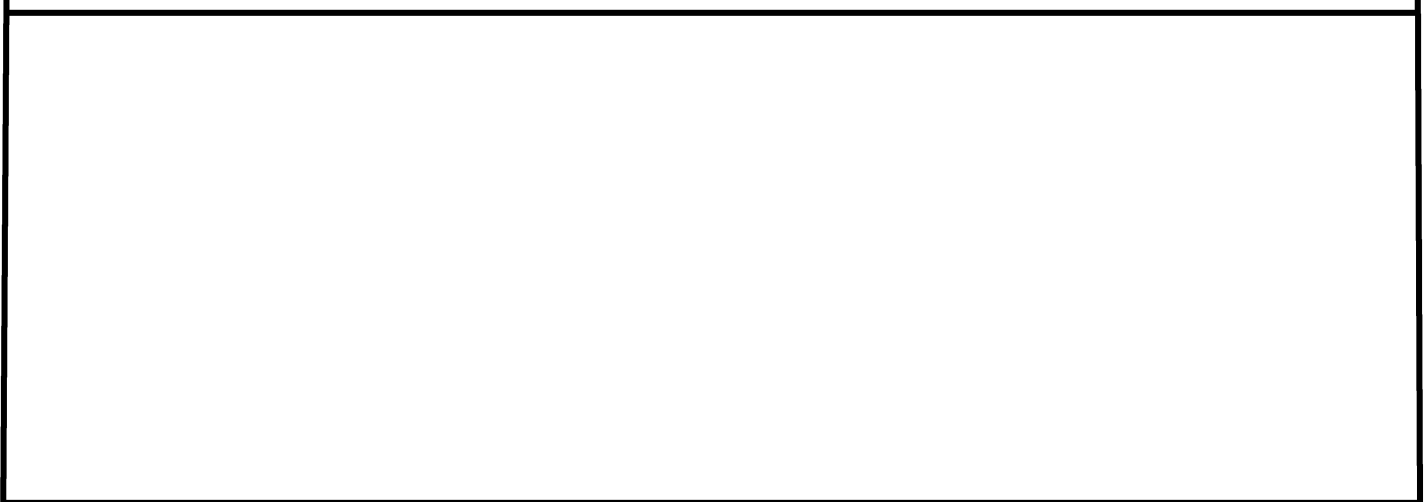
THE WEEKS ACT STORY

By Marek Bennett
www.MarekBennett.com





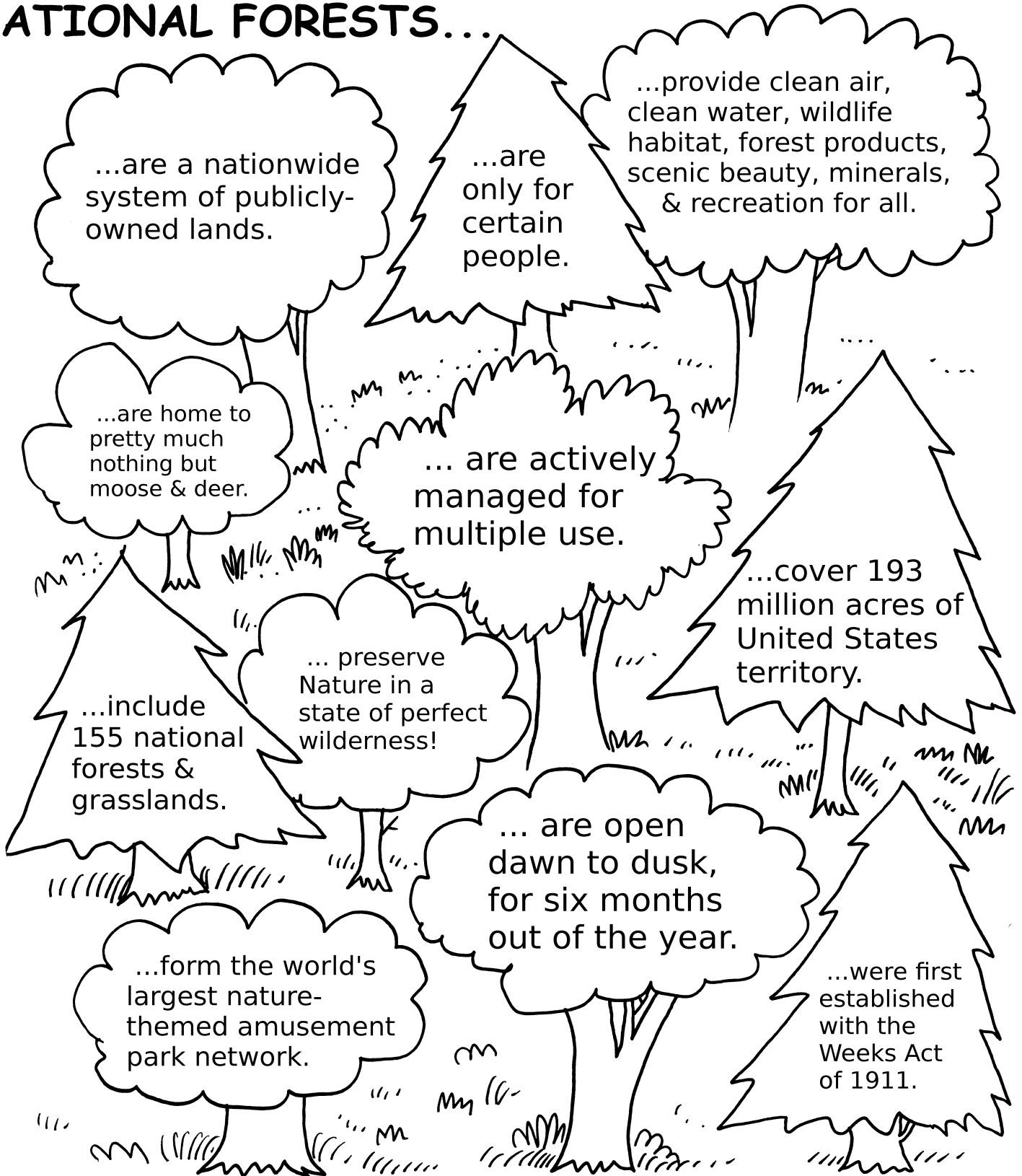
YOUR TURN: JOHN WEEKS is a real person who lived over a hundred years ago! Draw what you think he'd do & say if he could visit the WHITE MOUNTAIN NATIONAL FOREST today...



WHAT IS A "NATIONAL FOREST"?

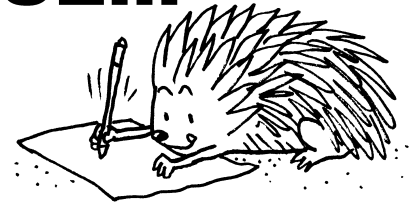
Help us safeguard and strengthen the environment! Draw an "X" through the trees that DO NOT describe National Forests, so that the healthy (and fact-based) trees can flourish:

NATIONAL FORESTS....



A FEORST PORDIVES TSHEE... A FOREST PROVIDES THESE...

We rely on forests in many ways & for many things. **Unscramble** the following mystery words to reveal what a forest can provide:



NELCA RIA = _____

SENERCY = _____

SBJO = _____

DOFO = _____

LIWDFILE BATIHAT = _____

RETARECINO = _____

FROTSE DURPSTOC = _____

LENCA REWAT = _____

BLURME = _____

APPER = _____

FRIEDWOO = _____

LOIS TICPRETOON = _____

DOBIVITISERY = _____

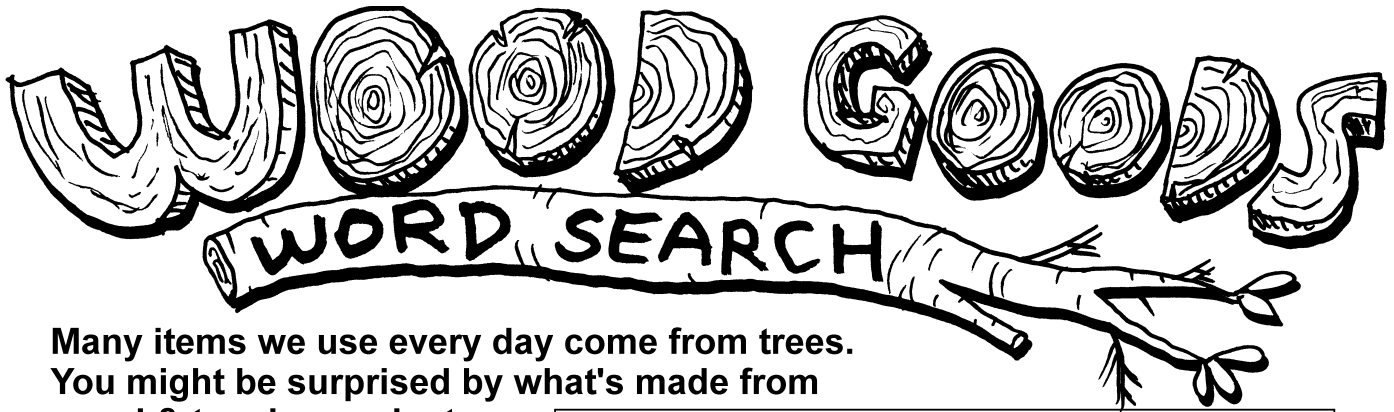


STUMP A RANGER: Keep an eye out for other forest products around you in the White Mountain National Forest. Scramble them up (on the lines, below left), & share them with a Ranger!

_____ = _____

_____ = _____

_____ = _____



Many items we use every day come from trees. You might be surprised by what's made from wood & tree by-products...

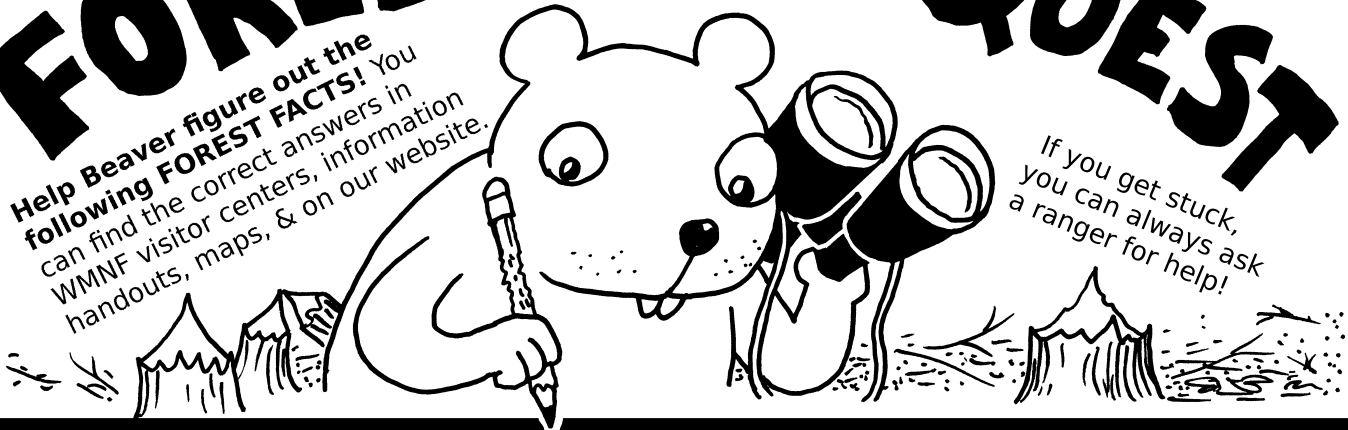
Find the following tree-based products (right) in the word search below. (Words can run ACROSS, UP, DOWN, DIAGONALLY, & even BACKWARDS.)

- | | | | |
|---|-----------|------------|------|
| <input checked="" type="checkbox"/> BAND AIDS | FURNITURE | PAPER | TOYS |
| CARPET | ICE CREAM | PENCILS | |
| CLOTHES | LUMBER | RUBBER | |
| FRUIT | MEDICINE | TOOTHPICKS | |
| FUEL | PAINT | TOOTHPASTE | |

J	S	N	T	K	E	I	I	G	T	B	N	C	N	R
P	O	K	S	E	T	U	Z	C	V	E	L	S	E	S
X	A	E	C	K	S	S	B	L	E	O	P	B	S	E
B	O	I	I	I	A	T	Y	V	T	C	B	R	R	W
A	J	S	N	Z	P	K	V	H	Z	U	R	U	A	J
N	S	Y	O	T	H	H	E	Y	R	E	T	E	G	C
D	T	K	K	C	T	S	T	T	U	I	H	V	A	Z
A	M	J	G	Y	O	Y	F	O	N	G	P	J	Z	M
I	X	X	X	F	O	I	F	R	O	V	V	Q	Q	I
D	P	H	S	D	T	U	U	U	B	T	Z	T	V	R
S	A	P	W	U	E	F	M	E	D	I	C	I	N	E
X	P	K	T	L	S	R	S	L	I	C	N	E	P	B
N	E	C	F	R	U	I	T	P	I	O	C	M	F	M
O	R	K	Z	S	K	D	I	K	K	C	P	L	F	U
K	B	F	Q	D	A	F	H	K	Q	F	Z	R	G	L

FOREST FACT QUEST

Help Beaver figure out the following **FOREST FACTS!** You can find the correct answers in WMNF visitor centers, information handouts, maps, & on our website.



If you get stuck, you can always ask a ranger for help!

<p>1) Name the two National Forests in New England:</p>	<p>6) What is the elevation of the highest point on the Kancamagus Highway?</p>
<p>2) Name any 3 of the 48 White Mountains over 4,000 feet tall:</p>	<p>7) What is the elevation at the summit of Mt. Washington (the highest point in the northeastern United States)?</p>
<p>3) In which two New England states is the White Mountains National Forest located?</p>	<p>8) U.S. Forest Service Snow Rangers of the Mt. Washington Avalanche Center are the only Forest Service avalanche forecasters & educators east of the _____ Mountains:</p>
<p>4) What scenic byway follows a Native American footpath named for the last chief of the Penacook Confederacy (a union of 17 New England tribes)?</p>	<p>9) The Great Gulf Wilderness (the first federal Wilderness designated on the WMNF) is located on which Ranger District?</p>
<p>5) Name the two National Historic Sites in the White Mountains (HINT: Both are located in the Saco Ranger District.):</p>	<p>10) How many miles of old railroad tracks are there in the Pemigewasset Wilderness?</p>
	<p>11) What's the river near Loon Mountain whose name is an Abenaki word meaning, "rapidly moving"?</p>
	<p>12) What's the name of the world class rock climbing area in the Pemigewasset District?</p>



STUMP A RANGER: Find your own fun facts about the White Mountain National Forest! They can be map facts, statistics, or interesting historical sites. Write them down, and see if a ranger can answer your quiz. (You might want to let them to look up the answers.)

WHAT DO FOREST RANGERS DO?

Pair the following **types of rangers** (right) with their **job descriptions** by writing their numbers in the correct circles below. (#1 is already done for you!)

- ✓ 1) Trail crew
- 2) Backcountry
- 3) Visitor Services
- 4) Forester
- 5) GIS Map/Data
- 6) Administrative
- 7) Fire Management
- 8) Law Enforcement
- 9) Recreation Crew

○ **Oversee forestry projects, such as identifying which trees will be cut down for sale.**

○ **Conduct prescribed burns and contain & suppress wildfires.**

○ **Develop & maintain accurate maps of the White Mountain National Forest.**

○ **Maintain recreation sites, pick up trash, clean restrooms, replace signs, etc.**

○ **Patrol remote areas & trails, talk to & help hikers, teach the "Leave No Trace 7 Principles."**

1 **Build & maintain trails on the White Mountain National Forest.**

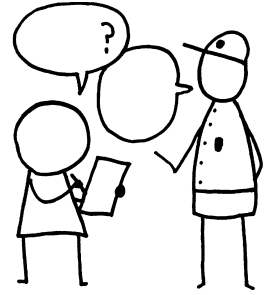
○ **Manage receipts, purchase supplies, process administrative paperwork (timesheets, correspondence, etc.).**

○ **Answer visitors' questions & educate them about the forest & forest safety (for example: "hikeSafe").**

○ **Make sure visitors follow forest rules & don't harm the environment.**

INTERVIEW A FOREST RANGER

Find a forest ranger who can take a couple minutes to speak with you and answer some interview questions. Write their answers in the spaces below:



RANGER'S NAME: _____ **Years on the job:** _____

What is your job? (Type of ranger, responsibilities, etc.)

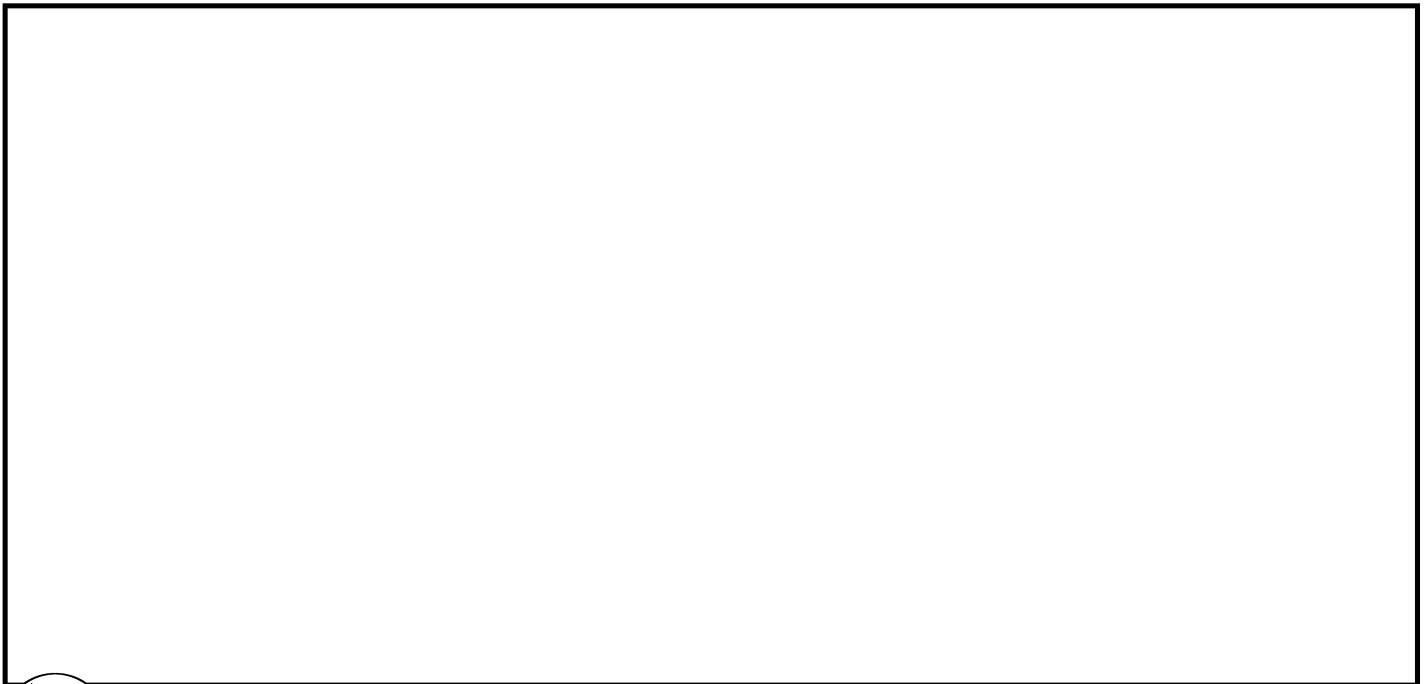
What part(s) of the forest do you work on?

What's the most rewarding part of your job?

What's the most difficult part of your job?

What's one thing you would like people to learn today?

Now draw a picture showing this ranger at work, based on what they've told you:



BONUS: Color your picture; then share this page with your ranger to get their reaction!

WHITE MOUNTAIN NATIONAL FOREST ODYSSEY MAZE!

by Marek Bennett ~ www.MarekBennett.com

Starting out from **Plymouth** (bottom, left), can you find your way through the notches of the **White Mountains** to the summit of **Mount Washington**?

This maze will take you on a *very* roundabout route, & teach you a few place names along the way. (If you hit an **X**, just go back & find another route.)

- MAZE DIRECTIONS:** From PLYMOUTH, go to...
- SANDWICH NOTCH → the town of SANDWICH
 - the town of CONWAY → KANCAMAGUS HIGHWAY
 - FRANCONIA NOTCH
 - the town of FRANCONIA
 - ZEALAND CAMP
 - ZEALAND NOTCH
 - the APPALACHIAN TRAIL
 - CRAWFORD NOTCH
 - the town of JACKSON
 - PINKHAM NOTCH → CARTER NOTCH
 - EVANS NOTCH → the town of GORHAM
 - the top of MOUNT WASHINGTON!

LET'S START OUR JOURNEY HERE:





(CC)Marek Bennett www.MarekBennett.com

NOTE: While this maze maps out many important White Mountain sites, it is NOT intended for use as a hiking trail map!

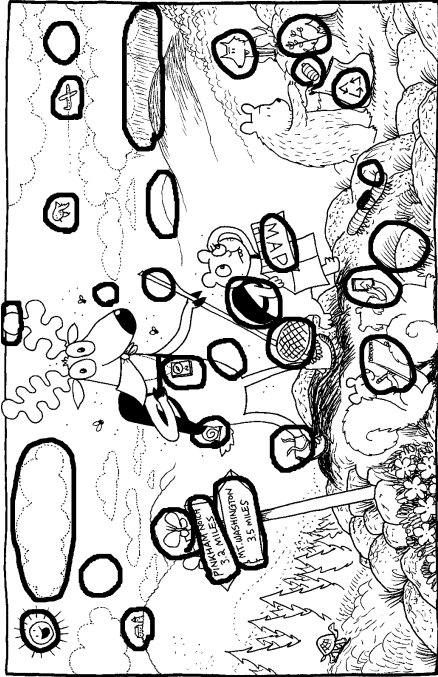


TOP-SECRET ANSWERS PAGE:

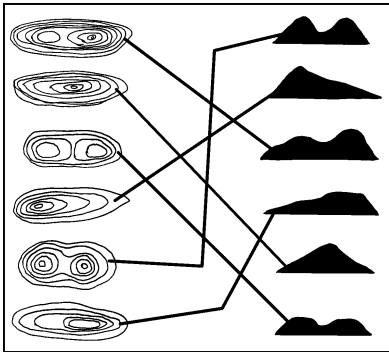
P.4 HIKESAFE MOOSE

- (1)compass (2)map (3)warm clothing
(4)pocket knife (5)flashlight (6)food & water (7)rain/wind gear (8)whistle (9)first aid kit (10)matches

P.5 SPOT THE DIFFERENCES



P.8 CONTOUR MATCH-UP!



P.9 READING A TRAIL MAP

- (1)D4 (2)B4 (3)E4 (4)D2 (5)A2
(6)B2 (7)B4,C4

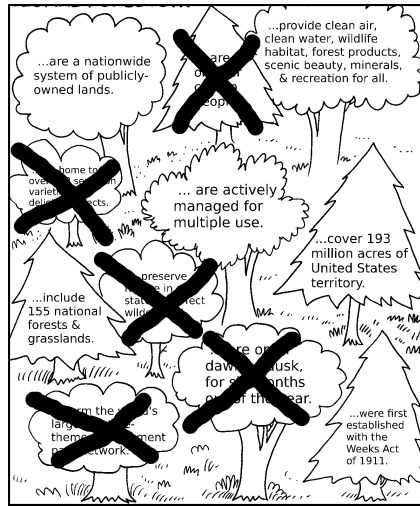
P.10 MUSICAL MESSAGES

- TOP ROW: (G)(I)(A)
MIDDLE ROW: (C)(E)(F)
BOTTOM ROW: (B)(H)(D)

P.13 NATURE RIDDLES

- (1)palm (2)tick (3)beech (4)bee (5)fir
(6)pear (7)ant (8)cardinal (9)ash
(10)kingfisher (11)walking stick
(12)jay

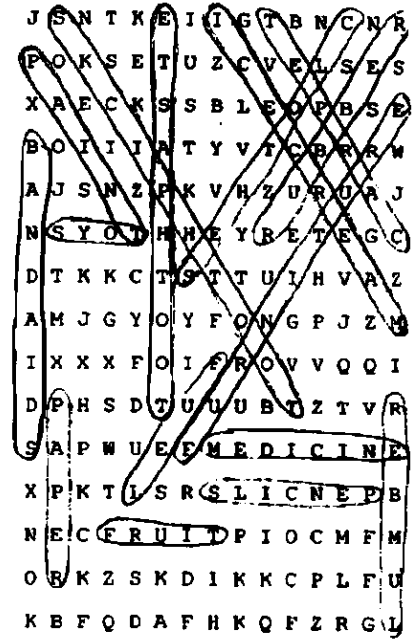
P.18 WHAT IS A NAT'L FOREST?



P.19 A FOREST PROVIDES...

- CLEAN AIR / SCENERY / JOBS /
FOOD / WILDLIFE HABITAT /
RECREATION / FOREST
PRODUCTS / CLEAN WATER /
LUMBER / PAPER / FIREWOOD /
SOIL PROTECTION /
BIODIVERSITY

P.20 WOOD GOODS...

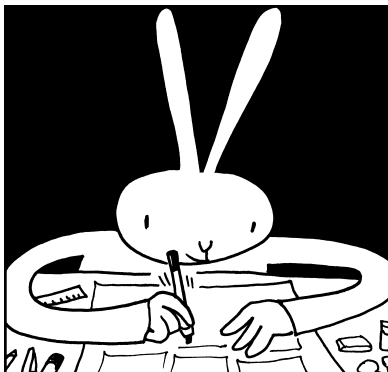


P.21 FOREST FACT QUEST

- (1)Green Mountain National Forest & White Mountain National Forest
(2)Answers may vary. (3)NH & ME
(4)Kancamagus (5)Russell Colbath House, Brickett Place (6)2,855 ft.
(7)6,288 ft. (8)Rocky
(9)Androscoggin (10)50
(11)Pemigewasset (12)Rumney Rocks

P.22 WHAT DO FOREST RANGERS DO?

- TOP ROW: (4)(7)(5)
MIDDLE ROW: (9)(2)(1)
BOTTOM ROW: (6)(3)(8)



ABOUT THE CARTOONIST:

Marek Bennett grew up in New Hampshire – he is old enough to remember visiting The Old Man of the Mountain when he (Marek) was a kid! He draws lots of comics about New England history, including his current long-running series, *The Civil War Diary of Freeman Colby*. Marek teaches Comics Workshops at schools & libraries all over. For more about Marek's work, including new White Mountains material & sneak-peeks at upcoming projects, see: www.MarekBennett.com

You can also find Marek on social media & at work in his online open studio at: www.patreon.com/marekbennett



White Mountain National Forest JUNIOR FOREST RANGER CERTIFICATE

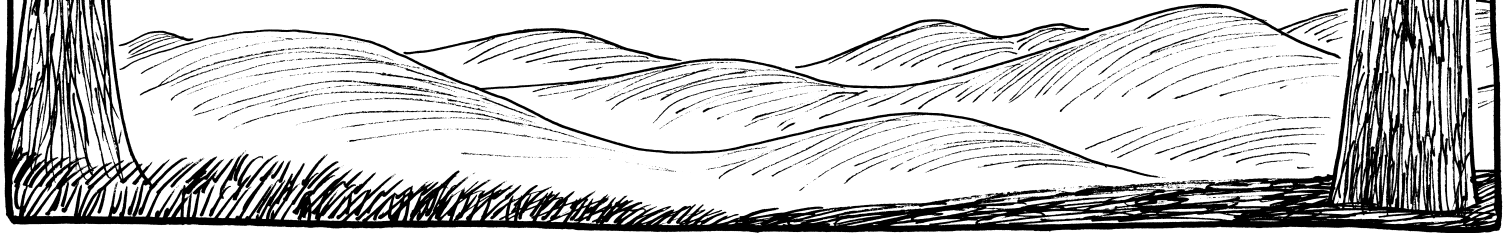
Junior Forest Ranger Pledge: I give my pledge as a Junior Forest Ranger to save and faithfully defend from waste the natural resources of my country—its soils and minerals, its forests, its flowers and trees, its waters and its wildlife.

JR. RANGER'S
FULL NAME: _____ AGE: _____

I hereby certify that the above person has
successfully completed all the requirements to be a
White Mountain National Forest Junior Ranger.

FOREST
RANGER
NAME: _____ DATE: _____

WMNF
LOCATION: _____



JUNIOR RANGER ACTIVITY BOOK FEEDBACK FORM

Please take a few moments to fill out this form and...:

- Give it to a Ranger or US Forest Service Volunteer.
- Send it to the WMNF (see box →).

WMNF Junior Ranger Team
71 White Mountain Drive
Campton, NH 03223

www.fs.usda.gov/contactus/whitemountain/about-forest/contactus

Thanks for helping us improve our offerings for White Mountain National Forest visitors!

(1) AGES OF CHILDREN USING THIS BOOK: _____

(2) FAVORITE PAGE IN THIS BOOK: _____

BECAUSE: _____

(3) IN FUTURE EDITIONS, I WOULD LIKE TO SEE MORE PAGES WITH (circle any):

- coloring word search riddles connect-the-dots mazes puzzles
animals plants people how-to stories other _____

MORE JUNIOR RANGER RESOURCES:

- For extension activities & resource links related to this book, visit:
WMNF “Just for Kids” www.fs.usda.gov/main/whitemountain/learning/kids
- For new artwork & special features from **Marek Bennett's Comics Workshop**, see: www.MarekBennett.com
- **The White Mountain National Forest:** www.fs.usda.gov/whitemountain
- The Forest Service's **Junior Forest Ranger** site: www.fs.fed.us/learn/kids

Connect with WMNF on social media! If you share images of your artwork from this book, please use the tag: #wmnfkids



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- We are extremely grateful for the creativity, synergy & collaborative skills of **Marek Bennett**. This book would not have happened without his efforts!

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To personalize this book cover: Fill the blank space on this cover (front & back) with a White Mountain forest scene for Moose & Beaver & friends to hike through! Color your artwork & share the results with a forest ranger or WMNF volunteer.

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