

Name: _____

ADDITION



2

$$\begin{array}{r} 1\ 7\ 2 \\ +\ 8\ 7\ 4 \\ \hline \end{array}$$

3

$$\begin{array}{r} 3\ 1\ 3 \\ +\ 4\ 5\ 4 \\ \hline \end{array}$$

1

$$\begin{array}{r} 7\ 7\ 9 \\ +\ 2\ 0\ 5 \\ \hline \end{array}$$

4

$$\begin{array}{r} 8\ 8\ 9 \\ +\ 5\ 4\ 8 \\ \hline \end{array}$$

5

$$\begin{array}{r} 6\ 5\ 4 \\ +\ 3\ 3\ 1 \\ \hline \end{array}$$

6

$$\begin{array}{r} 4\ 8\ 4 \\ +\ 8\ 5\ 7 \\ \hline \end{array}$$

7

$$\begin{array}{r} 8\ 5\ 9 \\ +\ 1\ 4\ 4 \\ \hline \end{array}$$

8

$$\begin{array}{r} 9\ 8\ 8 \\ +\ 9\ 5\ 3 \\ \hline \end{array}$$

9

$$\begin{array}{r} 1\ 1\ 8 \\ +\ 2\ 4\ 8 \\ \hline \end{array}$$

10

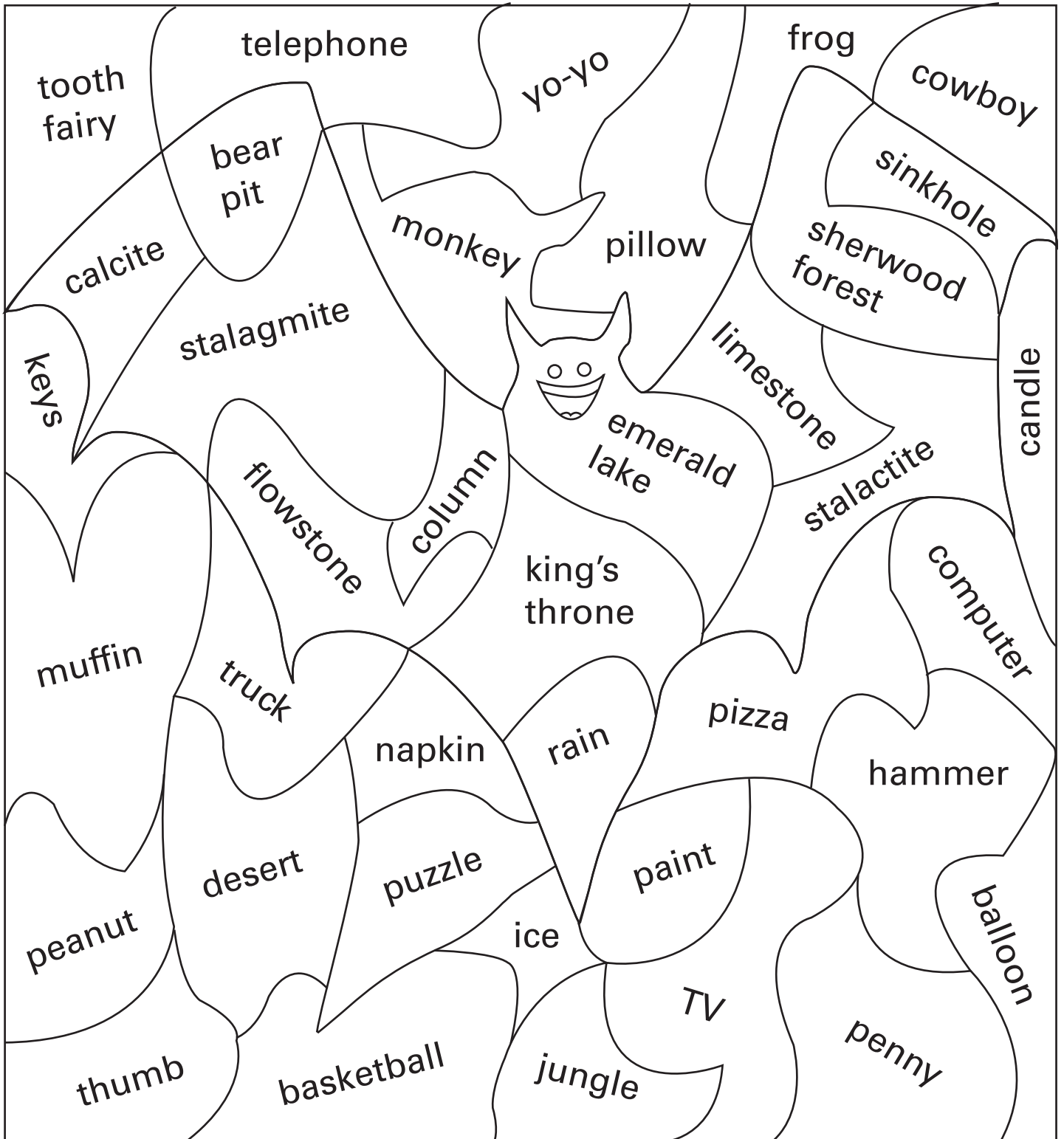
$$\begin{array}{r} 3\ 1\ 0 \\ +\ 6\ 3\ 1 \\ \hline \end{array}$$

11

$$\begin{array}{r} 5\ 8\ 5 \\ +\ 5\ 5\ 7 \\ \hline \end{array}$$

Name _____

Shade in all of the areas that contain words that relate to Natural Bridge Caverns. If you have correctly shaded in the right areas, you will see a former inhabitant of Natural Bridge Caverns.



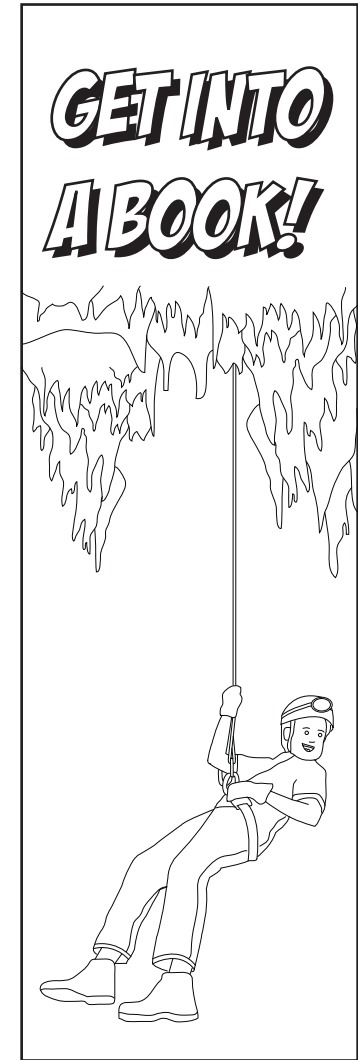
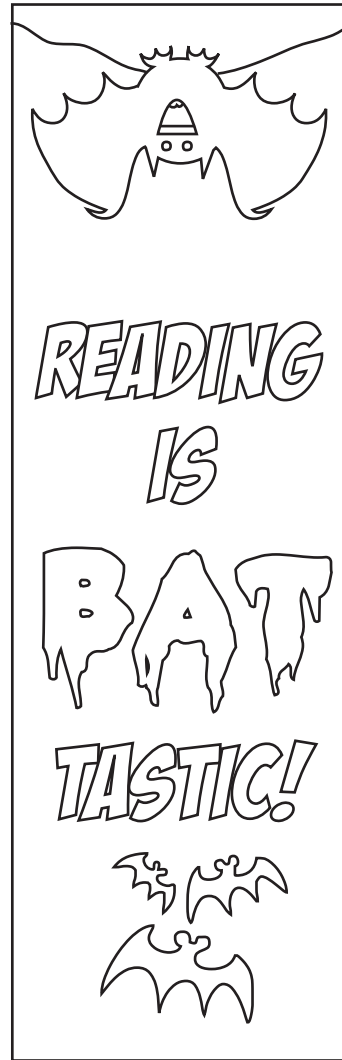
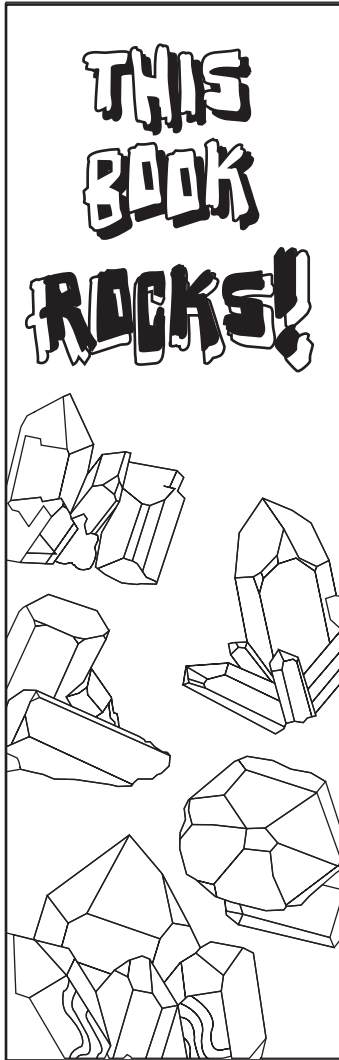


MEXICAN FREETAIL

BATS

MAKE YOUR OWN BOOKMARKS

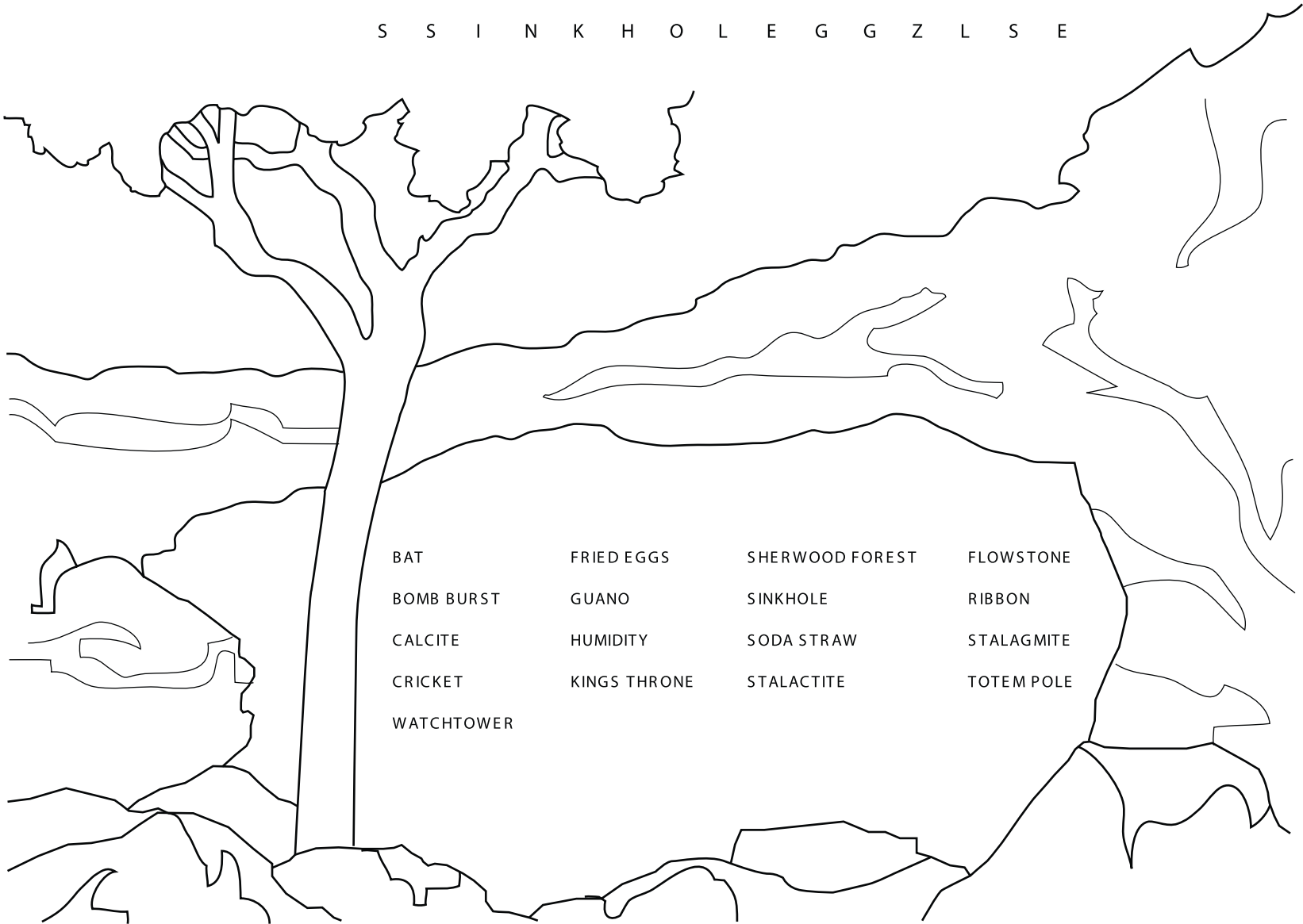
Print this page on index stock. Color the pictures then cut each bookmark along the border. Happy Reading!



Name: _____

WORD SEARCH

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



BAT

FRIED EGGS

SHERWOOD FOREST

FLOWSTONE

BOMB BURST

GUANO

SINKHOLE

RIBBON

CALCITE

HUMIDITY

SODA STRAW

STALAGMITE

CRICKET

KINGS THRONE

STALACTITE

TOTEM POLE

WATCHTOWER

Texas state Insect
Monarch Butterfly



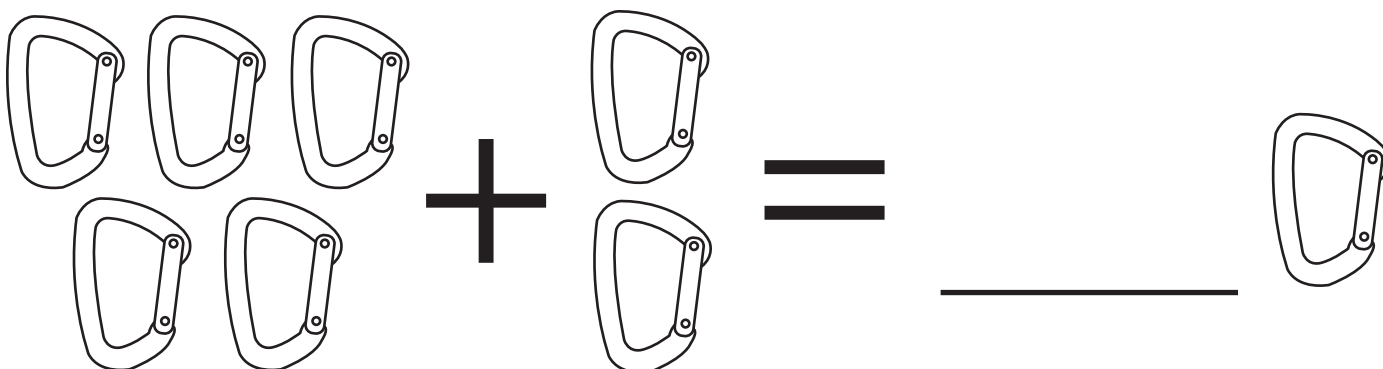
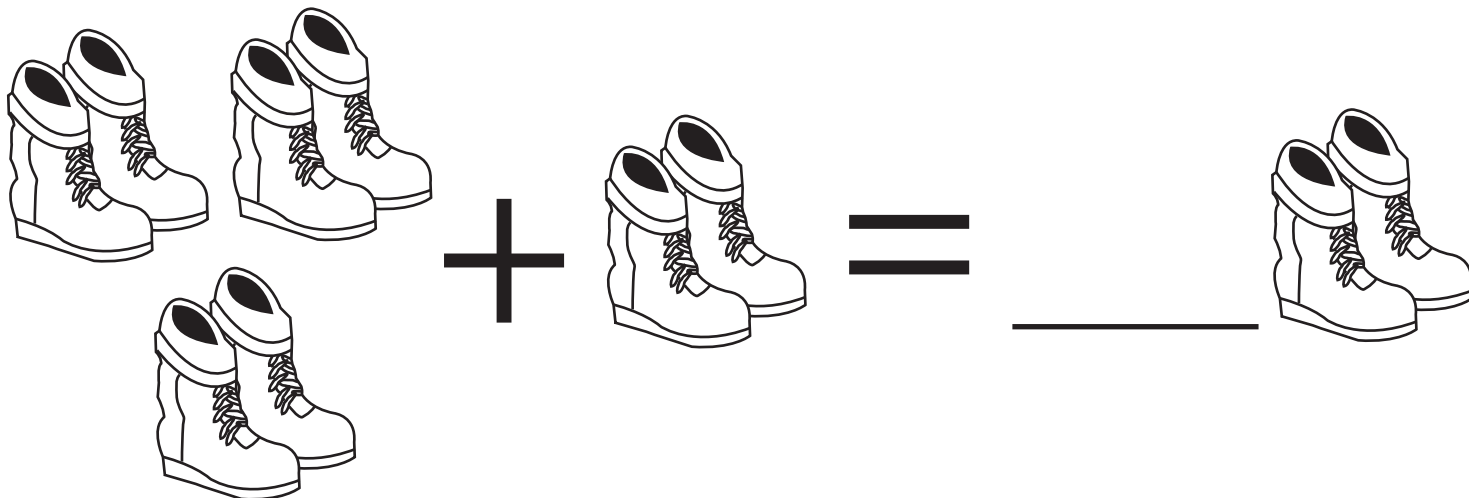
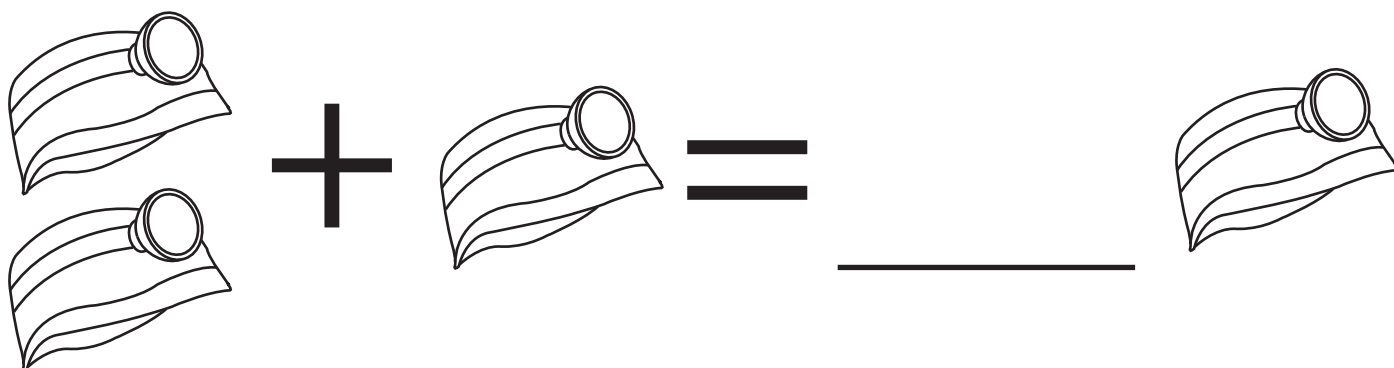
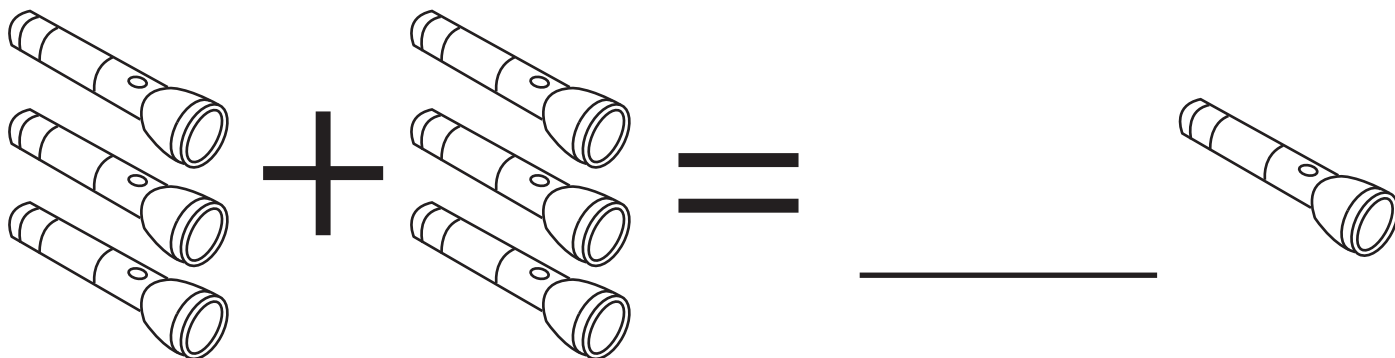
Texas state Flower
Bluebonnet

CAVE EXPLORER

NAME: _____

ADDITION

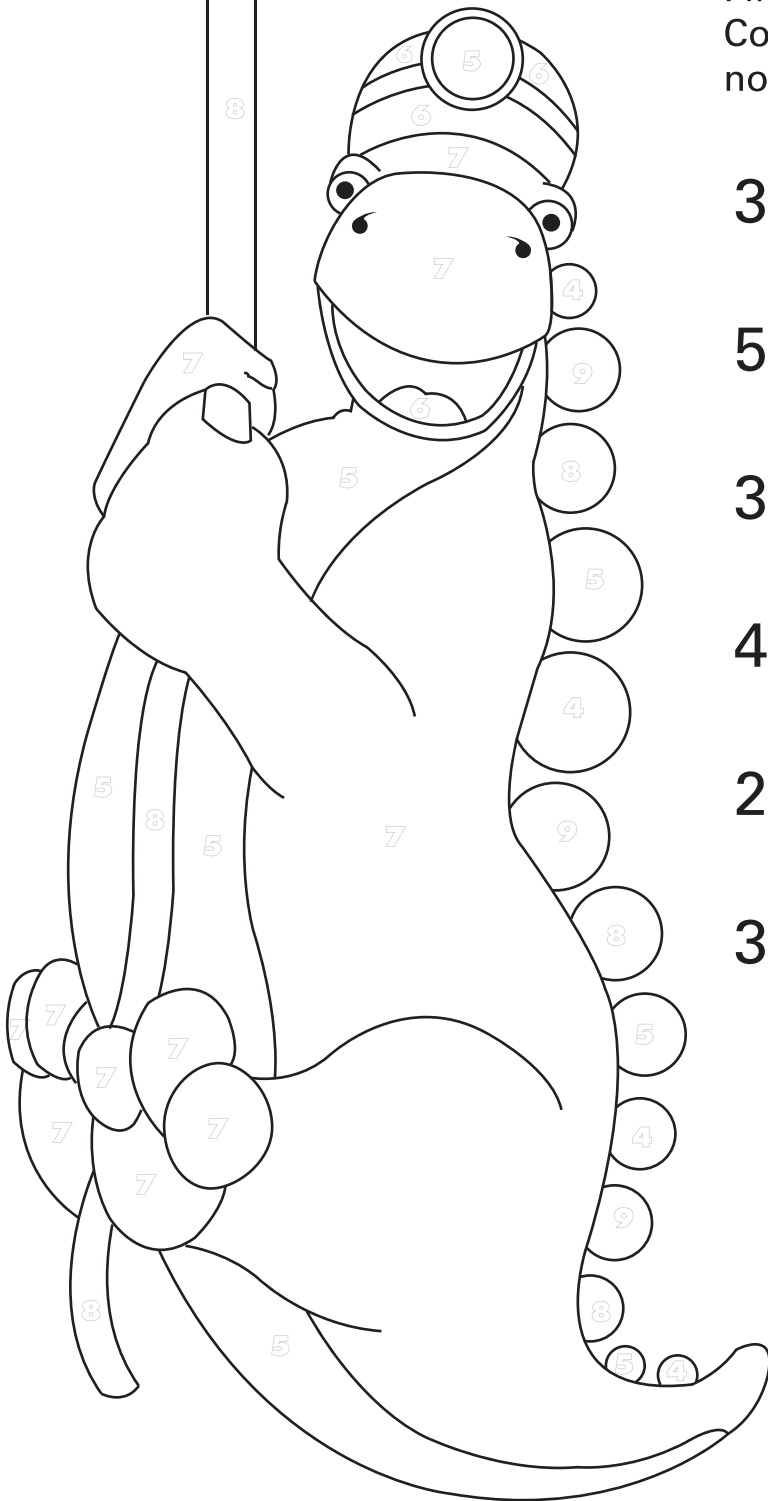
Add the caving gear and write the correct number on the line.



ROCK CLIMB



COLOR GRENDEL



Find the sum.

Color Grendel using the colors
noted next to your answers.

$$3 + 3 = \underline{\hspace{2cm}} \text{ **RED**}$$

$$5 + 4 = \underline{\hspace{2cm}} \text{ **BLUE**}$$

$$3 + 4 = \underline{\hspace{2cm}} \text{ **ORANGE**}$$

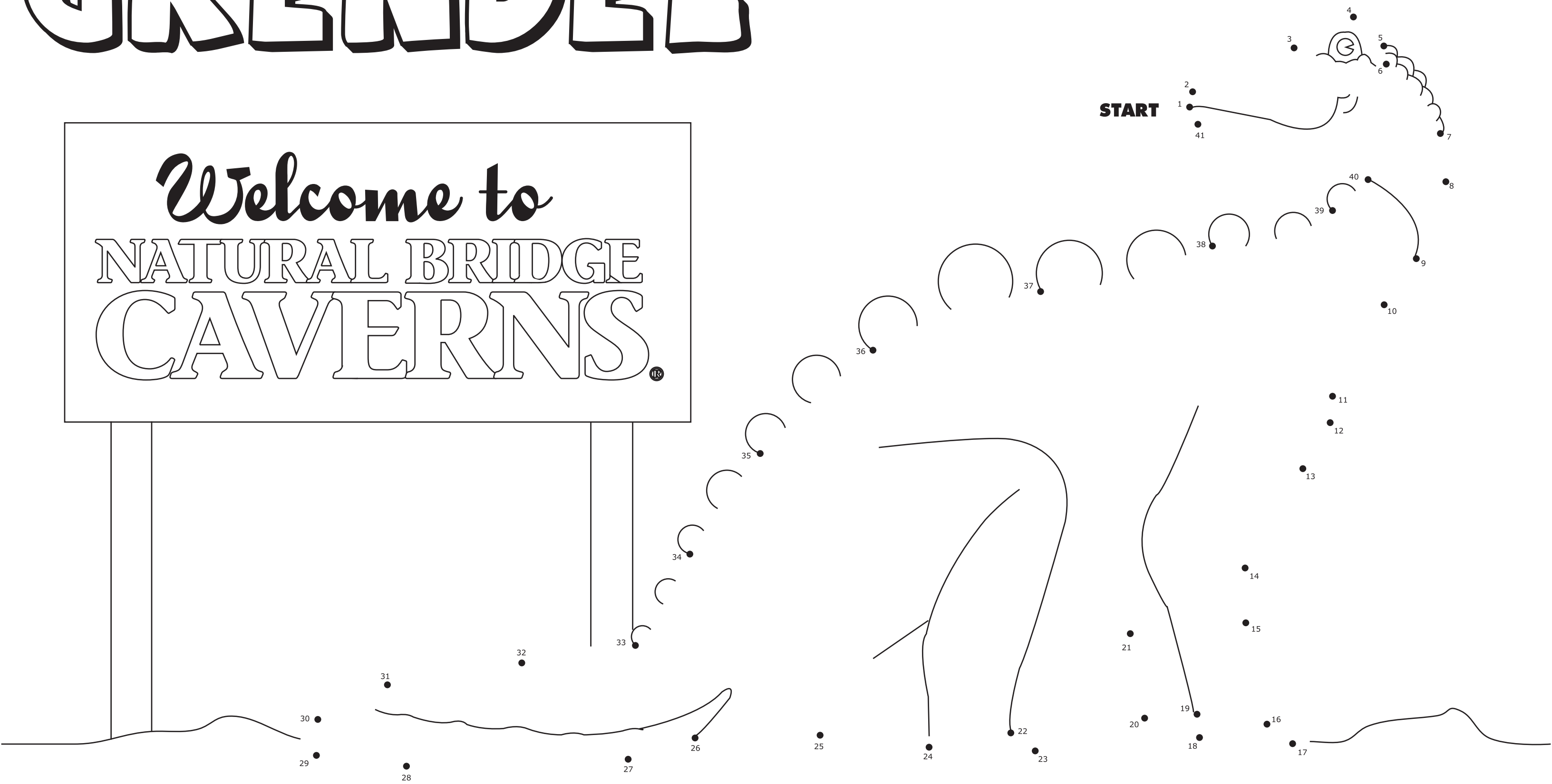
$$4 + 1 = \underline{\hspace{2cm}} \text{ **YELLOW**}$$

$$2 + 2 = \underline{\hspace{2cm}} \text{ **GREEN**}$$

$$3 + 5 = \underline{\hspace{2cm}} \text{ **PURPLE**}$$

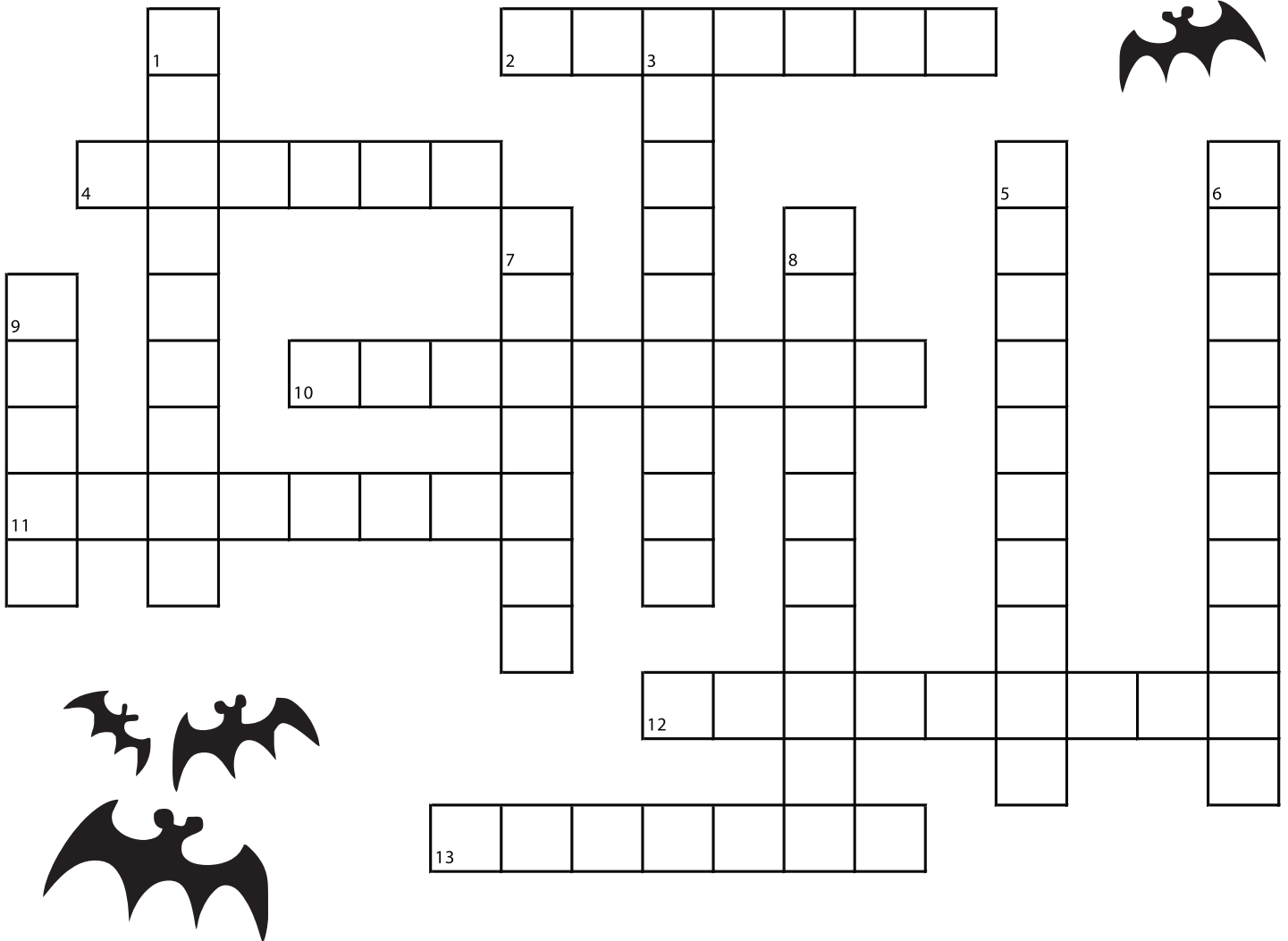
CONNECT THE DOTS & COLOR

GRENDEL



NAME: _____

CAVERN CROSSWORD



ACROSS

- 2 Mineral which forms all of the formations in Natural Bridge Caverns. A crystalline form of calcium carbonate.
- 4 A speleothem created by the joining of a stalactite and a stalagmite into one, continuous formation touching both the floor and the ceiling.
- 10 Hollow, tubular stalactites.
- 11 A depression in a land surface communicating with a subterranean passage, generally occurring in limestone regions and formed by solution or by collapse of a cavern roof.
- 12 A type of speleothem formed by dripping water.
- 13 An underground water resource.

DOWN

- 1 A type of speleothem formed by flowing or running water.
- 3 A sedimentary rock typically formed at the bottom of oceans and lakes. The primary makeup is calcium carbonate, with varying amounts of other minerals.
- 5 A dripstone deposit found on the ceiling of a cavern.
- 6 A general term for cavern formations.
- 7 A curtain-like speleothem which hangs from inclined cave ceilings or walls.
- 8 Conical floor deposits built up by water dripping from overhead.
- 9 A type of landscape created by solution and dominated by caves, sinkholes, and predominately underground drainage.

NORTH CAVERN TOUR

DOUBLE PUZZLE

NAME: _____

RABE TIP

8			5			10	

NARTULA DEGRIB

1											13	

ONIHLESK

CATSEL FO THE HETWI GINAST

14	2	19															12		

LAHL FO THE UTNOIMAN NKIG

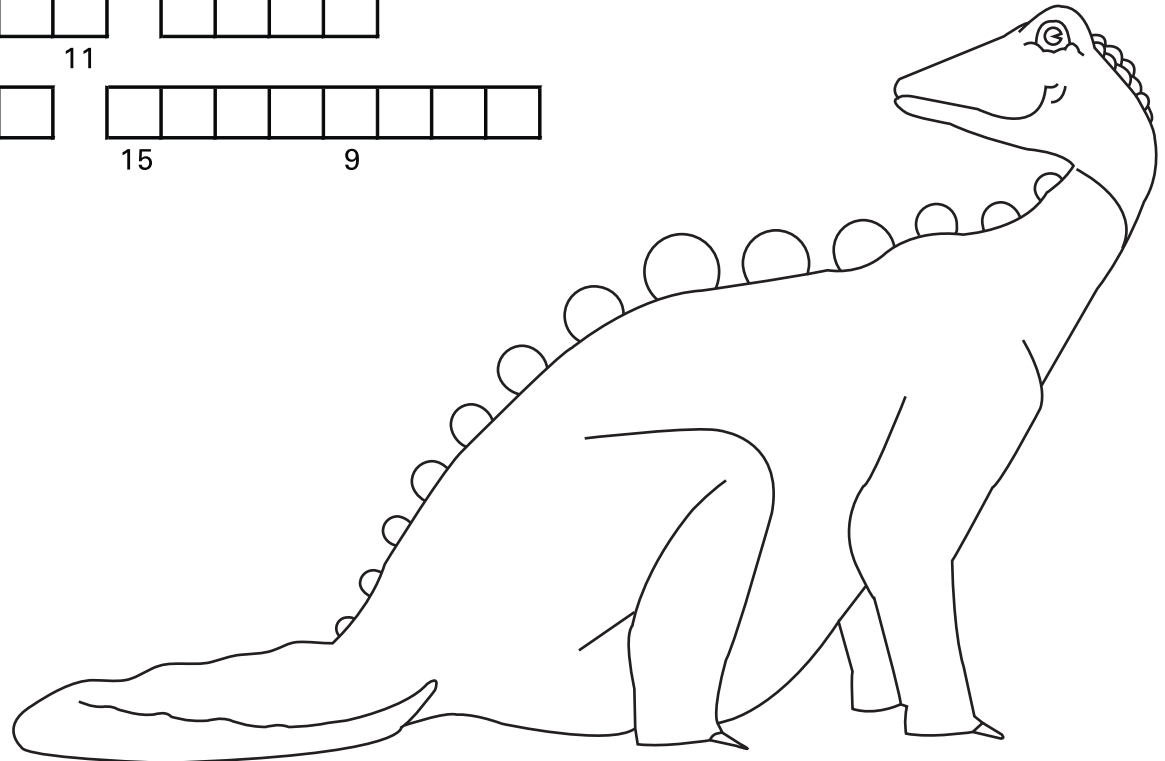
MEERADL LAEK

TOLSUP RMTOANEO

1	2	3	4	5	6	7	

8	9	10	11	12	13	

		V					
14	15		16	17	18	19	



EMERALD LAKE



DEPTH 135'

NAME: _____

CAVE EXPLORER

"Who am I?"

Read the description of each item. Try and guess who each one is:
Circle every third letter in the box to check your answer.



I am an insect who crawls on the ground,
I jump all over and make lots of sound.

I am a _____

W	E	C	U	H	R
Y	U	I	P	M	C
Q	I	K	O	X	E
Z	B	T	M	H	L

I am a mammal who flies through the air. I sleep
upside-down and I might give you a scare!

I am a _____

W	R	B	Y	L	A
O	C	T	V	M	N

I am used for protection and worn on the head.
Without me, you might end up in a hospital bed.

I am a _____

Q	R	H	S	T	E
U	V	L	W	Z	M
X	C	E	B	M	T

I am a tool that makes dark as light as day.
I help explorers see so they don't lose their way.

I am a _____

Q	T	F	W	P	L	Q
A	A	U	Q	S	W	D
H	G	K	L	H	I	I
S	N	G	U	P	H	B
D	T	P	I	V	G	L

I am worn on your feet so you don't lose traction.
Explorers never forget me when they go into action.

I am _____

Q	F	B	H	K	O
L	S	O	D	M	T
U	I	S	L	G	M

MY FAVORITE THINGS ABOUT

Name: _____

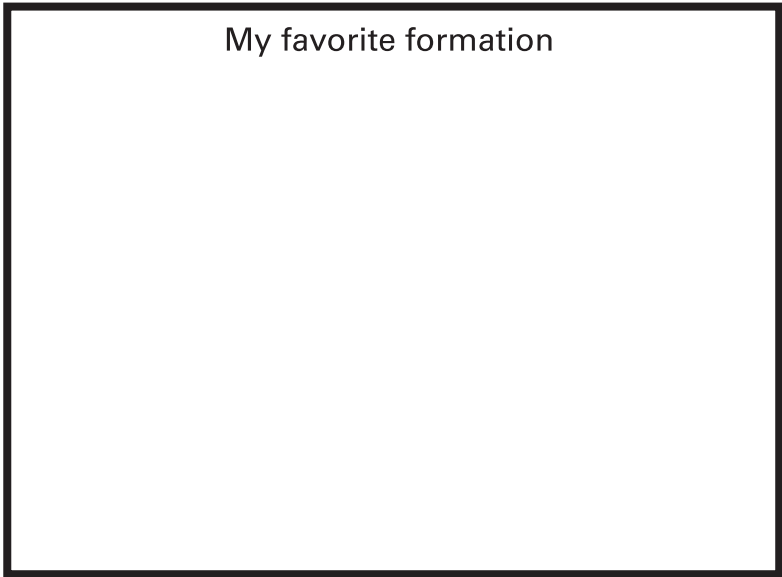
NATURAL BRIDGE CAVERNS

Draw a picture of your favorite things about Natural Bridge Caverns, then write a sentence or two explaining your choice.

My favorite room



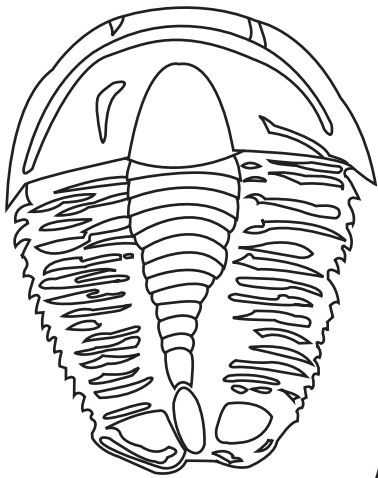
My favorite formation



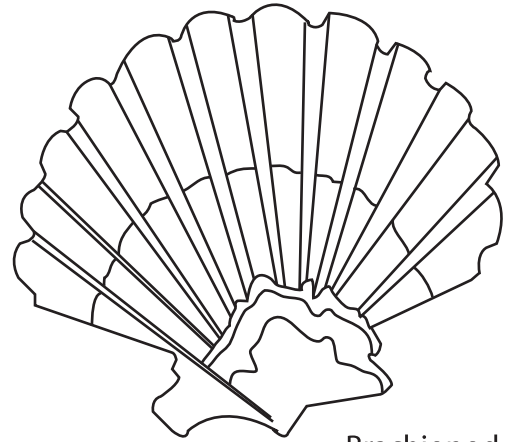
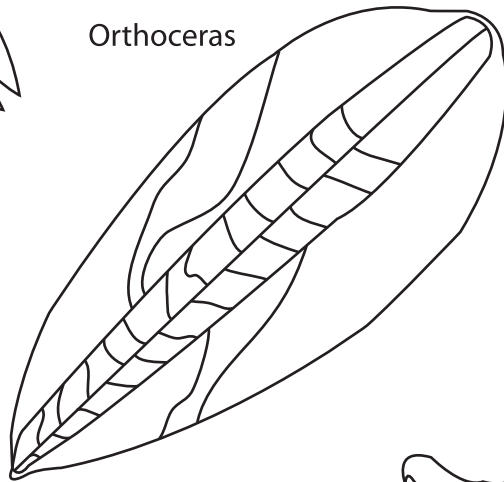
My favorite part of my field trip



Trilobite

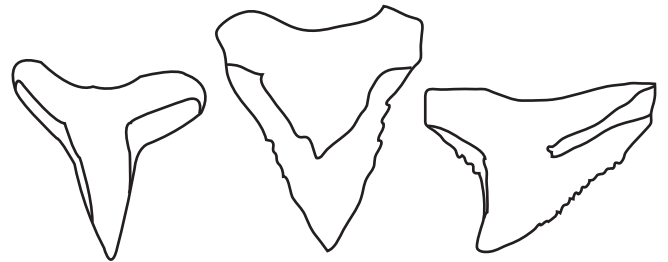
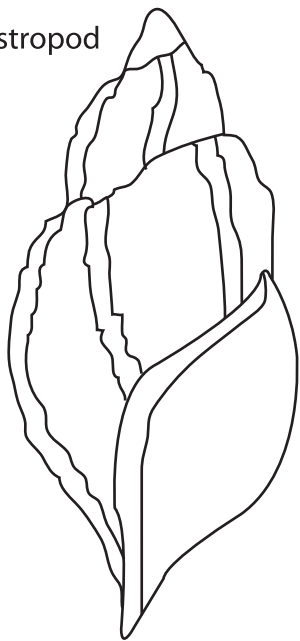


Orthoceras

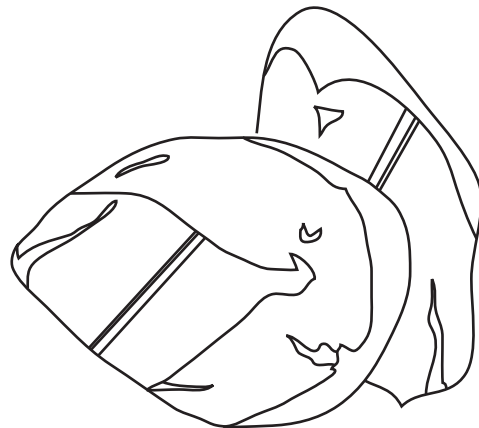


Brachiopod

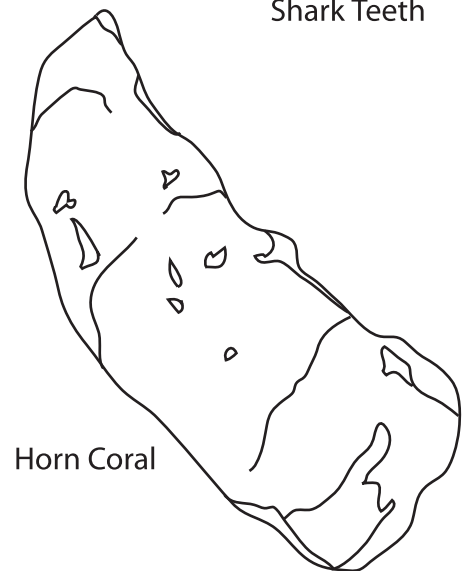
Gastropod



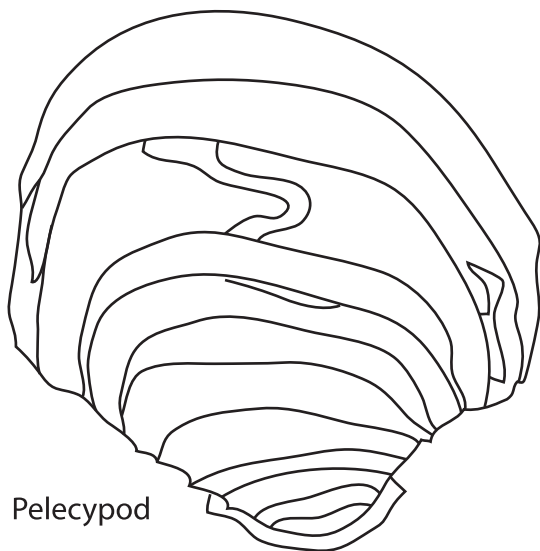
Shark Teeth



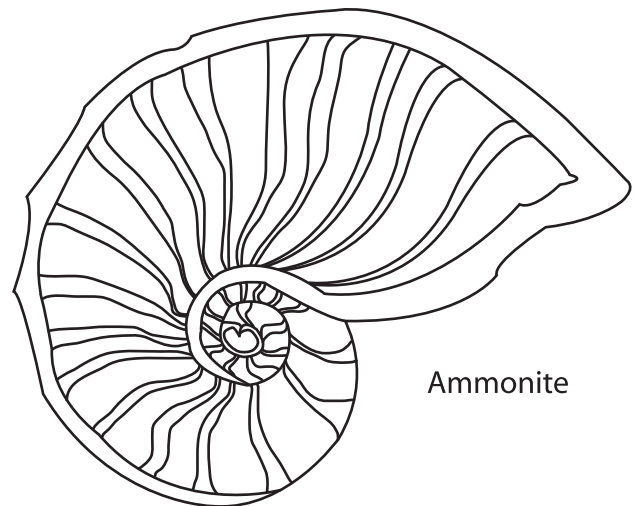
Amber



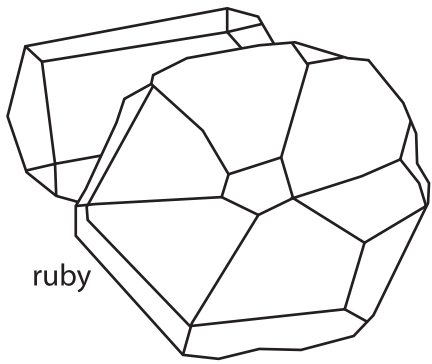
Horn Coral



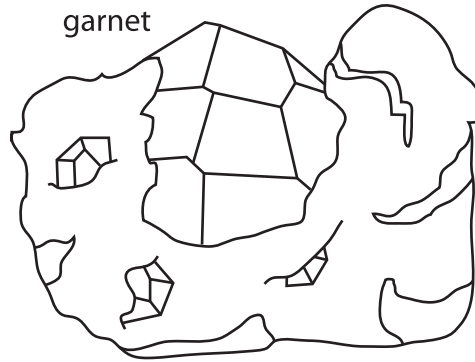
Pelecypod



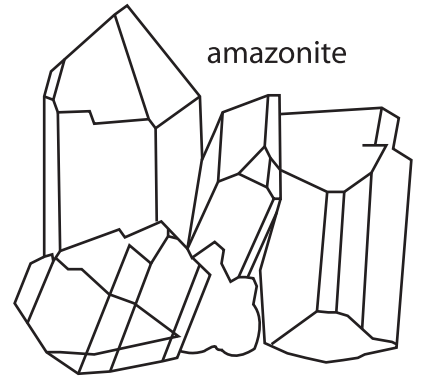
Ammonite



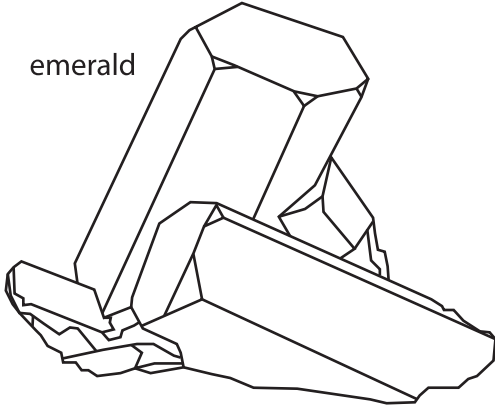
ruby



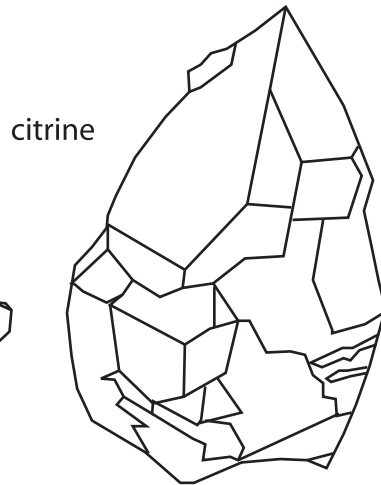
garnet



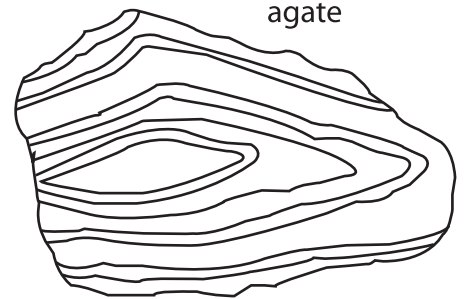
amazonite



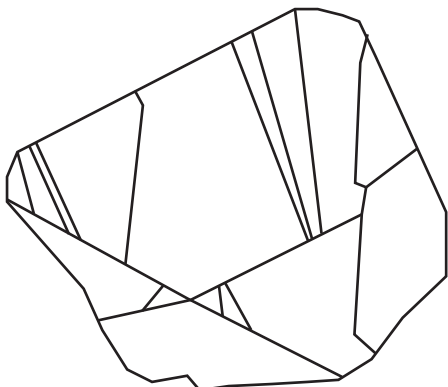
emerald



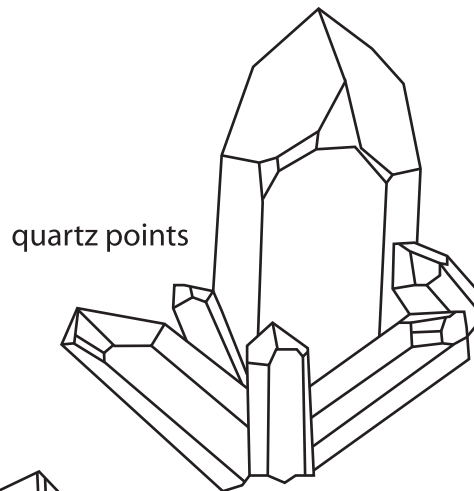
citrine



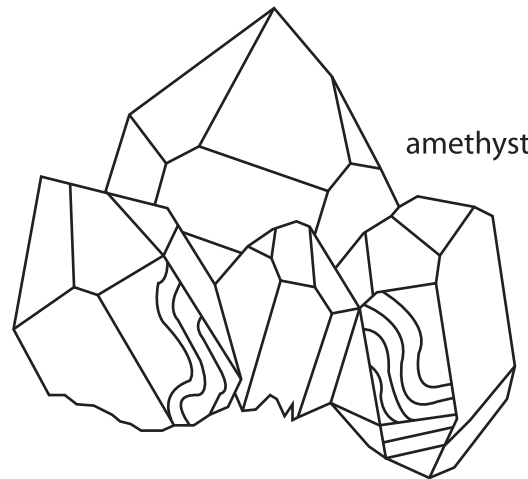
agate



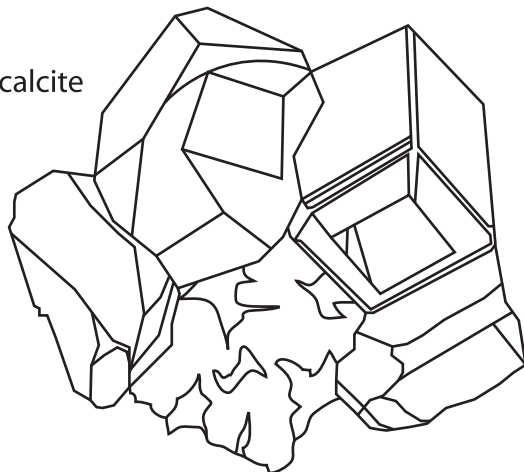
fluorite



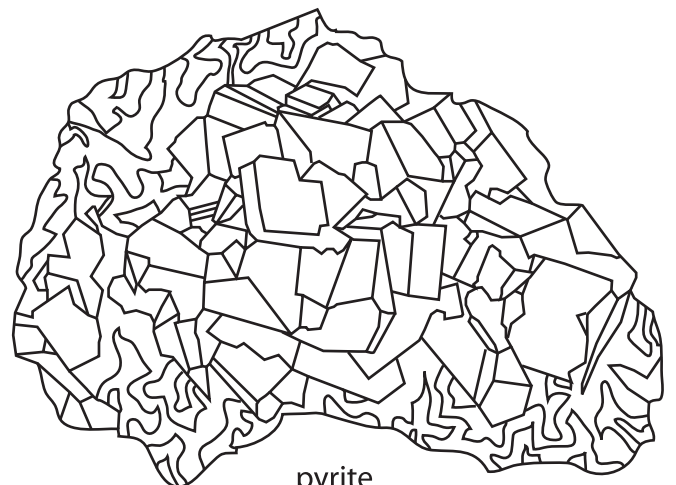
quartz points



amethyst

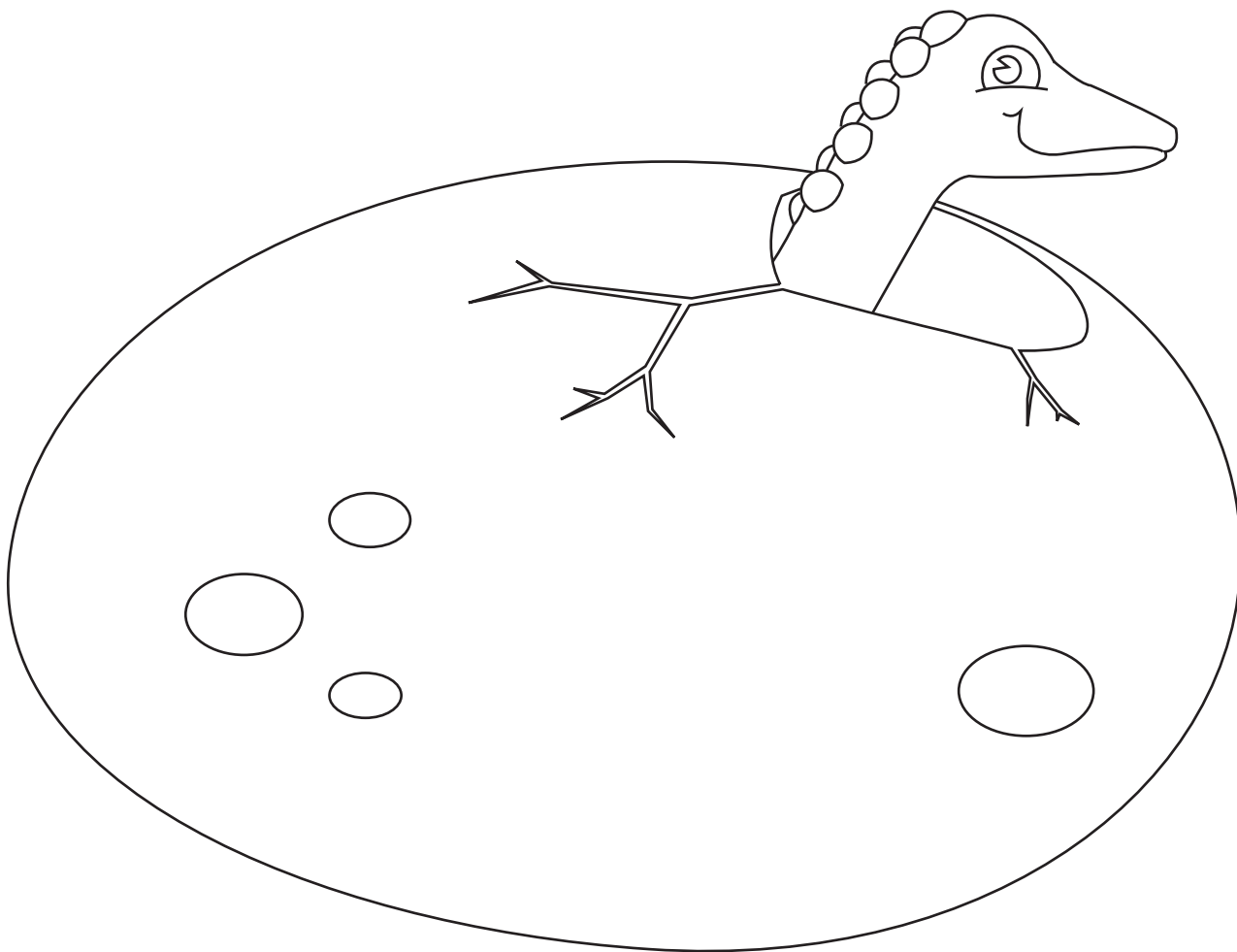
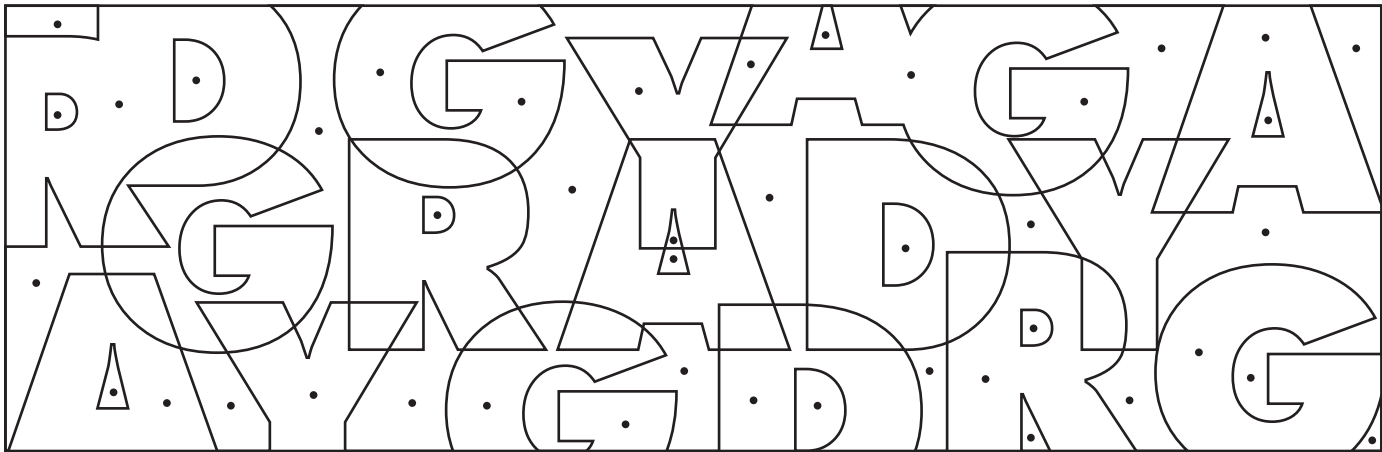


calcite

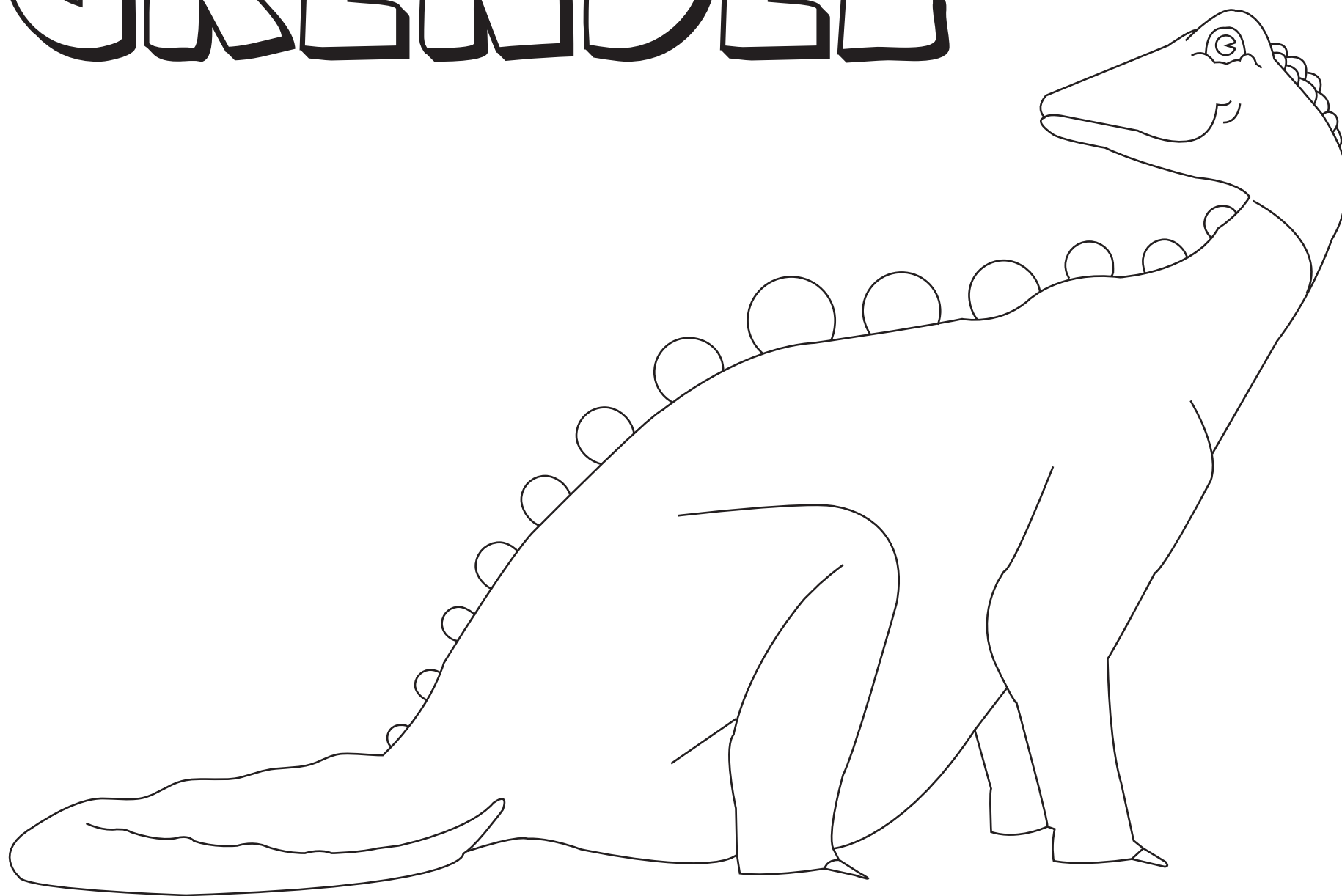


pyrite

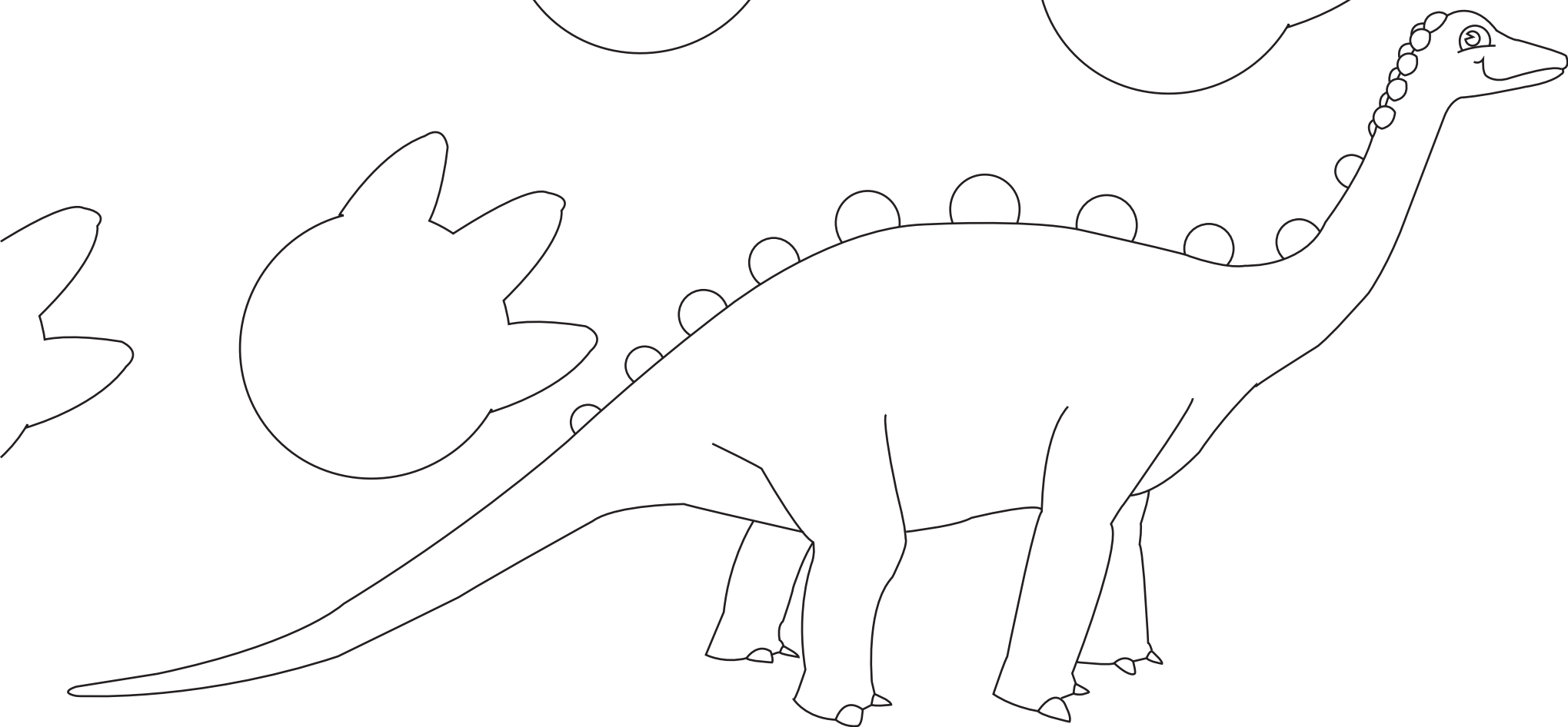
Color in all the shapes with a dot inside to find out the name of Grendel's youngest child.



GRENDEL



GRETCHEN



Name: _____

HIDDEN WORD PUZZLE

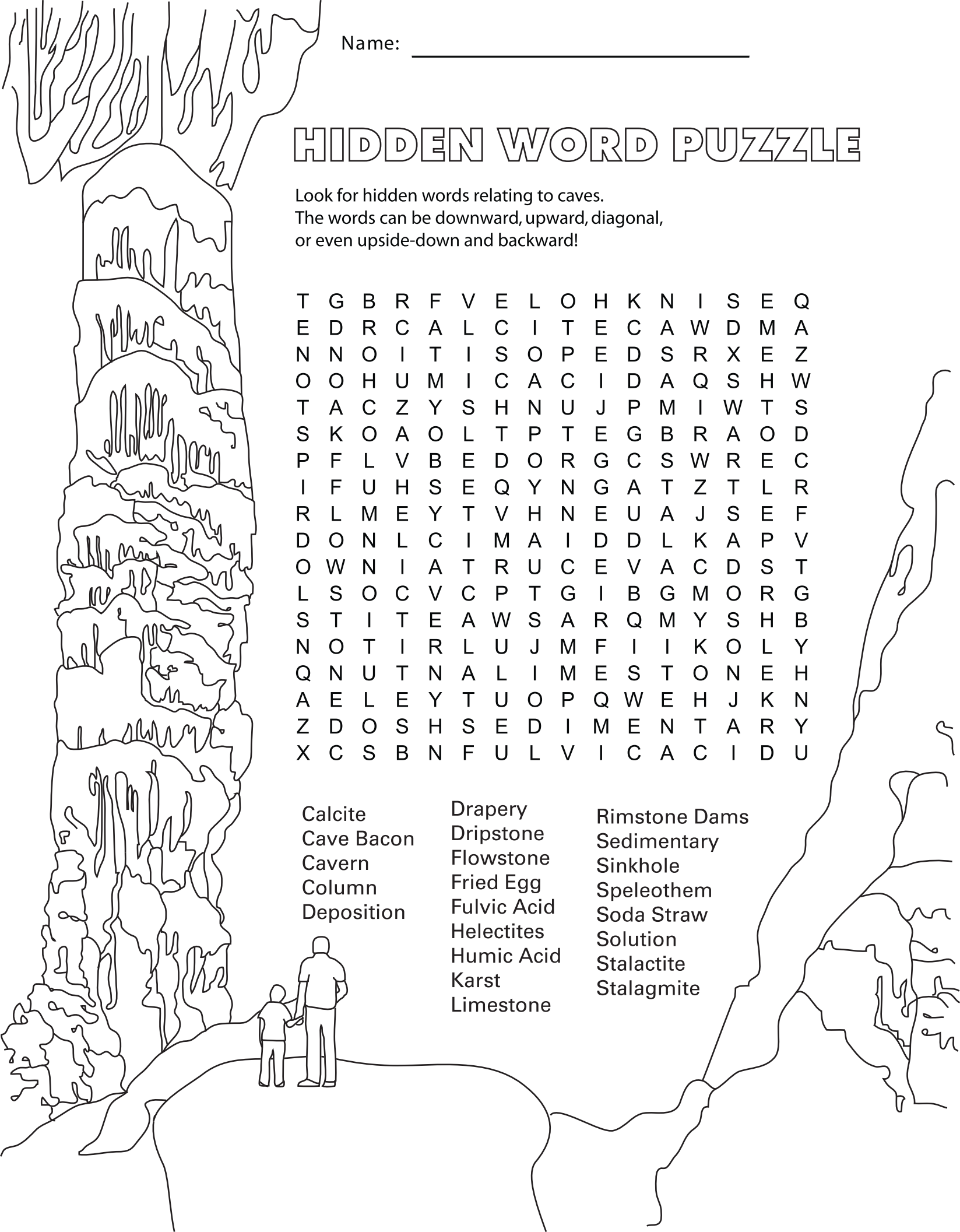
Look for hidden words relating to caves.
The words can be downward, upward, diagonal,
or even upside-down and backward!

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

Calcite
Cave Bacon
Cavern
Column
Deposition

Drapery
Dripstone
Flowstone
Fried Egg
Fulvic Acid
Helectites
Humic Acid
Karst
Limestone

Rimstone Dams
Sedimentary
Sinkhole
Speleothem
Soda Straw
Solution
Stalactite
Stalagmite



NAME: _____

INTERNET ACTIVITY

Go to the Texas Speleological Survey website and find the answers:

<http://www.utexas.edu/depts/tnhc/.www/tss/index.html>



What is Karst?

What kind of rocks do Karst regions require?

In what kind of rock can most (not all) of Texas caves be found?

Name 3 geologic ages during which the rocks in which Texas caves can be found were formed.

What is a major threat to caves?

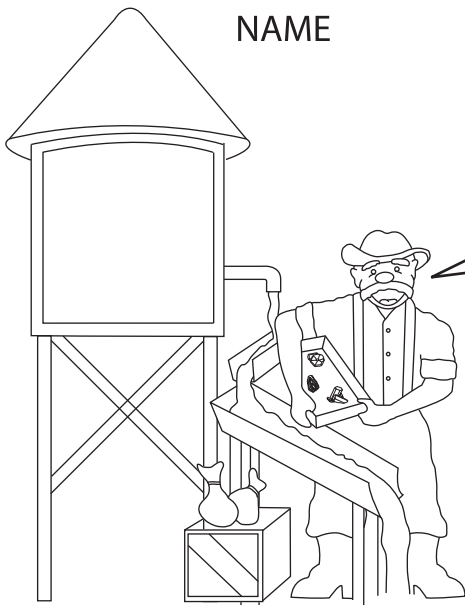
How long is Honey Creek Cave? Is it the longest known in Texas (so far)?

What is the largest (non-public) Texas cave in terms of volume, and what is its volume?

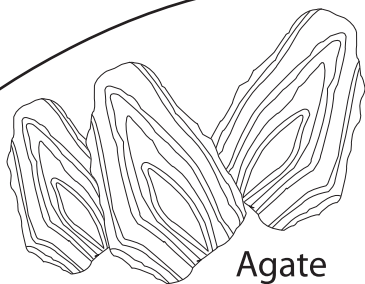
Name 5 types of animals described as “troglobites” on the TSS website.

What are some of the threats to the survival of these animals?

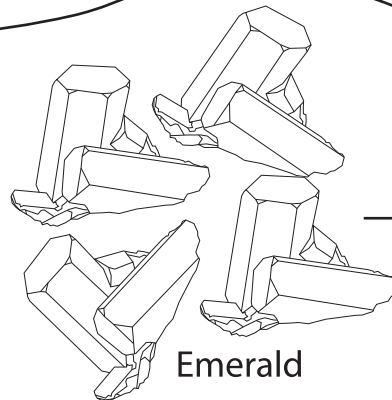
NAME _____



How many of each gemstone do you see in the Mining Rough Bag? Write the number of items on the line below and use the gemstone descriptions to color each type of gemstone.



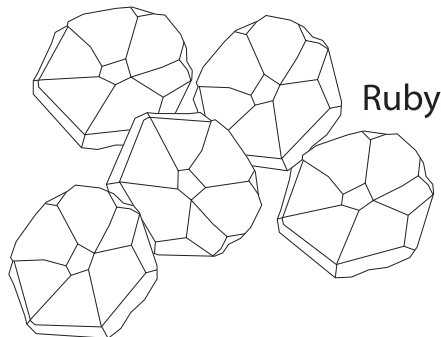
Agate



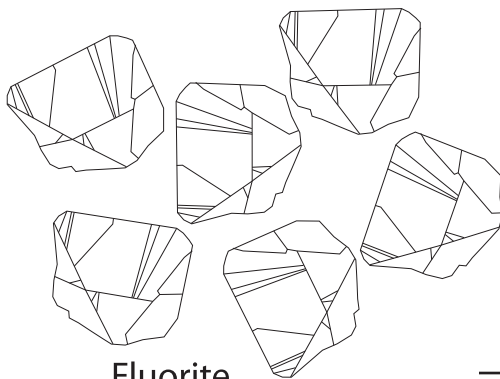
Emerald



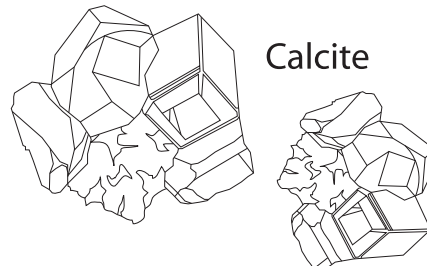
Pyrite



Ruby



Fluorite



Calcite

Agate - Found in almost any color including BLUE, formed from quartz

Calcite - A cave forming material found in lighter colors like ORANGE

Fluorite - Comes in many colors including PURPLE and Clear

Emerald - From Light to Dark GREEN

Pyrite - "Fools GOLD" shimmers like the real thing

Ruby - precious stone found in shades of RED

NAME: _____

YOU KNOW THE ANSWER

WRITE THE QUESTION

Create a question for each of the following answers.

1

?

Answer: Stalactite

2

?

Answer: Stalagmite

3

?

Answer: Flowstone

4

?

Answer: Dripstone

5

?

Answer: The Watchtower

6

?

Answer: The Bear Pit

7

?

Answer: Guano

8

?

Answer: 70 Degress with 99% Humidity

9

?

Answer:Glen Rose Aquifer

10

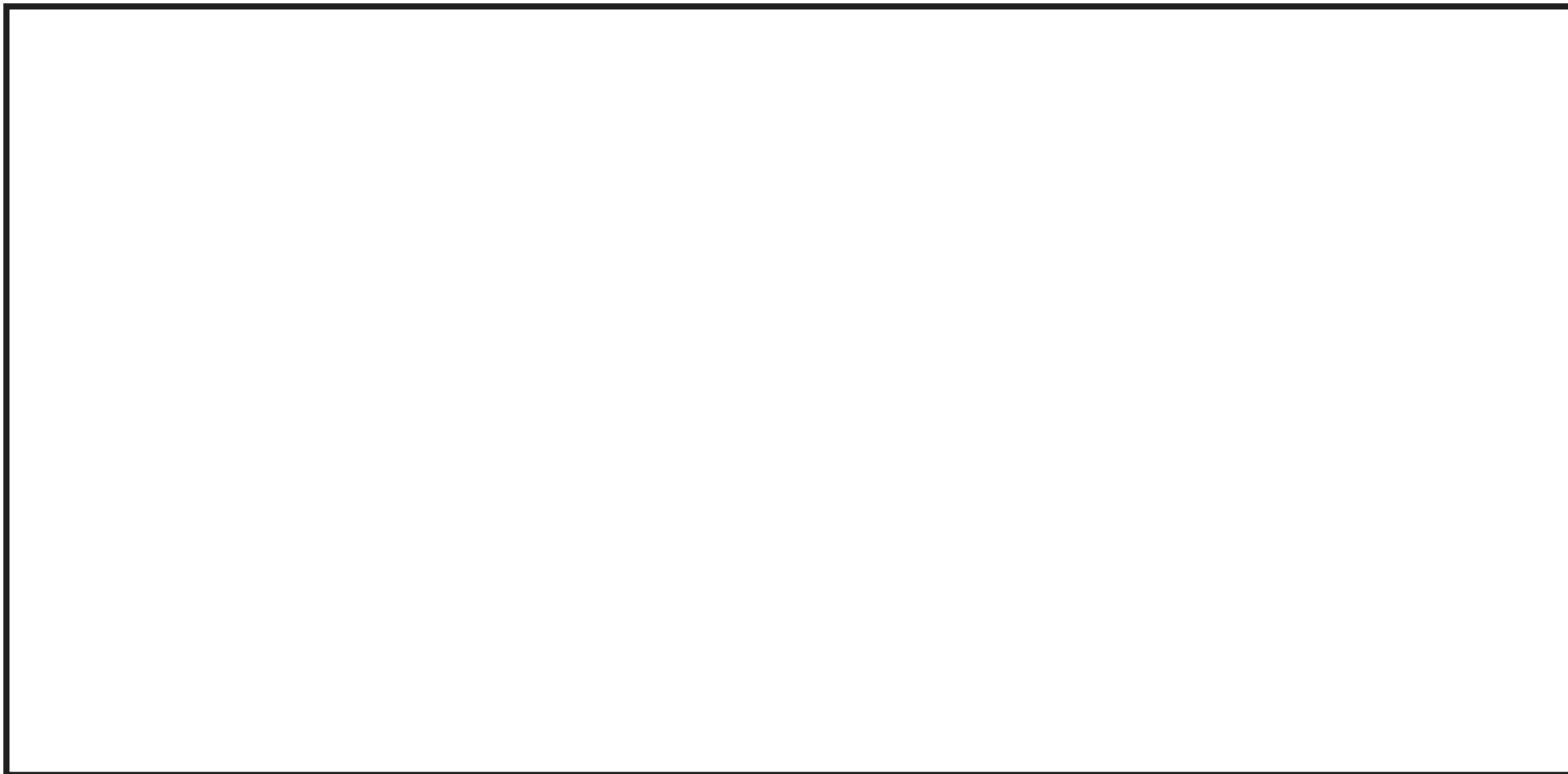
?

Answer:Sinkhole

MAKE A CAVERN!

Name: _____

Draw your own cavern room in the box below.

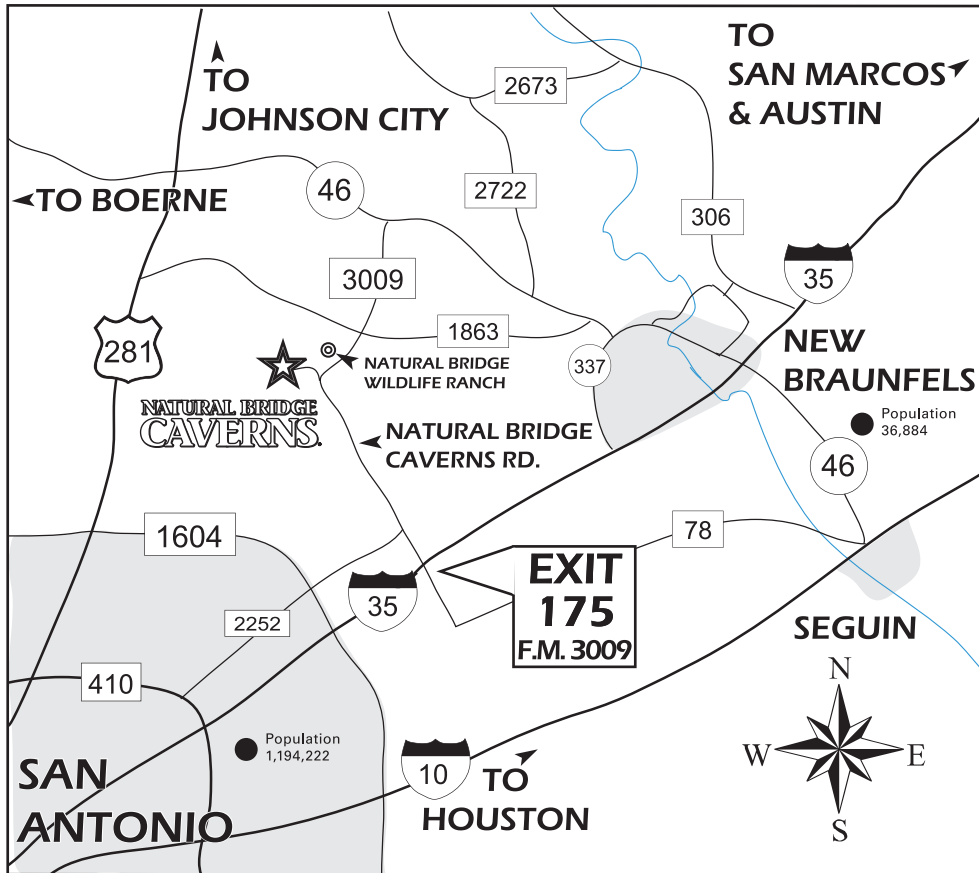


Write the names of all the things you put in your cavern room.

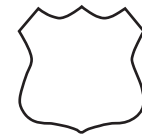
_____	_____	_____
_____	_____	_____
_____	_____	_____

NAME: _____

NATURAL BRIDGE CAVERNS MAP ACTIVITY



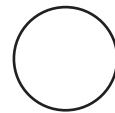
Legend



U.S. Hwy



Interstate



State Hwy



Farm - Market



Population

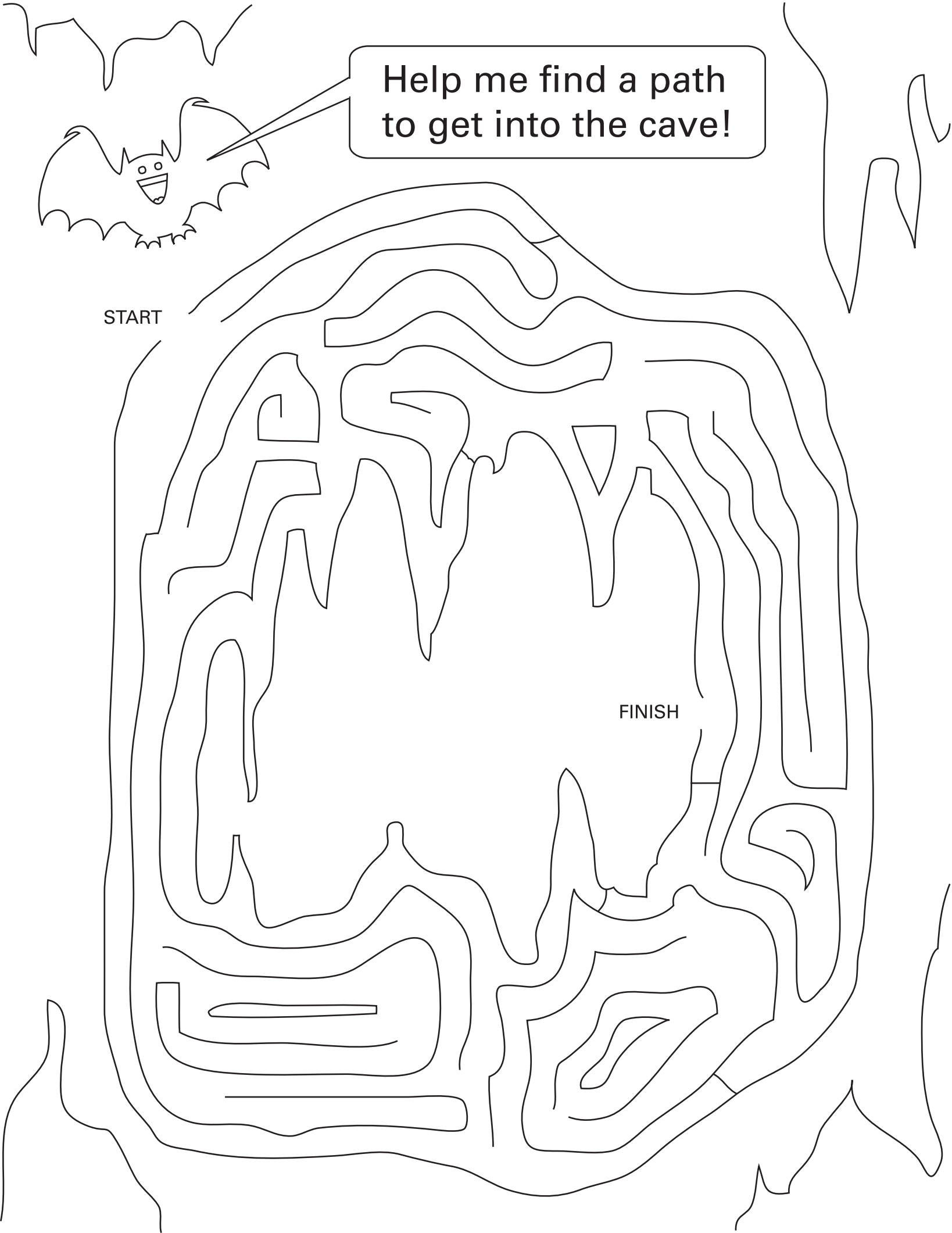
Use the map and legend on this page to answer the following:

1. If you are traveling north on Interstate 35, what exit will you take to get to Natural Bridge Caverns?
2. If you are traveling north on U.S. Hwy 281, which is the first road you could take to get to F.M. 3009?
 - a. Which direction would you turn off of U.S. Hwy 281?
 - b. Which state Hwy could you take to get to F.M. 3009 if you were going north on U.S. Hwy 281?
3. What is the population of New Braunfels, TX?
4. What is the population of San Antonio, TX?
5. Give directions for the quickest route from New Braunfels to Natural Bridge Caverns.
6. Is Boerne east or west of New Braunfels ?
7. What is the name of the state Hwy that runs from Seguin to New Braunfels?

Help me find a path
to get into the cave!

START

FINISH





Carefully cut helmet along outside with scissors.

Carefully cut a slit along dotted line.

Color each cave outfit.

Carefully cut along the outside of each outfit with scissors.

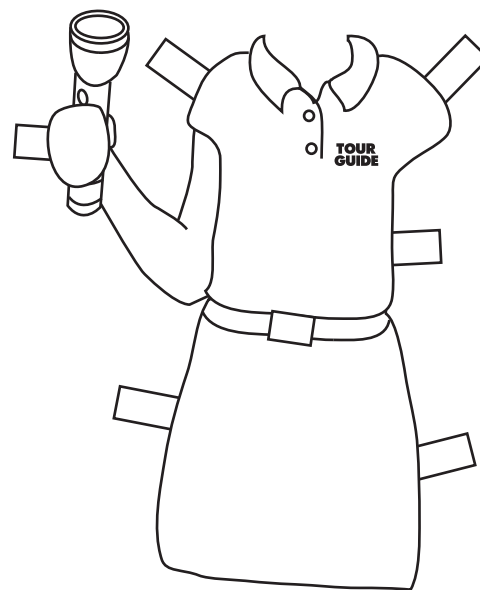
Fold back tabs around figure.

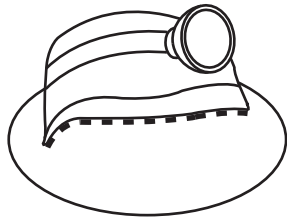
ADVENTURE TOUR GEAR

PAPER CUT-OUTS



TOUR GUIDE UNIFORM

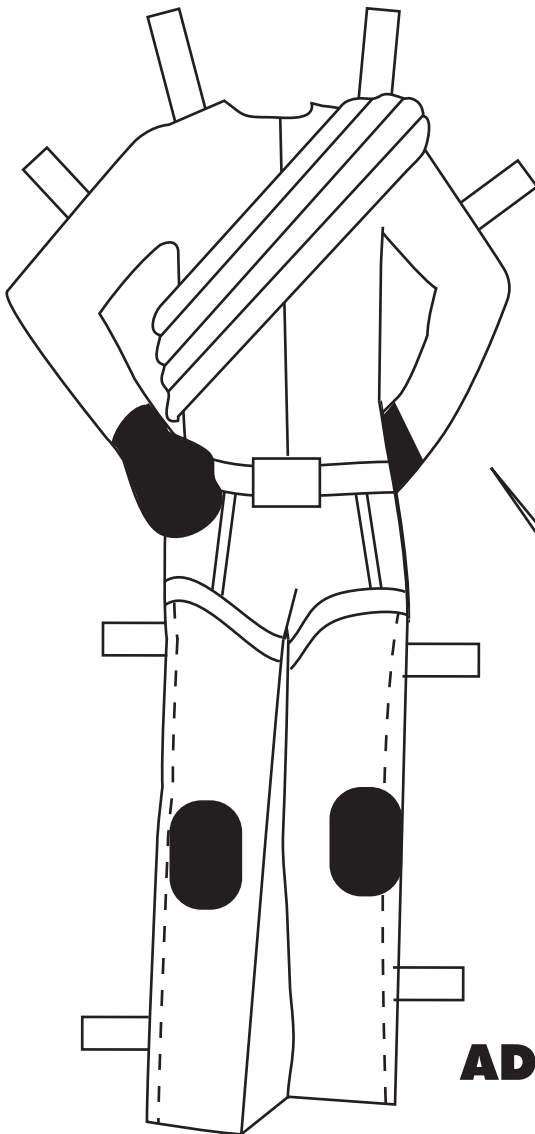




Carefully cut helmet along outside with scissors.

Carefully cut a slit along dotted line.

PAPER CUT-OUTS



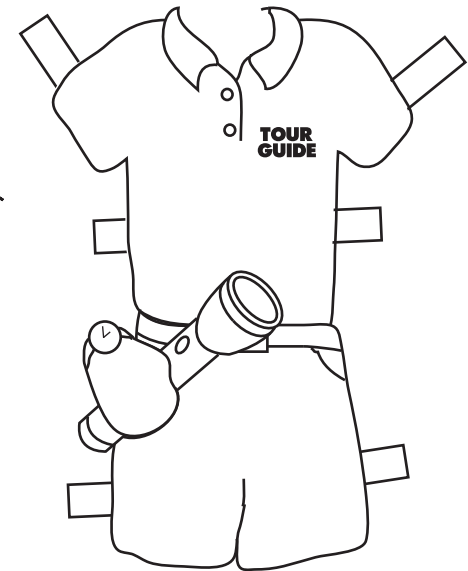
Color each cave outfit.

Carefully cut along the outside of each outfit with scissors.

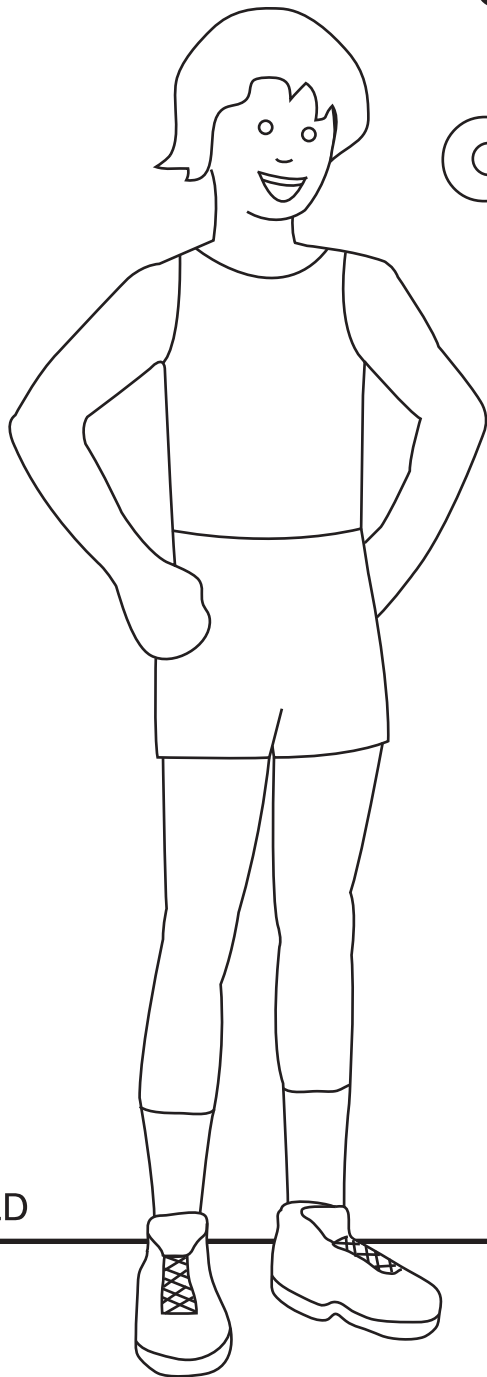
Fold back tabs around figure.

ADVENTURE TOUR GEAR

TOUR GUIDE UNIFORM



PAPER CUT-OUTS



Color each figure

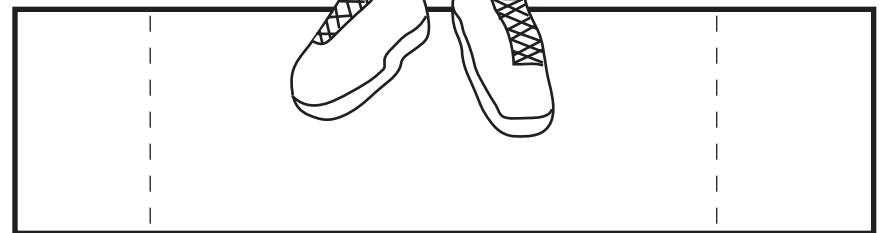
Carefully cut along the outside
of each figure with scissors.

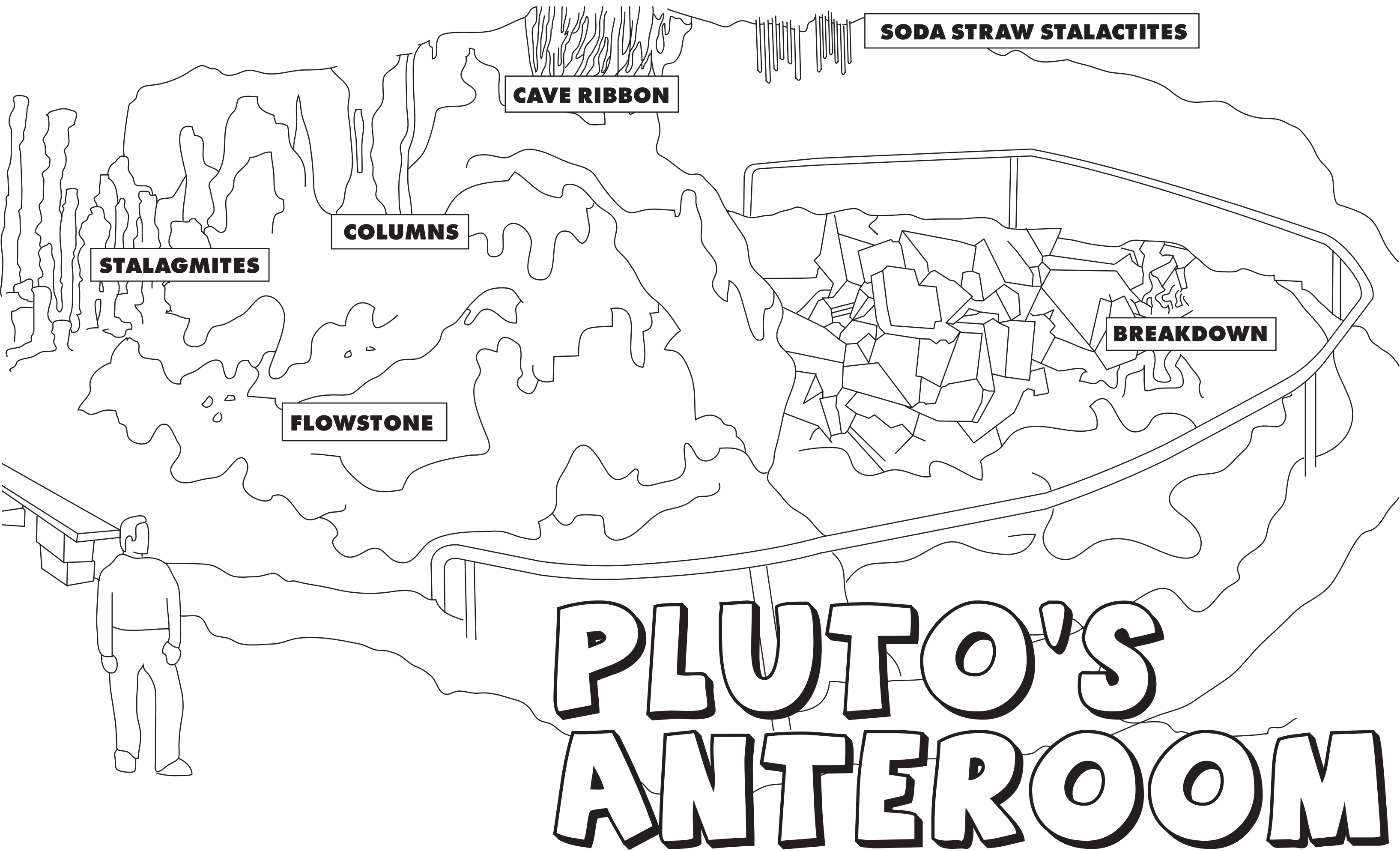
Fold back along dotted lines.

CUT



FOLD





SODA STRAW STALACTITES

CAVE RIBBON

COLUMNS

STALAGMITES

FLOWSTONE

BREAKDOWN

PLUTO'S ANTEROOM

NATURAL BRIDGE CAVERNS SCAVENGER HUNT



On your tour of Natural Bridge Caverns, your guide will talk about many different kinds of formations, and many of the formations were given names by the caverns discoverers.

What room were you in when your guide showed you:

A vertical joint

A breakout dome

A pillar or column

Flowstone

Cave Bacon

The Watchtower

The Mount of the Landlord

Grendel's Canyon

Fried Eggs

Discovery Crawlway

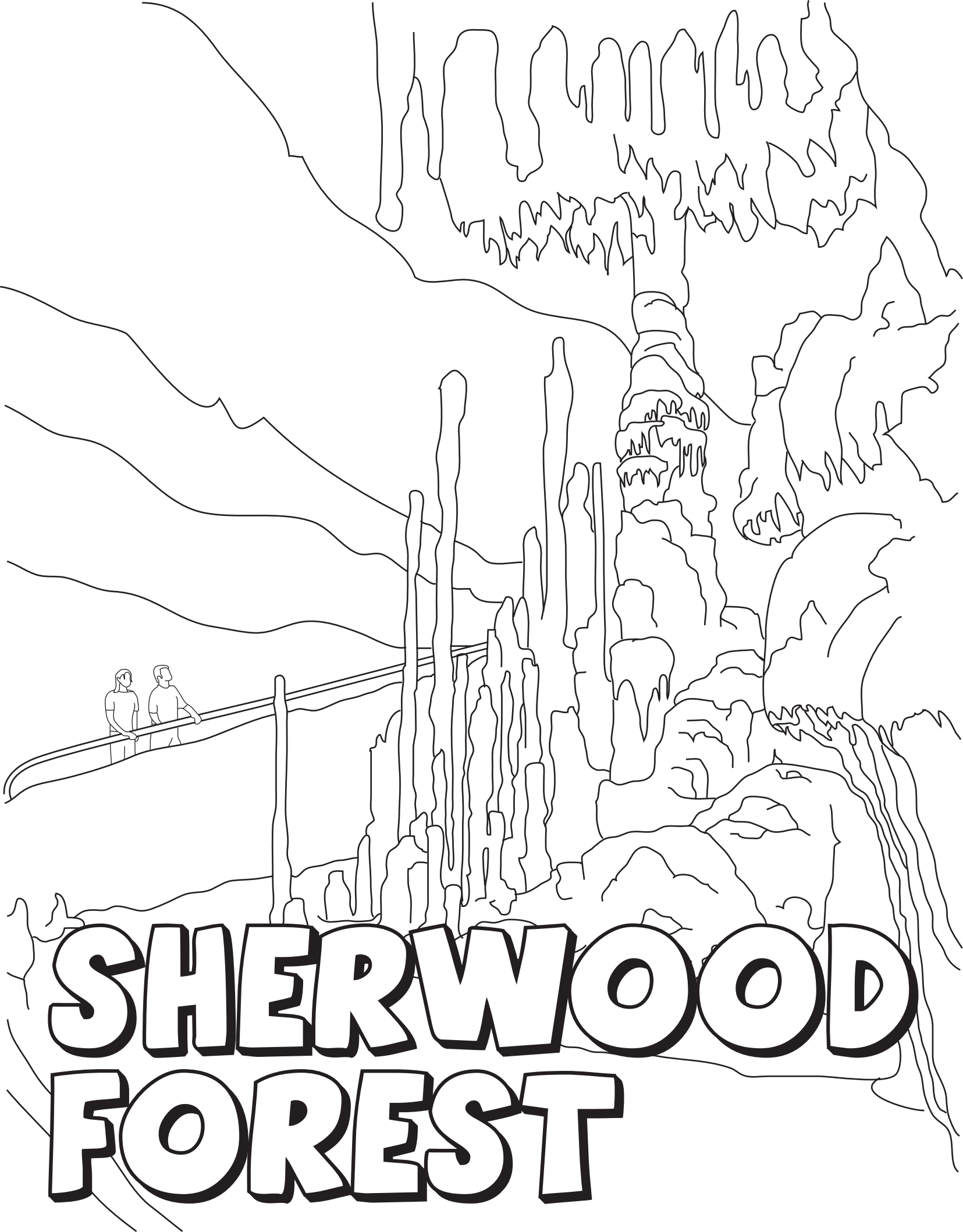
Soda Straws

The Valley of the Fallen Lords

A room as big as a football field

BONUS:

What area did you walk OVER when you crossed the bridge?



SHERWOOD FOREST

SPELUNKER



CAVE FACTS

**There are over 2.5 miles
of cave passageway at
Natural Bridge Caverns!!**

Name: _____

SUBTRACTION

$$\begin{array}{r} 311 \\ - 304 \\ \hline \end{array}$$

$$\begin{array}{r} 328 \\ - 146 \\ \hline \end{array}$$

$$\begin{array}{r} 248 \\ - 118 \\ \hline \end{array}$$

$$\begin{array}{r} 961 \\ - 309 \\ \hline \end{array}$$

$$\begin{array}{r} 654 \\ - 352 \\ \hline \end{array}$$

$$\begin{array}{r} 576 \\ - 241 \\ \hline \end{array}$$

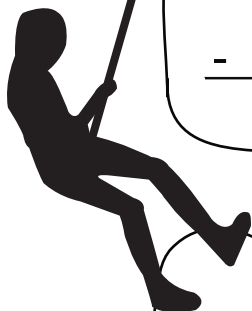
$$\begin{array}{r} 494 \\ - 328 \\ \hline \end{array}$$

$$\begin{array}{r} 997 \\ - 369 \\ \hline \end{array}$$

$$\begin{array}{r} 717 \\ - 640 \\ \hline \end{array}$$

$$\begin{array}{r} 681 \\ - 391 \\ \hline \end{array}$$

$$\begin{array}{r} 536 \\ - 530 \\ \hline \end{array}$$



TEMPERATURE ACTIVITY

The temperature inside Natural Bridge Caverns is 70 degrees.

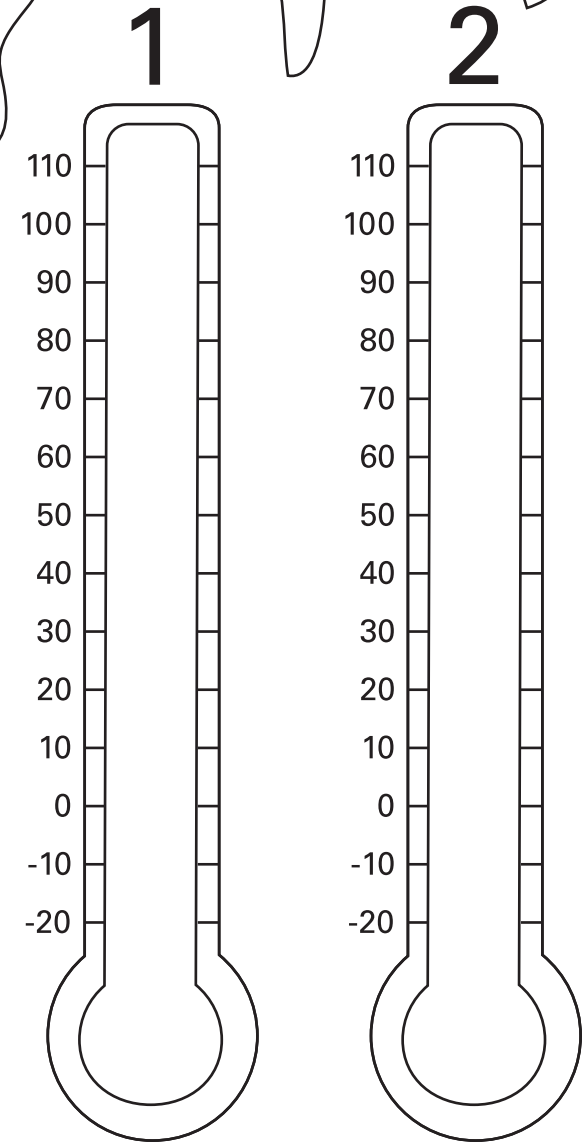
Show the the temperature inside Natural Bridge Caverns on thermometer 1.

What is the temperature in your classroom right now? _____ °

Show the the temperature in your classroom on thermometer 2.

Is the temperature HIGHER, LOWER, or EQUAL to the temperature in Natural Bridge Caverns?

By how many degrees do the temperatures in your classroom and Natural Bridge Caverns differ? _____ °





THE NATURAL BRIDGE

SINKHOLE

CAVE FACTS
**The Natural Bridge is made
from Edwards Limestone
and is over 60 feet long!!**

WATCHTOWER



WHO STUDIES CAVERNS?

NAME: _____

Fill in the empty boxes with one of the correct occupations from the box below.
Each answer will be used only once.

Hydrologists	Spelunkers
Paleontologists	Biologists
Geologists	Speleologists
Archaeologists	

WHO?

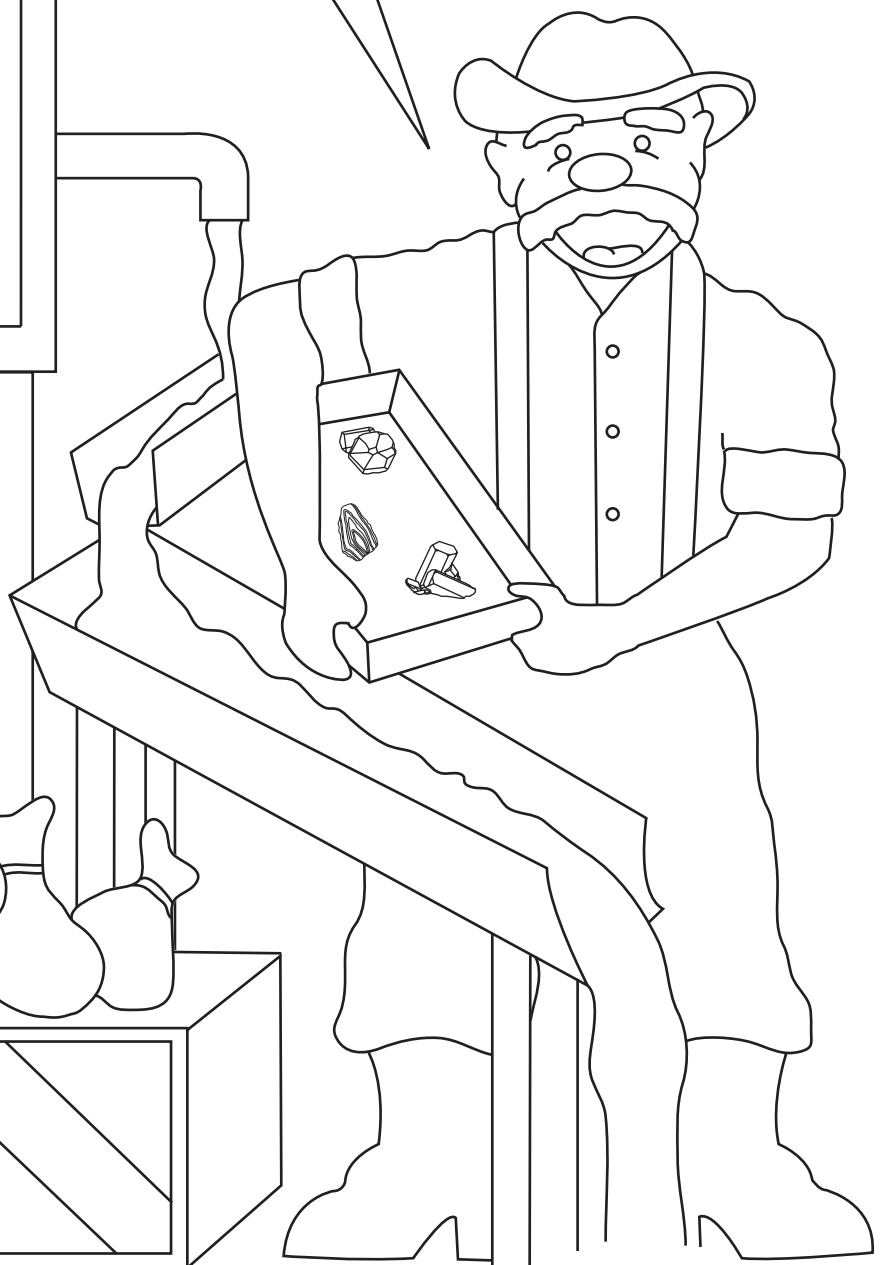
WHAT THEY STUDY

WHY?

	The earth, rocks, rock layers and fossils	To understand how and where caverns are formed and how they grow. Also to predict where caverns, underground water, or other subterranean resources may be found
	Formations (Stalactites, Stalagmites, Flowstones)	To understand how formations grow, predict future growth and change.
	Cavern maps, trails and formations	They study cavern maps so they can find the best route through a cave without damaging the formations. They must also be familiar with the types of formations so that they know what to be especially careful around, and so that they can know when they have found something rare or unusual.
	Animals that live in caves	To identify characteristics that make some animals uniquely adapted to survive in a cavern environment and to illustrate the results of natural selection.
	Caves are a good place to study people of the past, since caves were often used for shelter. They carefully dig (excavate) in the cave to discover tools, cooking hearths, and other artifacts left by people long ago.	They study caves to learn more about the people of the past and their culture. By studying the remains (bones) of food, animals, and plants, they can draw conclusions about the environmental conditions of the past.
	Animals also use caves as shelter. They study the bones, exoskeletons and fossilized remains of plants and animals.	By understanding the animals that lived in the past, they can draw conclusions about the environmental conditions of the past and forces effecting change on the animals as they adapted to changes in the environment.
	They study the action of water underground.	By understanding the way that water behaves underground, they can then understand the effects of the environment and human activity on the water table.

PAN FOR GEMS!

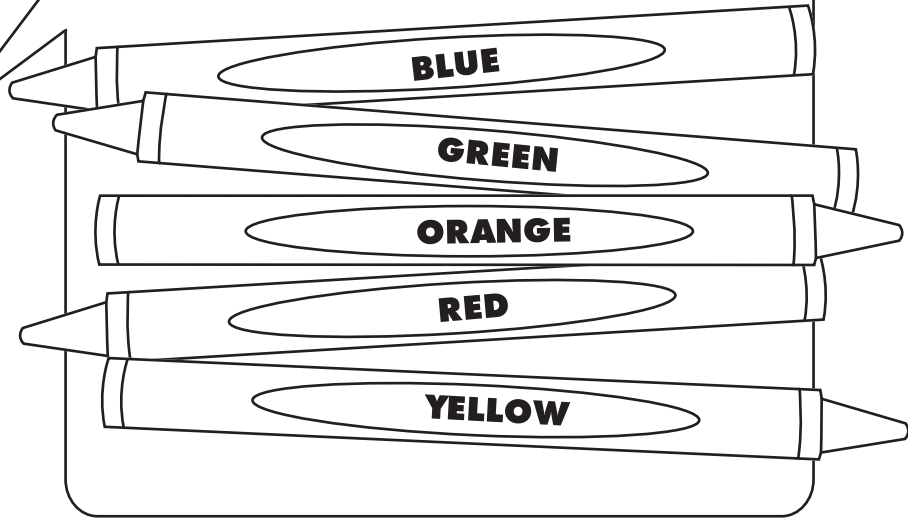
NATURAL BRIDGE
MINING CO.





GRENDEL

These are my favorite colors, can you find them in my word puzzle?
Once you've found them all, use those colors to color me in!!



E	G	B	G	M	Y
A	G	R	E	E	N
B	P	N	L	N	R
C	L	L	A	Z	E
P	O	U	A	R	D
W	H	Q	E	Y	O

ZIP LINE

