

THE **SWELL** UTAH

THE OFFICIAL KIDS GUIDE TO EMERY COUNTY



WELCOME TO EMERY COUNTY

» Population: **10,077**
Elevation: **5,800 ft.**
Size: **4,445 sq. miles**

Did you know Emery County is one of the largest counties in the State of Utah, located in the heart of the southeastern section of the state? The eastern border is formed by the Green River, which flows through deep canyons all the way into the Green River Valley.

A LITTLE HISTORY

Archaeological evidence shows that Native Americans lived in the county for thousands of years before settlers came. Evidence of these Native Cultures is carved in stone around the county in the form of petroglyphs and pictographs (images etched into and painted on the rocks).

Settlers first came to the area in the early 1800s. Fur traders, Spanish traders and explorers were coming through the area. The Old Spanish Trail, which connected Santa Fe with California, went through Emery County's rugged San Rafael terrain. The trail was used heavily as it was one of the few routes through the West until the gold rush spurred the development of more direct routes to California.

In the mid 1870s ranchers and stockmen began bringing their herds into Emery County, and in 1877 Brigham Young issued his last call for settlers in the area. By 1880 enough families had settled in Emery County to justify the establishment of a county government. The proposed name was "Castle Valley," but the

territorial legislature chose instead to name the county after Governor George C. Emery. It now has the distinction of being the only county in Utah named after a governor.

In the 1880s, the Denver and Rio Grande Western Railroad came to Green River, on the eastern edge of the county, and populations expanded in the region as a result. By the turn of the century, the population was just over 4,600, with over 450 farms growing crops on over 25,000 acres.

In the 1900s, Emery County became known for coal. The demand for coal during World War II led to the development of several mines in the area. In the 1950s, the Uranium Boom brought prospectors into the county in record numbers. The Swell, particularly Temple Mountain, had a wealth of uranium, and prospectors were offered a \$10,000 bonus for finding high grade uranium ore. It was a prosperous time in the county.

In 1964 the establishment of the Utah Launch Site of the White Sands Missile Base in Green River and the launching of the Athena and Pershing Missiles brought a much needed boost to the economy and an influx of people (the population of Green River swelled to over 2,000!). The base was closed in 1970.

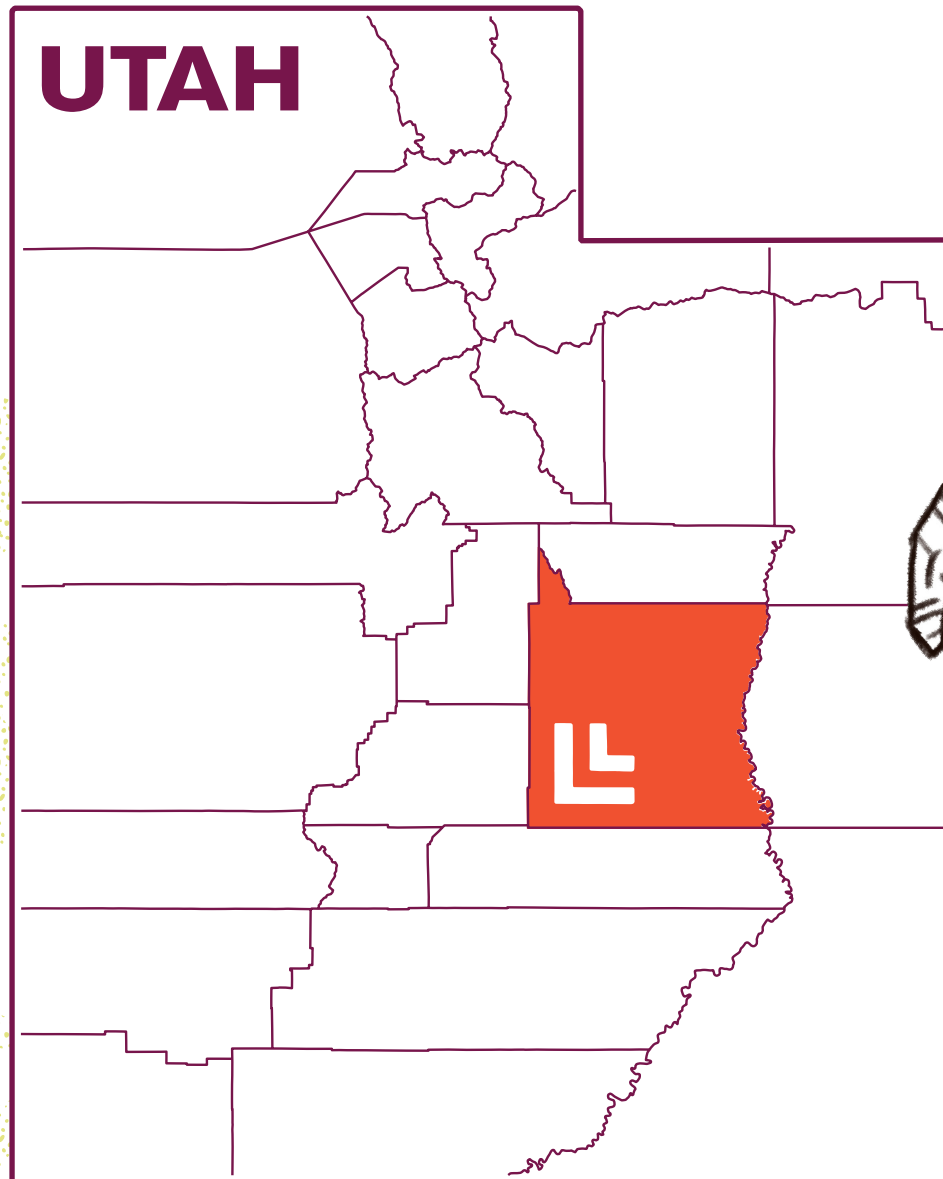


EMERY COUNTY TODAY

Emery County, where the desert meets the mountains, is a great place to live, work and play!

The rich deposits of coal that have attracted miners for over 100 years remain a major resource and source of industry in the county. Rocky Mountain Power operates five steam-generated power plants using coal mined at three nearby mines and other mines in the area sell coal to power plants throughout the West.

Emery County farms produce beef, grain, alfalfa, and quality fruit. The city of Green River established a strong agricultural base with the commercial growing of melons of all sorts in the 1920s, and today is touted as the "Watermelon Capital of the World."



5

STATE PARKS

5

UNIQUE
ATTRACTIONS

3

MUSEUMS

2

GOLF COURSES

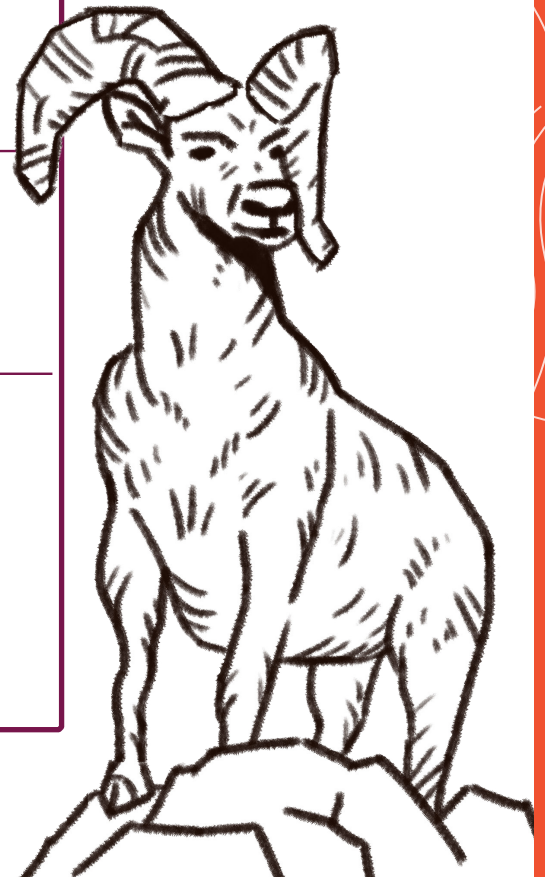
DOMINATE INDUSTRIES

COAL

TOURISM

POWER GENERATION

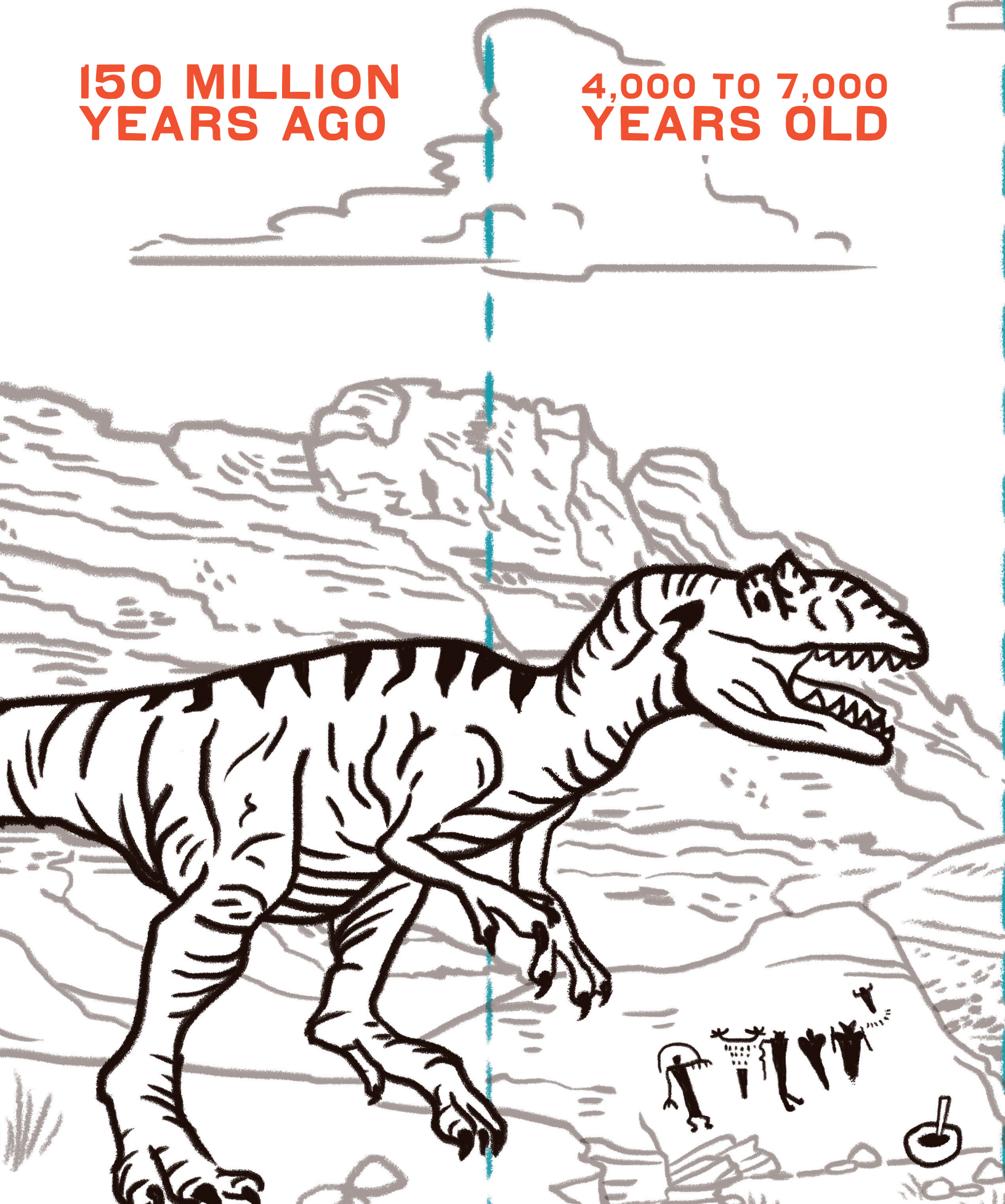
AGRICULTURE



COLORING THROUGH TIME

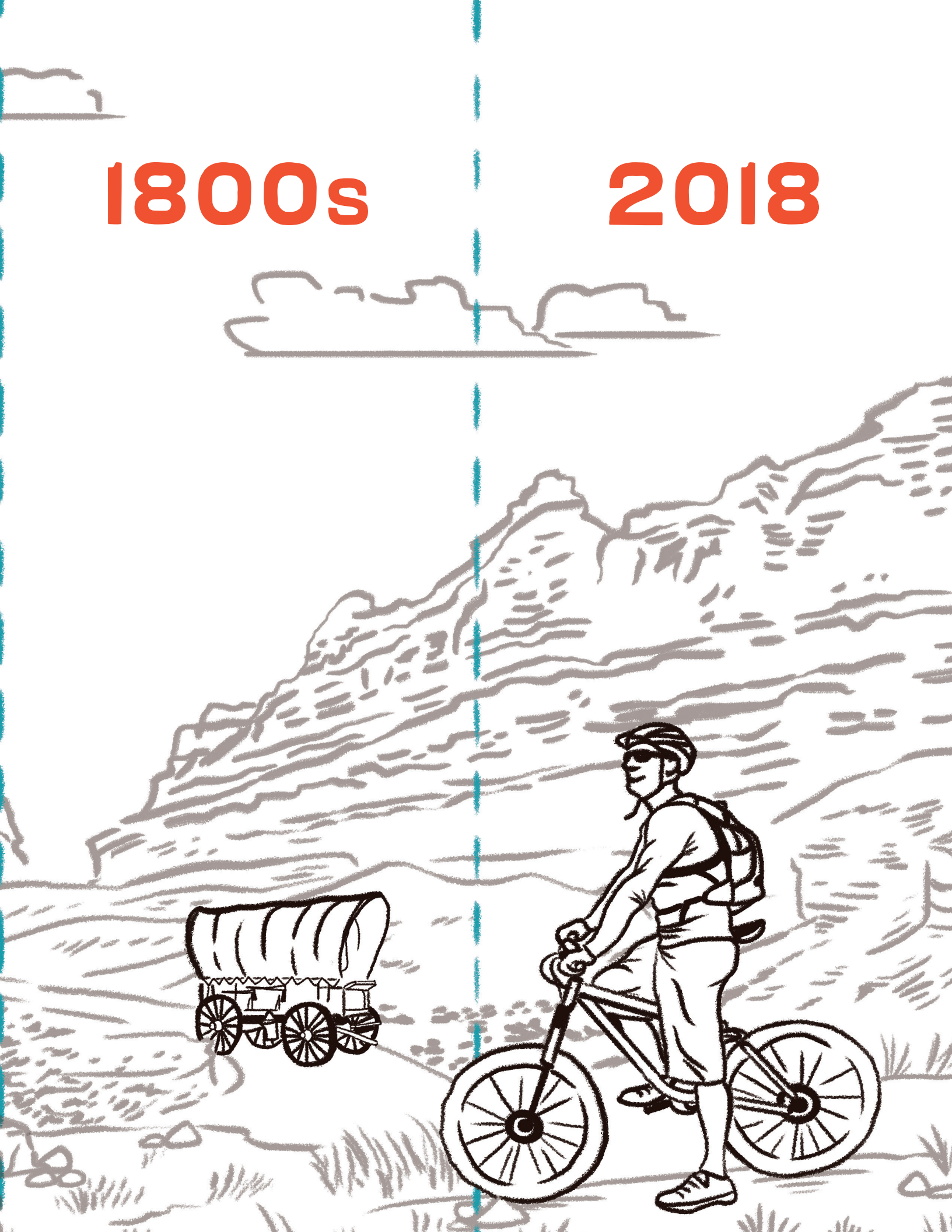
150 MILLION
YEARS AGO

4,000 TO 7,000
YEARS OLD



1800s

2018



MAP BUILDER

Plot out some of the many landmarks of Emery County on the map... so you know where to find the fun!

M9 Wedge Overlook

Nicknamed "Utah's Little Grand Canyon," the Wedge is a deep canyon carved by the San Rafael River with spectacular views that change with the time of day as shadows and light play on the sheer rock surfaces. Mark with a "W."

P3 Rochester Panel

Rock art experts attribute this impressive petroglyph art panel to the Fremont Culture, and there are many theories on what stories are being told by the animals, humans and symbols that make up the artwork. Mark with an "R."

M3 Millsite State Park

Fun for the whole family, Millsite State Park has a reservoir popular for boating, swimming and camping, and the golf course. Mark with an "M."

H10 Cleveland Lloyd Dinosaur Quarry

The greatest collection of Allosaurus bones in the world, this active paleontological excavation site dates back to the Jurassic and features a museum and hiking trails. Mark with a "D."

H6 Huntington State Park

Known for its warm-water reservoir popular for fishing, waterskiing and bird watching, this park has camping and hiking as well. Mark with an "H."

M10 Swinging Bridge

This 160 foot long suspension bridge was built by the Civilian Conservation Corps in 1937 and was the only bridge over the San Rafael River until the 1990s. Though the bridge is no longer used for vehicle traffic, visitors can walk across it and examine its unique engineering. Mark with an "SB."

L10 Buckhorn Pictograph Panel

This panel of artwork is thought to be more than 2,000 years old and the work of the Barrier Canyon Culture, a Native American group that hunted and gathered in the region. Mark with a "B."

W10 Goblin Valley State Park

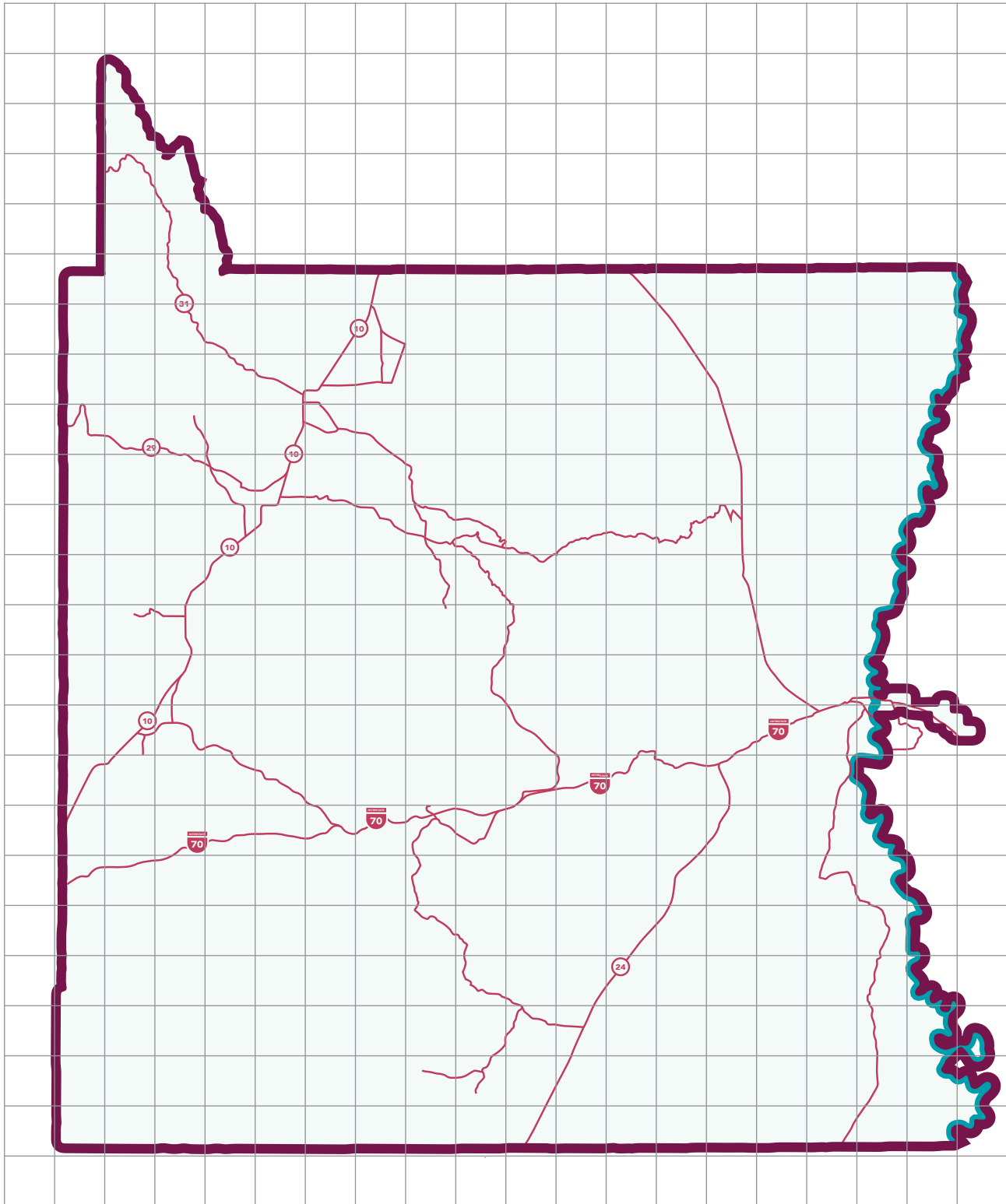
Goblin Valley is the most popular park in the county. It is known for the scores of intricately eroded "hoodoos" that cover the landscape. You can camp, hike, and picnic amongst the goblin formations. Mark with a "G."

O18 Green River State Park

This park features a surprisingly difficult par 36 nine-hole course that runs along the Green River. Tall cottonwood trees add to the scenic nature of the park which is open all year. Mark with a "GR."

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

A
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SECRETS OF THE PAST

Millions of years ago the San Rafael Swell was part of a tropical environment filled with all sorts of creatures, including dinosaurs! Since the 1920s paleontologists have been coming to the area to look for and excavate dinosaur fossils. The most famous site, the Cleveland Lloyd Dinosaur Quarry has yielded more than 15,000 fossils so far, and there are likely many thousands more awaiting excavation and study.

Some of the dinosaurs that have been found in Emery County include:

Allosaurus

A carnivorous (meat-eating) dinosaur that lived about 150 million years ago. The name Allosaurus means "different lizard." The Allosaurus is the Utah state fossil!

Brachiosaurus

Brachiosaurus is a large, plant-eating (herbivorous) dinosaur that lived around 150 million years ago. Known for its long neck, it is thought that these dinosaurs liked to munch on the leaves of trees that grew in the area.

Stegosaurus

An herbivorous dinosaur that lived 150-155-million years ago. It's one of the most easily identifiable dinosaurs, with a double row of kite-shaped plates along the back and two pairs of long spikes near the end of the tail.

Camarasaurus

The Camarasaurus was a large herbivorous dinosaur with a blunt snout and an arched skull. Thought to be a herd animal, these dinosaurs likely travelled in family groups and ate the leaves of the tropical trees that grew in the region.

Ceratosaurus

The rarest theropod (three-toed) dinosaur found in the Swell. Ceratosaurus is thought to have had a nasal horn for decoration, though some have speculated that it was a weapon. The Ceratosaurus fossils, like the others featured here date to the Jurassic, about 150 million years ago.

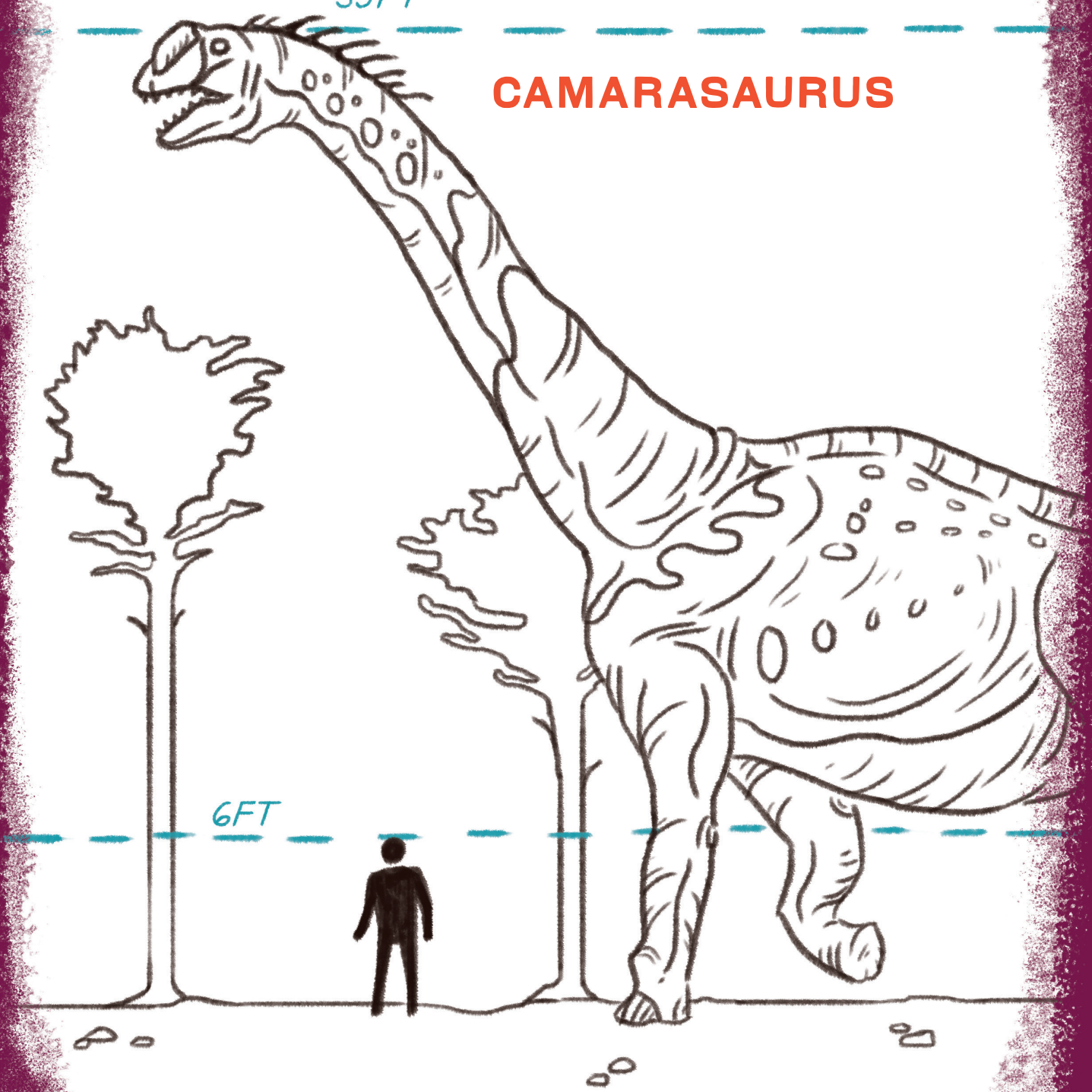
Trivia Question: Emery County is known as the _____ Capital of the World.



35FT

CAMARASAURUS

6FT



FLESH OUT A FOSSIL

Have you ever seen a real live dinosaur—not a dinosaur in a movie or in a museum? Has anyone in the world ever seen a living dinosaur? What remains of dinosaurs that lived millions of years ago? How do we know so much about them if they lived so long ago?

Dinosaurs lived so long ago that no human being has ever seen a real one, which means that the best we can do is make theories about what they were like and how they behaved. Scientists who study dinosaurs are called paleontologists. Fossils are the only remains we actually have of dinosaurs, they include dinosaur bones. Dinosaur footprints, dinosaur teeth, and even dinosaur eggs. Paleontologists and artists work together using those clues to learn about what dinosaurs looked like and how they behaved.

Use the skeleton on the next page to do what the paleontologists do!

1 ADD A BODY

Using a pencil and tracing paper, outline where you think the dinosaur's muscles and flesh might have been. Show the shape of the arm and thigh and how they attach to the body.

Tip: Think about whether some areas on the dinosaur's body have more flesh than others. Also think about living animals with a similar body form, like a chicken or ostrich.

2 ADD SHADING

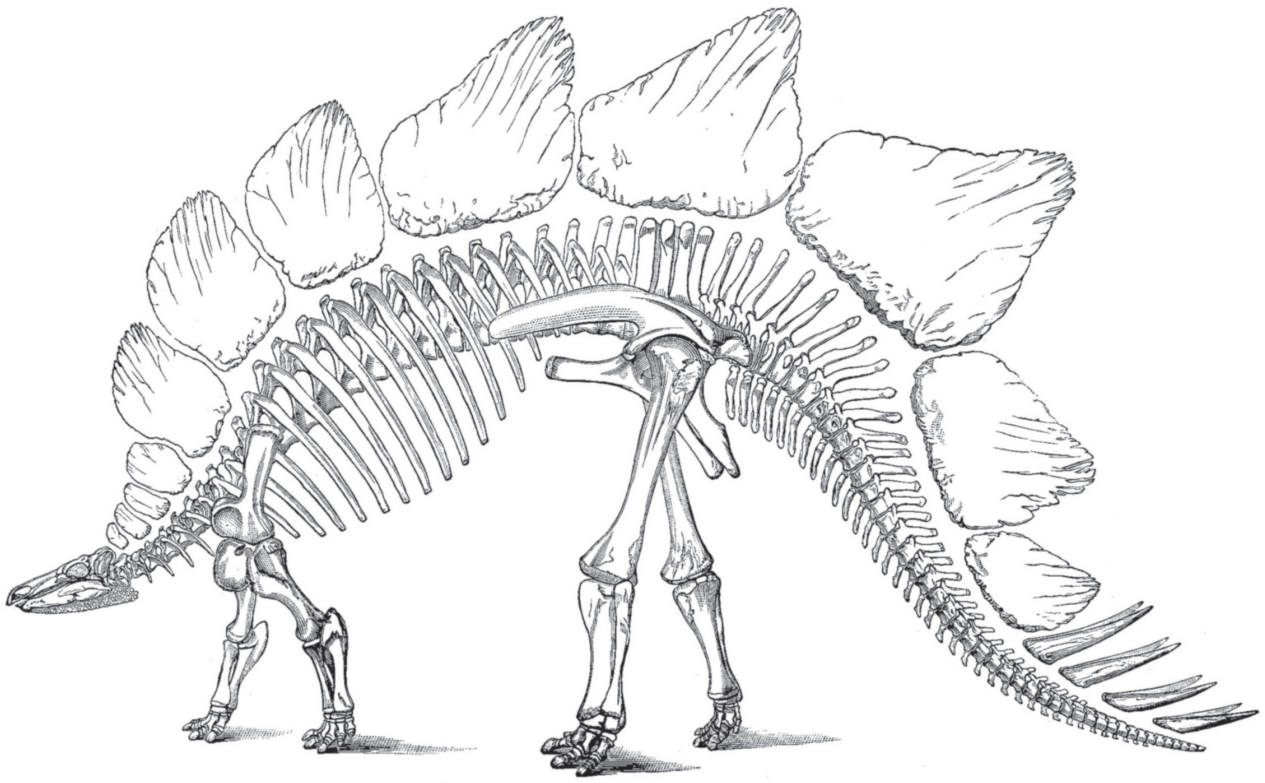
Use short, light strokes to create shadows to make your dinosaur look more lifelike. Use firmer strokes to refine the dinosaur's outline, eyes, nostrils, and claws.

Tip: Pretend a light is shining from the upper left corner. Where would the shadows be?

3 ADD DETAILS

Add skin texture, feathers, or scaly skin. Then color your dinosaur.

Tip: Use your imagination! Some dinosaurs had scaly skin; some had feathers. Fossils don't tell us anything about skin color or patterns, so pick a color (or colors) you think this animal may have had.



STEGOSAURUS



EXPLORE THE NIGHT SKIES

Emery County is home to some of the darkest skies around – that means amazing stargazing and a chance to see dozens of incredible constellations. Spotting constellations is easy with a little help, and summer is the perfect time to get started. Anyone can find the Big and Little Dippers on their own with a little practice, and we'll show you how! Then we'll share a few of our favorites to recreate at home (keep in mind, some constellations are seasonal).

Trivia Question: Which park in Emery County has been officially designated as an International Dark Sky Park?





BIG AND LITTLE DIPPERS

The great thing about the Big and Little Dipper (also called Ursa Major and Ursa Minor) is that they can be seen year-round in the northern hemisphere. They're also tucked close together and have a very recognizable shape. Bonus: if you find these two constellations, you've also found Polaris, the North Star!

HOW TO SPOT THE DIPPERS... FACE NORTH!

Face directly north. These constellations will always be in the north "half" of the sky. Any part of the sky you can see by rotating your head may show the Big Dipper, but it's never behind you. (Sometimes the Big Dipper is below the horizon, too.) Remember, this constellation can be upside down, standing on its handle, or pointed in any direction because it rotates around the sky. The direction it will face depends on the day and time. It looks exactly like a big dipper!

To find the North Star, known as Polaris, follow the two end stars on the dipper to the north. The bright star you find there is Polaris. The cool thing about Polaris is that it barely moves in the night sky—staying in just about the same spot all the time.

Once you find Polaris, you'll surely find the Little Dipper. Polaris is the tip of the handle of the Little Dipper. On a clear, dark night you can see the entire thing!

TAKE TO THE SKIES!

You can even see those stars right in your own yard by making your own constellation projector. You only need a few simple supplies to project your own constellations!

CONSTELLATION TEMPLATE

LIGHT SOURCE (PHONE, FLASHLIGHT)

PUSH PINS

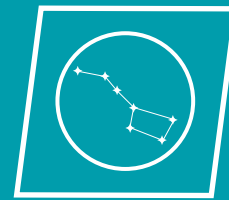
TOILET PAPER ROLL

TAPE

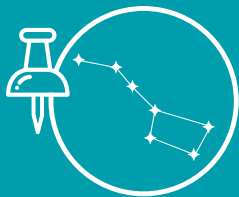
CARDBOARD



1 Cut out the provided constellation cards on the dotted lines.



2 Next, place the printout on top of a piece of Styrofoam or cardboard to protect your working surface.



3 Then, poke holes at each dot in the constellation formations with a push pin.



4 Once your holes are punched, tape your cards to the top of a toilet paper roll.



5 Last, tape the toilet paper roll to your light source and project your constellation formations on the wall. A dark room or dark walls have the best effect—enjoy the night!

Love stargazing? Goblin Valley has been officially designated an International Dark Sky Park - commitment to protecting the natural darkness by only using downlighting where it is needed for safety. Interested in exploring the night sky? Come enjoy full moon hikes, telescope viewing events, and other fun and educational programming in Emery County.



THE BIG DIPPER

The Big Dipper is one of the most easily recognizable constellations in the night sky. It's found within the larger constellation Ursa Major, the Great Bear.



SCORPIUS

Scorpius looks exactly like a scorpion which makes it easy to find. It's only visible in mid-summer because it is so far south. Scorpius is very beautiful, though, and at the heart of the scorpion is a bright red star called Antares.



ORION

Orion is mostly a winter constellation, but it can be seen in the early morning hours on some summer nights. Orion is very easy to spot and difficult to mistake for anything else. There are three equally spaced, equally bright stars that make up Orion's belt, so anyone can find it. Bonus, all the stars have great names: Rigel, Betelgeuse, and Bellatrix.



PLEIADES

This one is actually called an open cluster, not a constellation, but it is well known and easy to recognize. The best place to see the Pleiades, or Seven Sisters, is on the Subaru logo. But if you'd like to see it in the sky, the best time is winter. You'll see Orion chasing the Pleiades across the sky. If you're able to find this asterism, you can easily find Taurus the Bull as well.

YOUR STORY

» QUICK REMINDER!

Adjective
describing words

Noun
**person, place
or thing**

Verb
action words

Adverb
modify verbs

Last summer my family took a trip to Emery County and it was _____!
adjective

We went camping, hiking, rafting, and _____. Along the way we
outdoor activity

saw so much _____ wildlife too. We spotted a herd of bighorn sheep
adjective

that were _____, _____ horses, and _____
verb ending in -ing adjective adjective

rattlesnakes, but my favorite was seeing a real, live _____—now that
animal found in desert

was really _____. We _____ in a yurt in the middle of Goblin
adjective / feeling camping activity

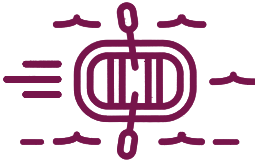
Valley with _____ rock formations all around us. They really did look
adjective

like Goblins! At night we could _____ all the stars and _____
verb adjective

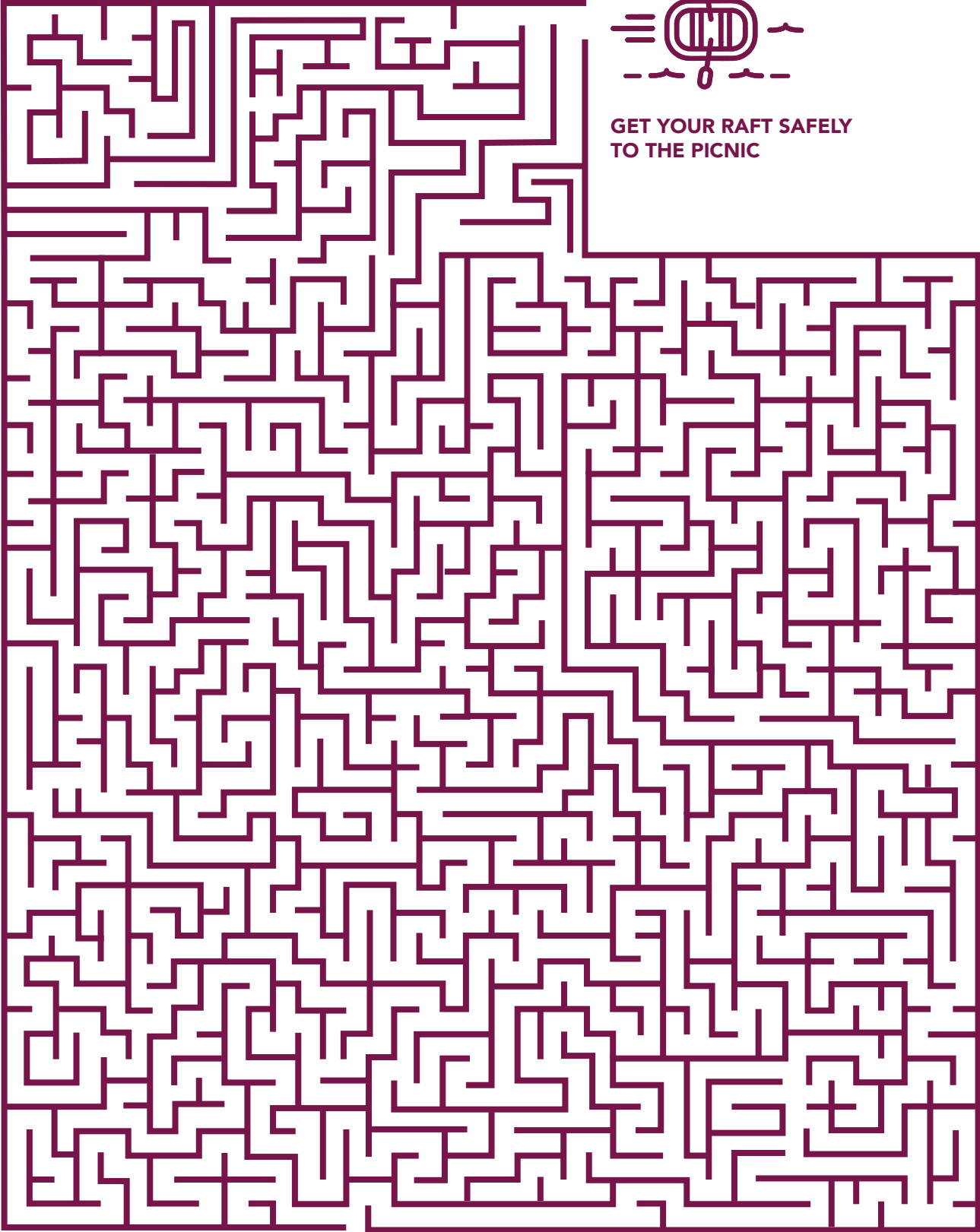
constellations clearly because it was so dark and _____. I can't wait to
adjective

come back; next time I hope we have time to _____ and _____.
verb outdoor activity

RAFTING MAZE



GET YOUR RAFT SAFELY
TO THE PICNIC



TIME TO ROCK OUT!

The rocks that make up Goblin Valley come from the ebb and flow of the sea during the Jurassic (dinosaur times!). The goblins that you see throughout the park are the result of the rock's alternating hard and soft layers of mudstone, sandstone and siltstone. As wind and water worked its way through the canyon, the soft rock wore down, or eroded, faster than the hard layers, making the weird features and figures you see here.



Sandstone is a sedimentary rock composed of cemented sand grains and is the cliff-forming rock all around

southern Utah. Two famous formations are the Entrada Sandstone visible in Arches National Park and the Navajo Sandstone which forms Checkerboard Mesa in Zion National Park.



Siltstone is a sedimentary rock composed mainly of silt-sized particles. It forms where water, wind, or ice deposit silt, and the

silt is then compacted and cemented into a rock. It is finer than sandstone and coarser than claystones.



Colluvium is any loose soil and debris that accumulates at the bottom of a steep slope and can be made up of all types of rock.

Coloring Key

1 Sandstone

2 Siltstone

3 Colluvium

Based on the descriptions above, can you color this image to show different layers of rock? Use the color key to distinguish your layers.



Trivia Question: The Swell was formed roughly ____ million years ago when volcanic activity deep below the surface pushed a huge chunk of land upwards.



FORM YOUR OWN SEDIMENTARY ROCK...

Sedimentary rocks are formed from sediments (tiny rock particles that were created by weathering or erosion) are piled on each other and then compressed down—you can replicate this geologic process at home using crayons.

Materials needed:

CRAYONS: SEVERAL OF EACH IN FOUR DIFFERENT COLORS

PENCIL SHARPENER

6" X 6" PIECES OF ALUMINUM FOIL



- 1 Unwrap the crayons and use the sharpener to create shavings. Make sure to keep the different colored shavings separate from each other for now.

- 2 Take one of the aluminum foil squares and sprinkle each of the colors of shavings into the middle of the square, one at a time so they will form the layers.

- 3 Fold the aluminum foil up tightly around the shavings and then push down to compress it. To do this, you can press on it with your hands, step on it, place it in a clamp or use your creativity to think of other ways. It does take a while to get the crayon pieces to stick together and we found that a little body heat "helps" the process along.



- 4 Carefully unfold the foil and remove the sedimentary rock with care as this is a very brittle rock. You've just made a sedimentary rock!

WORD SEARCH

BIGHORN	CANYON	STARGAZING	GREEN
FOSSILS	GOBLIN	WATERMELON	OBSIDIAN
JURASSIC	MUSTANGS	SWELL	SANDSTONE
RANCHER	RIVER	COAL	URANIUM

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

LET'S MAKE TRACKS!

Trivia Question: The _____ River forms the eastern border of Emery County.



While discovering Goblin Valley's otherworldly landscape there are as many different plants and animals as there are activities and ways to explore!

RATTLESNAKES

Eight rattlesnake subspecies live in Utah, the most common of which—the Great Basin rattlesnake—can be found across the state. Respect the snake by giving it plenty of space to avoid deadly confrontations. Never approach a rattlesnake!



WILD HORSES

Little Wild Horse Canyon is named for the herds of wild mustangs that have roamed the San Rafael Swell since the early 1800s.

NOCTURNAL ANIMALS

Most of the animals in the area (like coyotes, jackrabbits, scorpions, and kangaroo rats) are nocturnal, and only venture out in the cooler evenings to hunt or forage for food.

PEREGRINE FALCONS

Peregrine falcons are large hunting birds that live in pairs. They live on the stony hillsides and mountain areas of the Swell and hunt rodents and small birds.



IT'S WILD OUT HERE!

Use this handy guide to identify the tracks of animals in your area or on your visit to Emery County. How many can you spot?



bighorn sheep

coyote

rattlesnake

wild mustang

burro

mountain lion

mule deer

pronghorn antelope

jackrabbit

scorpion

kangaroo rat

allosaurus

TOWN SCRAMBLE

Unscramble the letters to reveal each of the towns in Emery County.

1) **ATSLCE ALED**

— — — — —

Hint: Originally named after the surrounding cliffs that looked like fortresses or castles

2) **UGONTTHIN**

— — — — —

Hint: Is believed to have been named after a Mormon exploration party which included an Indian interpreter, scout, and scribe.

3) **RONERF**

— — — — —

Hint: The creek here was named after the goverment surveyor Augustus in 1877 and later became the town name.

4) **LAWCNOS**

— — — — —

Hint: Was first called Kingsville for Guy King an early settler. The name was changed in 1904 after the Mormon Apostle Ruderger.

5) **VELCLENAD**

— — — — —

Hint: Named after the 22nd and 24th President of the United States with the first name Grover.

6) **MLEO**

— — — —

Hint: Derived it's name in a very unique way: the first letter of the last name of the four families that settled there was chosen, Erickson's, Larson's, Mortensen's and Oviatt's.

7) **RANLIVELOGE**

— — — — —

Hint: Not named after the color, but after the first settler, Seely.

8) **RENEG VIRER**

— — — — —

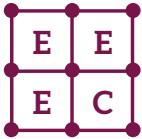
Hint: Is the only town in the Eastern section of Emery County. It was first named Blake, but in 1878 the town took the name of the beautiful river that flows through it.

STAKE YOUR CLAIM

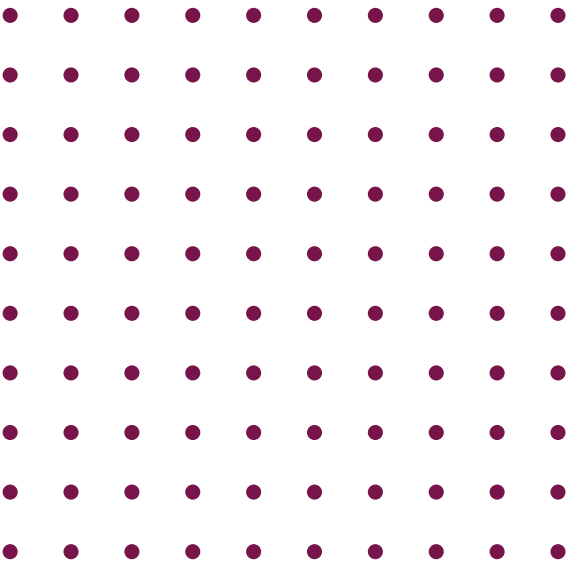
Emery County, Utah has 49,513 records of mining claims on public land managed by the Bureau of Land Management and 669 records of mineral deposits listed by the United States Geological Survey.

Time to stake your claim. Using a different color, each player takes turns drawing one line between two dots (no diagonals!). If that line completes the a square, the player writes their initial in the box and draws another line. Play continues until all dots have been connected. The player with the most boxes wins!

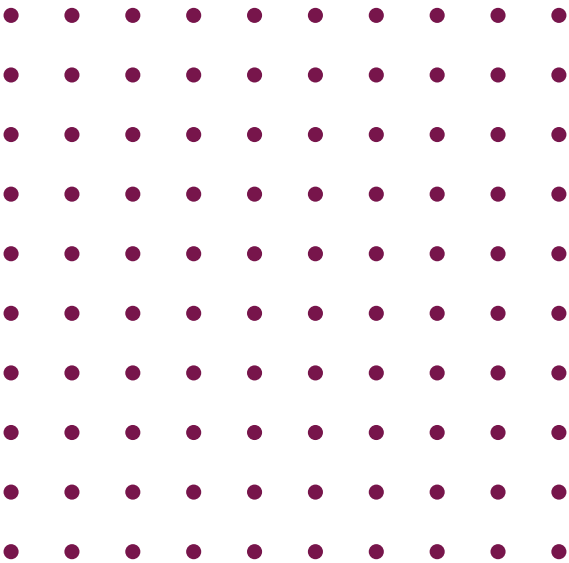
Sample: E wins!



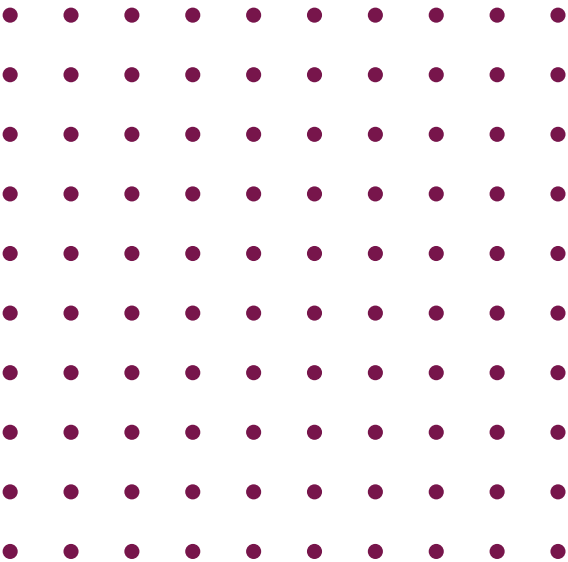
GAME 1



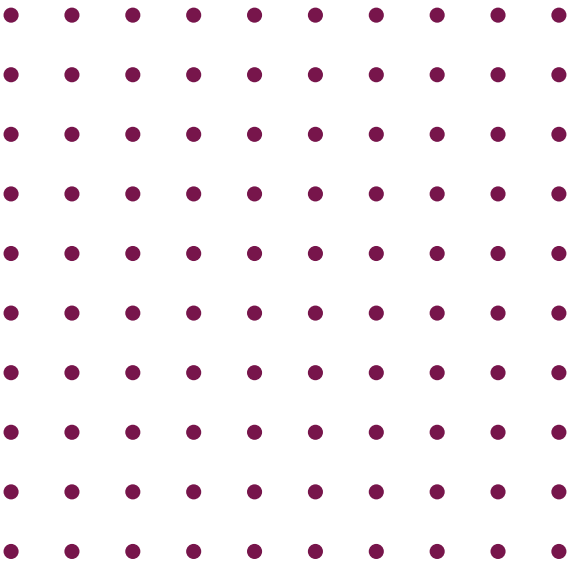
GAME 2



GAME 3



GAME 4



TRIVIA ANSWERS

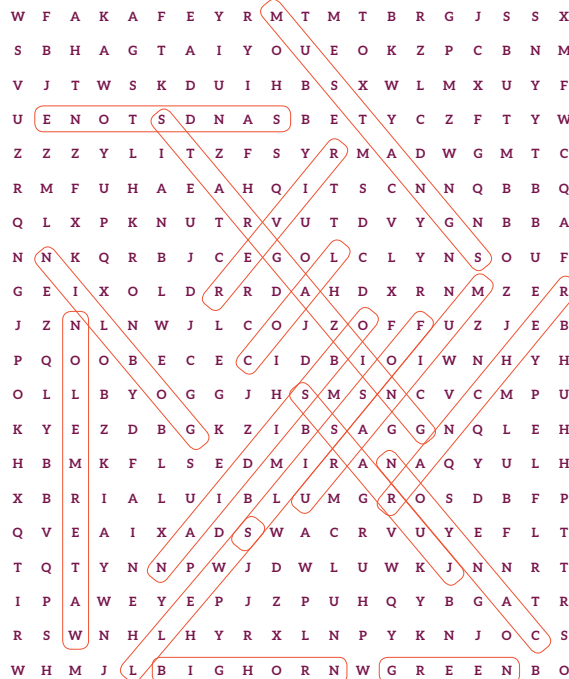
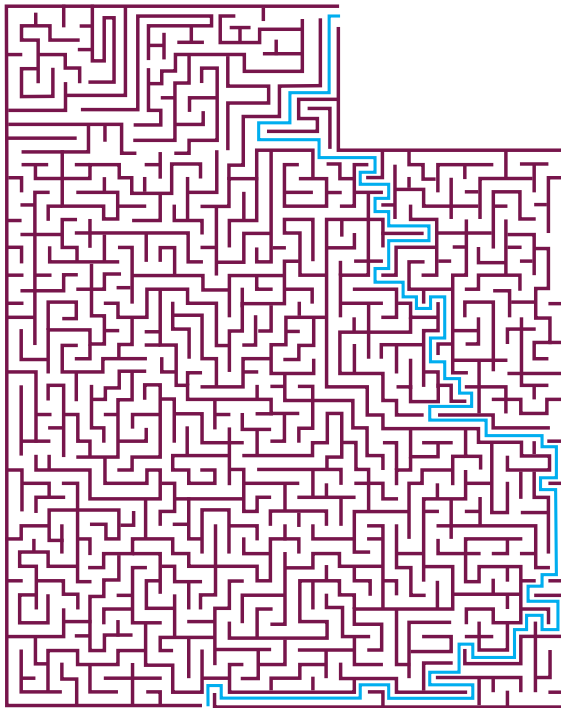
The Swell was formed roughly **50** million years ago when volcanic activity deep below the surface pushed a huge chunk of land upwards.

Which park in Emery County has been officially designated as an International Dark Sky Park? **Goblin Valley State Park**

Emery County is known as the **Watermelon** Capital of the World.

The **Green River** forms the eastern border of Emery County.

MAZE & WORD SEARCH ANSWERS



TOWN SCRAMBLE ANSWERS

- 1) Castle Dale
- 2) Huntington
- 3) Ferron
- 4) Clawson
- 5) Cleveland
- 6) Elmo
- 7) Orangeville
- 8) Green River

