



ACTIVITY BOOK



Protect the Environment

How can you protect the environment at home, school, or anywhere you are on Camp Pendleton?

Can you get to the places where you can help protect the Environment?



The objects below are hidden on pages throughout the book.
See if you can find them!



Connect the Dots

The Three R's

The following are examples of how you can help to **REDUCE, REUSE, AND RECYCLE**. Be on the lookout for other ways you can **REDUCE, REUSE, AND RECYCLE** in your day-to-day activities.

REDUCE:

Carpooling, walking, taking a bus, and riding your bike helps to **REDUCE** air pollution.

REUSE:

REUSE your shopping bags instead of taking home new plastic or paper bags.

RECYCLE:

In addition to **RECYCLING**, you can also help the environment by buying products that contain **RECYCLED** materials.



Did you know?

Money generated by the Base Recycling Center pays for things like youth sports uniforms, tricycles, scooters and helmets for child development centers, and youth center equipment.





Earth Day Crossword Puzzle



DOWN

2. When you are finished watching your favorite show, turn off the _____ to save electricity.
3. _____ is what we drink, use to brush our teeth, and put on our plants to help them grow.
4. Plastic, cans, and paper can all be put in a _____ bin instead of the garbage.
5. Solar panels collect energy from the _____.
8. _____ need water to grow.
12. _____ Day was first celebrated on April 22, 1970.
13. Plants, animals, and people need clean _____ to breathe.

ACROSS

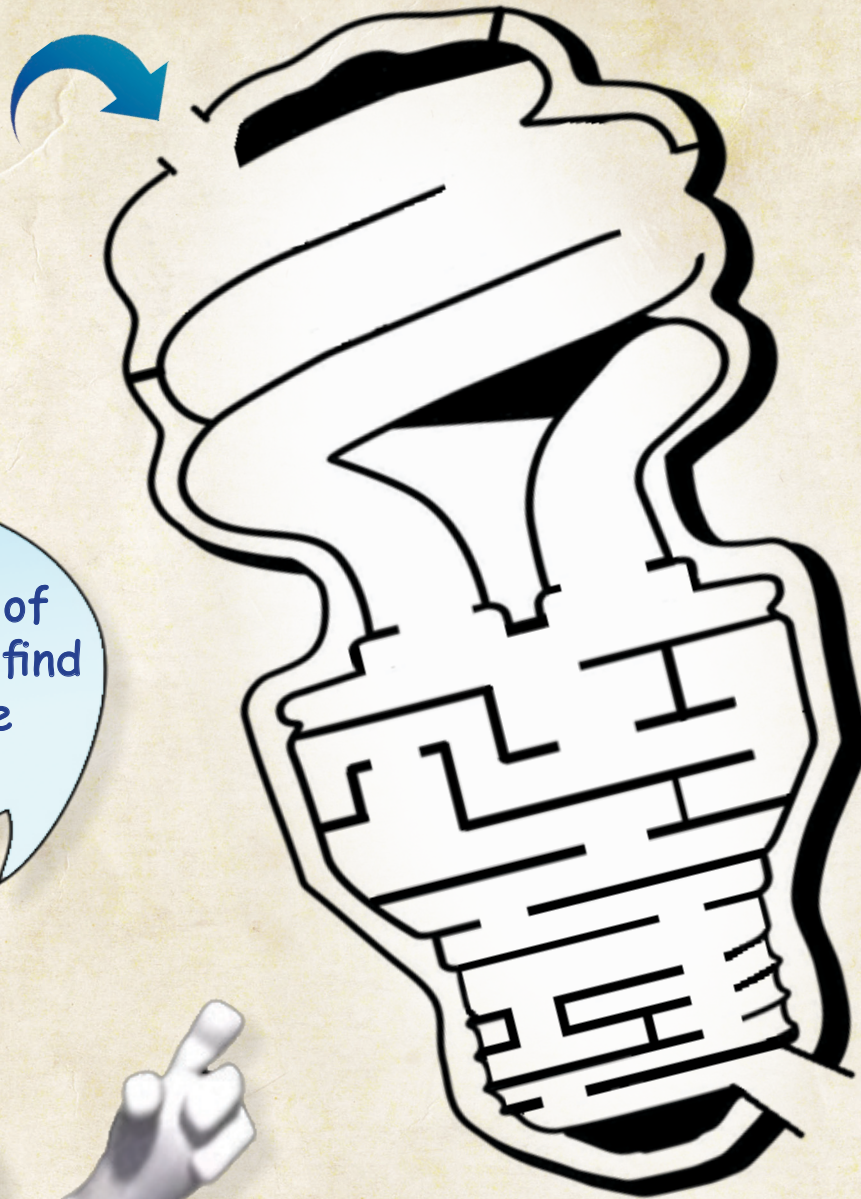
1. Air _____ is caused by burning fossil fuels like gasoline in cars.
6. _____ means to use less of something.
7. When you use something again, you _____ it.
9. Instead of using the car to go somewhere, ride your _____.
10. Healthy plants grow best in clean _____.
11. Electricity, the sun, and wind are all sources of _____.
14. When you leave a room, turn off the _____ to save electricity.

Did you know?

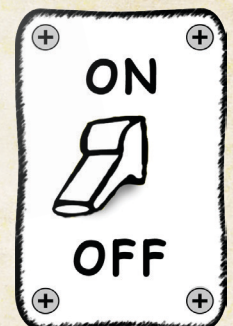
Camp Pendleton celebrates Earth Day every year by holding a community event with fun activities.



Energy Conservation Maze



Start at the top of the light bulb and find your way to the OFF switch!



Did you know?
Camp Pendleton has mounted solar panels on the roofs of buildings to collect energy from the sun.



What is an Ecosystem?

An **ecosystem** (eeko-sis-tem) is a community of plants, animals, and microbes that live together. It can be as tiny as a backyard puddle where bugs and plants live, or as big as the ocean! An aquarium ecosystem, for example, may have fish, plants, sea snails, and other life. A desert ecosystem may have cacti, snakes, and scorpions, and a pond ecosystem can have frogs, insects, snakes, and plants.

Camp Pendleton has three very large ecosystems, (there are others, but let's stick to three for now!). One ecosystem is in the hilly areas of the base, another has lots of water near the ocean, and the third kind includes the rivers on the base.

The **UPLAND** (up-land) ecosystem on base includes hilly areas and large wooded areas (called woodlands), grassy areas (called grasslands), and shrublands (areas with shrubs). It is home to sagebrush, grasses, oak trees, snakes, bison, mice, squirrels, foxes, and birds. It is also drier than the other ecosystems because there is less water. But don't worry, the plants and animals like it that way! The Upland ecosystem also has special crust-like soils that are a living collection of blue-green algae, mosses, and bacteria that prevent soil erosion and help plants grow.

RIPARIAN (rye-pair-ee-an) ecosystems include plants and animals living in or near lakes, rivers, and streams where water saturates the earth's surface, so plant roots easily reach the water for nourishment. On Camp Pendleton, riparian ecosystems are easy to spot because plants are plentiful and there are lots of different plant species all living together! Riparian ecosystems are always changing because every year, streams and rivers experience erosion, and new deposits of soil contain seeds that grow into new trees and plants. The Santa Margarita River is a very important riparian area on base. It has over 148 plant species, 9 reptile and amphibian species, 17 mammal species and 184 bird species, and runs all the way to the ocean!

Did you know?

The Great Barrier Reef is a coral reef near Australia. This reef is the largest living structure on Earth and can even be seen from the moon!



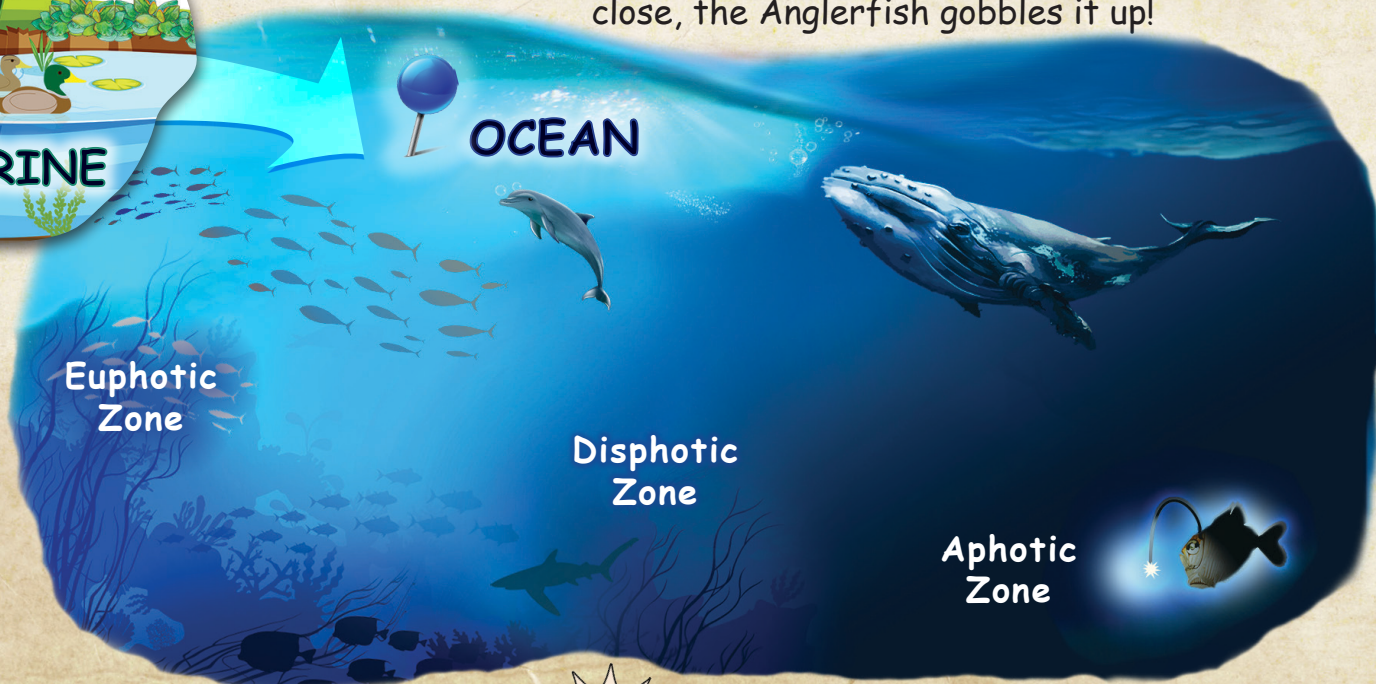
Camp Pendleton Ecosystems

When rivers flow to the ocean, the fresh water meets and mixes with saltwater to form a type of water called "**brackish**." It isn't fresh water, but it isn't super salty like the ocean either. The areas on Camp Pendleton that contain brackish water are called **Estuaries** (es-choo-air-ees). Estuaries are home to fish, shellfish, plants and birds that like brackish water. It is the perfect ecosystem for these animals to live in! This ecosystem is called the **ESTUARINE** (es-choo-uh-reen) ecosystem because it includes the estuaries. It also includes other rivers, bays, and lagoons on base where fresh water and the ocean mix together to form brackish water.

We've discussed three ecosystems on Camp Pendleton, but there is one more... the granddaddy of all ecosystems, the **OCEAN** ecosystem. The OCEAN ecosystem is HUGE! The ocean covers over 70% of the whole Earth and about 97% of all the water on the planet is in the ocean (about 352 quintillion gallons!) The ocean produces about 70% of the oxygen we breathe! It is home to millions of different plants and animals from the smallest organisms (like plankton and bacteria) to the largest animal on the planet (the blue whale, which can grow to over 100 feet long!) and all the animal life in between.

The Ocean ecosystem is divided into **three** zones based on how much sunlight they receive:

- ▶ The **Euphotic Zone** (you-fought-ick) receives lots of sunlight. It begins at the ocean's surface and goes down a few hundred feet (depending on how clear the water is).
- ▶ The **Disphotic Zone** (dis-fought-ick) receives some sunlight, but fewer animals live there.
- ▶ The **Aphotic Zone** (ay-fought-ick) is the deepest zone, receives no light, and is extremely cold. Most marine animals live in the top two zones. The aphotic zone does have some unique (and scary looking!) animals like the Anglerfish, which creates its own light to attract other animals. When its prey gets close, the Anglerfish gobbles it up!





Camp Pendleton's Dinosaurs and Fossils

Hello Explorers' Club Rangers!

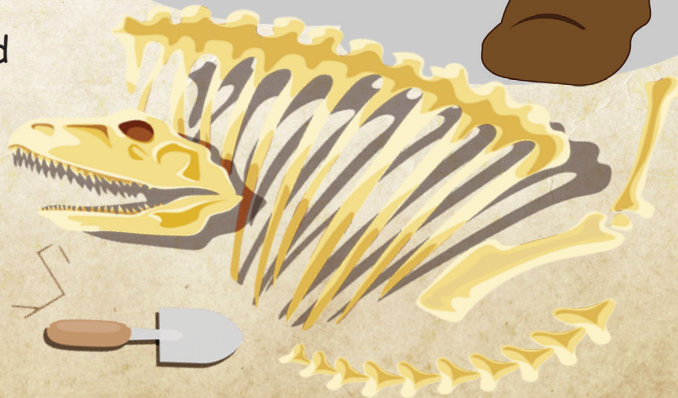
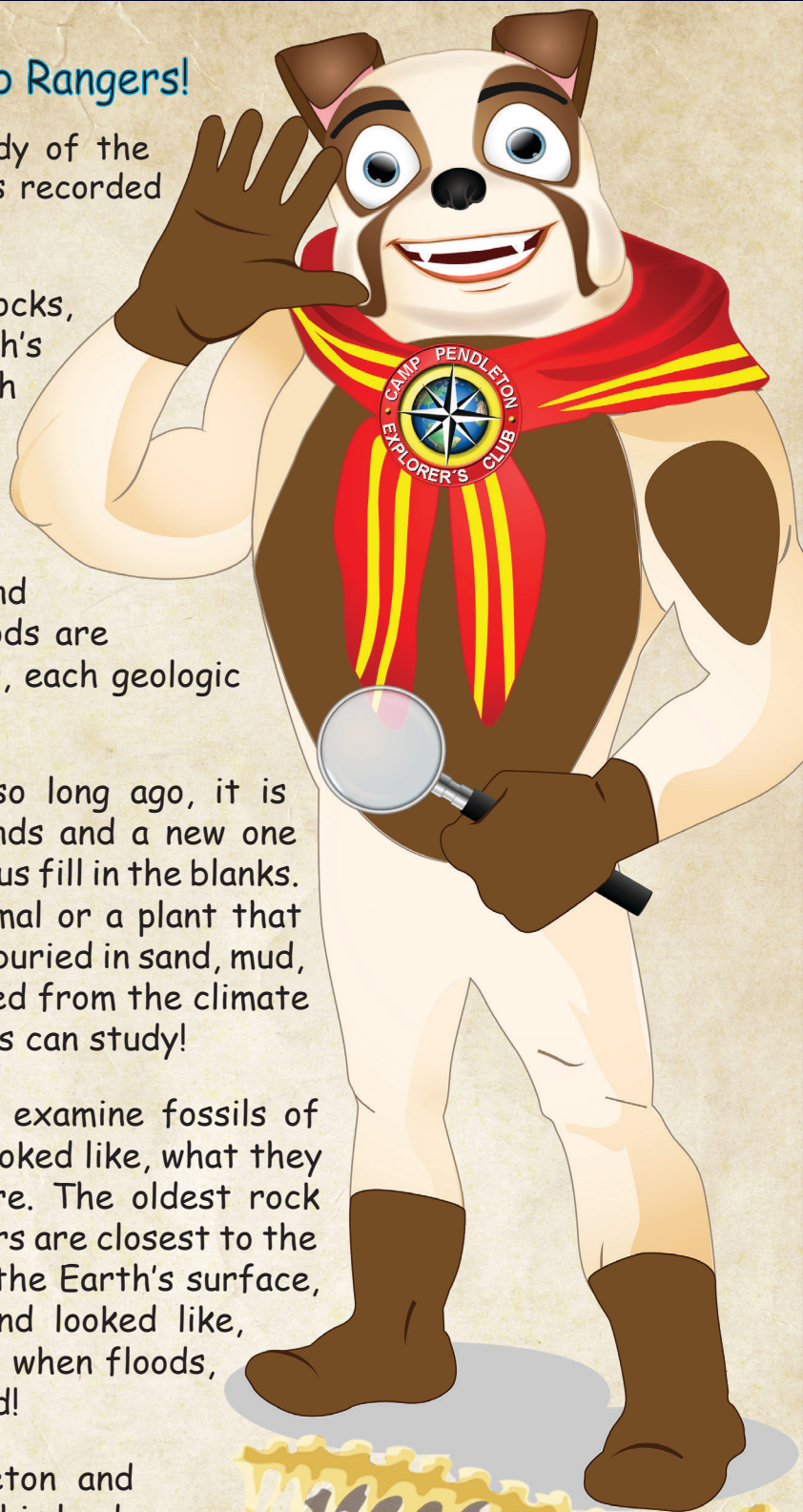
Geology rocks! Actually, Geology is the study of the history of the earth and its life especially as recorded in rocks.

A **GEOLOGIST** is a scientist who studies rocks, minerals, fossils, and the layers of the Earth's surface to learn more about how the Earth has changed over time. To tell the Earth's story, geologists measure the age of the Earth in **Geologic Time** periods. These time periods are like the stages of a person's life. We begin as kids, then we are teenagers, and then we become adults. Geologic time periods are like that, but instead of lasting a few years, each geologic time period lasts a verrrry long time!

Since these geologic time periods began so long ago, it is difficult to tell exactly when one period ends and a new one begins; fortunately, **FOSSILS** (fah-sils) help us fill in the blanks. A fossil is the preserved remains of an animal or a plant that lived a long time ago. Fossils are often found buried in sand, mud, and even in tree sap where they are protected from the climate and have hardened into a rock that geologists can study!

Geologists are like Earth Detectives! They examine fossils of animals and plants to determine what they looked like, what they ate, where they lived, and how old they are. The oldest rock layers are buried deeper and the newest layers are closest to the surface. By examining the layers of rock in the Earth's surface, geologists can also determine what the land looked like, what the climate and weather were like, and when floods, earthquakes, and volcanic eruptions happened!

By studying fossils found on Camp Pendleton and nearby, geologists discovered that much of this land used to be under water, and the erosion caused by the waves and the sand made Camp Pendleton's shoreline very flat, much like it is today.



What can Fossils Teach us?

As the water moved further away from the land and new plants began to grow... **DINOSAURS** moved in! Some of the dinosaurs that roamed Camp Pendleton were HUGE!

The **Hadrosaur** was 30 feet long and weighed over 15,000 pounds!



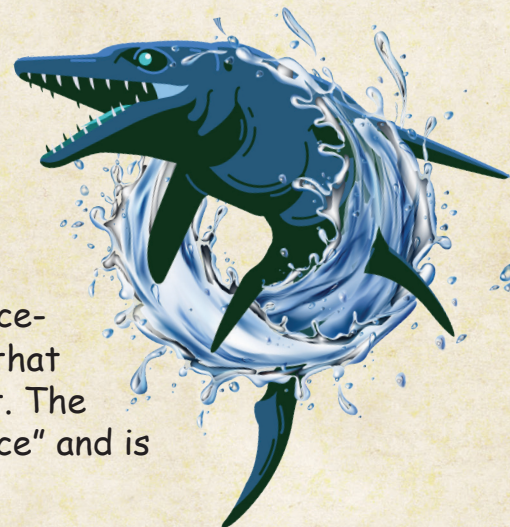
The **Nodosaur** was a giant lizard that wore armored plating and looked like a 14-foot-long Armadillo!



There were also **Brontotheres** (early cousins of the modern rhino) and even **Woolly Mammoths**!



Probably the most fearsome dinosaur in this area was a fierce-looking giant sea lizard with sharp teeth called a **Mosasaur** that lurked in the shallow waters just off Camp Pendleton's coast. The largest Mosasaur skeleton found (so far!) is nicknamed "Bruce" and is over 43 feet long!



For thousands of years, the Santa Margarita River has run through the middle of Camp Pendleton all the way to the ocean. Over time, the river eroded the soil and rocks to create the Santa Margarita River Valley. Many fossils along the riverbank and hillside tell us that **giant ground sloths, early camels, horses, and saber-toothed cats** (Here kitty kitty!) also roamed the area! Most of these dinosaurs eventually became extinct.

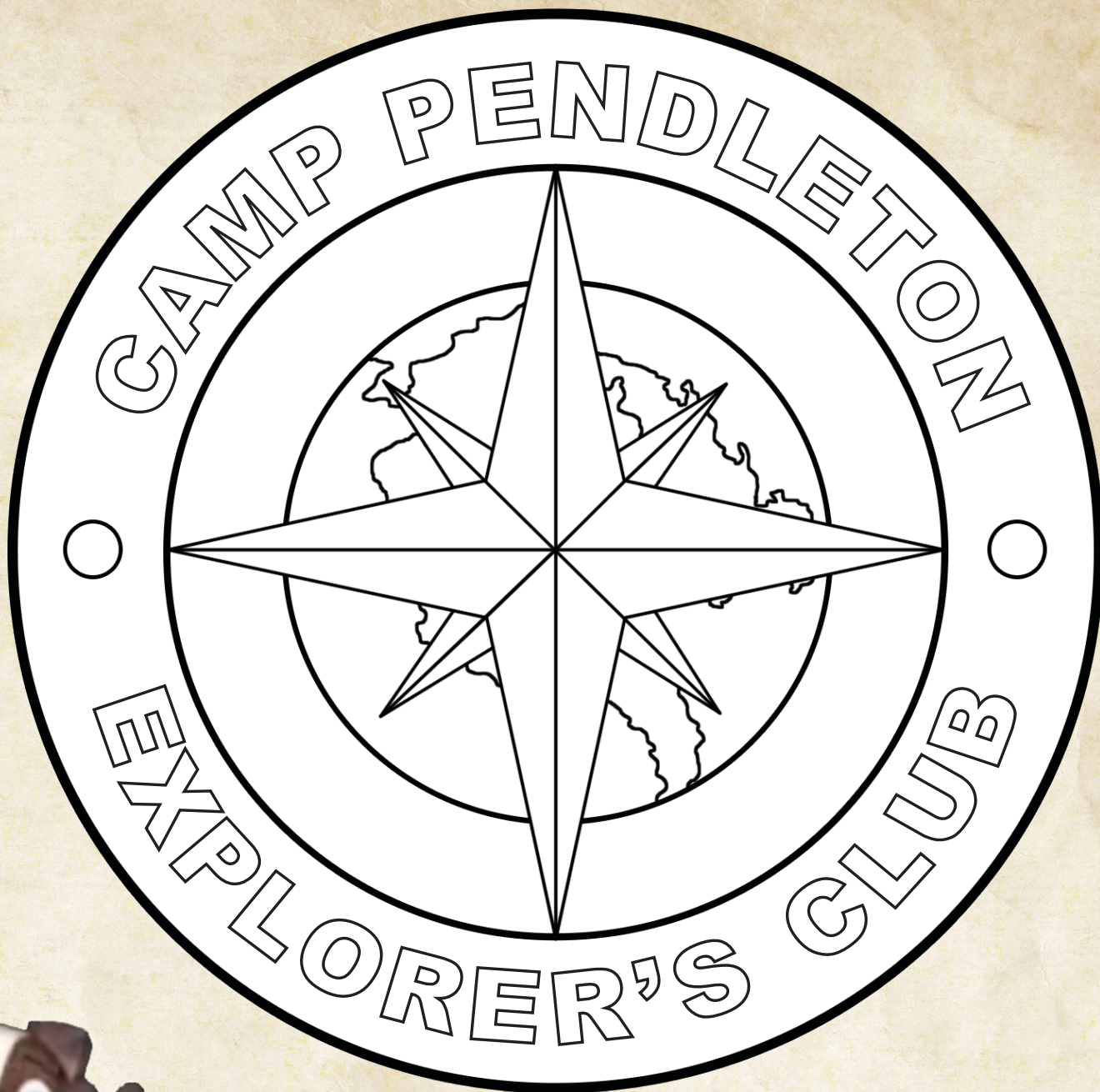
Then, around 10,000 years ago, thousands of Native Americans came to live in the Santa Margarita River Valley and the surrounding areas. We have learned much about their culture and daily life by studying the evidence in the Earth's rock layers. We have a pretty good idea about what they ate, what kind of shelters they built and lived in, and we have even found some of the tools they made from stone and bone!

The ancient history of the plants, animals, and people that have made Camp Pendleton their home is a fascinating story, I hope that you enjoyed learning about it!

– Sammy



Color Me!



Did you know?
Recycling one aluminum can saves enough electricity
to power a TV for 3 hours.

Color Me!



Did you know?
Sammy is the Senior Ranger
of the Camp Pendleton Explorer's Club!



Conserve!

How many times can you
find the word **CONSERVE**?

You can move backward and forward.
Find the bonus word: ENERGY



C	O	N	S	E	R	V	E	E	E
O	C	O	N	S	E	R	V	E	V
N	C	O	N	S	E	V	R	E	R
S	R	O	O	E	O	N	E	O	E
E	N	E	R	G	Y	R	S	E	S
R	N	E	R	O	R	E	N	V	N
V	E	V	R	E	S	N	O	C	O
E	V	R	E	S	N	O	C	E	C
C	O	N	S	E	R	V	E	S	C

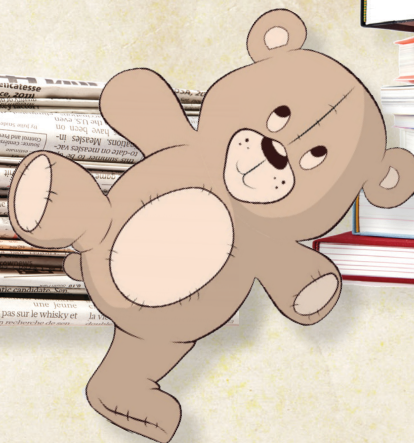
Did you know?

Camp Pendleton's energy conservation program for base housing encourages families to conserve energy. The money saved is used for playgrounds, basketball courts, swimming pools, and community centers!



Reduce, Reuse, Recycle


You can help save the environment by using less, reusing things, giving things away for others to use, and recycling.



What can YOU recycle?



Mark the best choice for each item below:

PLASTIC BOTTLES	_____REDUCE	_____REUSE	_____RECYCLE
USED TOYS	_____REDUCE	_____REUSE	_____RECYCLE
WATER	_____REDUCE	_____REUSE	_____RECYCLE
BOOKS	_____REDUCE	_____REUSE	_____RECYCLE
GLASS 	_____REDUCE	_____REUSE	_____RECYCLE
NEWSPAPER	_____REDUCE	_____REUSE	_____RECYCLE

Did you know?

The Camp Pendleton Recycling Center recycles old computers, cell phones, stereos, televisions, DVD players, and video game consoles.



Threatened & Endangered Species Word Scramble

18 THREATENED AND ENDANGERED SPECIES

Camp Pendleton's 125,000 acres of land provides habitat for over 1,100 species of plants and animals. Eighteen of those species are threatened or endangered.



UNSCRAMBLE THE WORDS BELOW TO LEARN MORE ABOUT THEM!

8 BIRDS

The Bald Eagle is our national **irbd** _____ and it has a place of honor on the United States Seal. The Brown Pelican has a big bill and glides over the surf and **tsea** _____ fish. The California Least Tern comes to Camp Pendleton to make its nest on our **achbees** _____. The Coastal California Gnatcatcher is a little bird that lives in the Coastal sage scrub near the **eanoc** _____. The Least Bell's Vireo is a small **gbirsond** _____ that lives on Camp Pendleton, especially in the lower Santa Margarita River. The Light-Footed Clapper Rail is a long-legged wading bird with large feet and a short tail that eats crabs, snails, **ctsinse** _____, worms, and fish. The Southwestern Willow Flycatcher is a small bird that lives near rivers, streams, and other **terwa** _____ sources. The Western Snowy Plover are small shorebirds with white chests that live on the beach. They are threatened due to their nesting sites being disturbed and **bithaat** _____ loss.

1 MOUSE AND 1 RAT

The Pacific Pocket Mouse was believed to be **tinctex** _____ until 1993 when a small population was discovered living in the sandy coastal soils at Camp Pendleton. The Stephens' Kangaroo Rat is **turnalnoc** _____ (it is awake at night and sleeps in the day)! They are so rare that the Camp Pendleton biologists fitted them with trackers so they could watch out for them!

2 FISHES

The Southern California Steelhead is a very rare **nbowrai** _____ trout that has been found on Camp Pendleton. The Tidewater Goby is a tiny fish that is less than 2 inches long that lives on Camp Pendleton near the coast in the brackish (fresh water mixed with salt water from the ocean) **oonslag** _____ and inlets.

1 TOAD

The Arroyo Toad is a stocky, blunt-nosed, warty-skinned **eciessp** _____ of toad that lives on Camp Pendleton in creeks and rivers with shallow pebbles and sandy shores.

2 SHRIMPS

The San Diego Fairy Shrimp and Riverside Fairy Shrimp are tiny freshwater shrimp that are less than 1 inch long! They live in vernal pools. Vernal pools are shallow pools that fill with water from **terwin** _____ and spring rains that usually begin in November and continue into April or May.

3 PLANTS

San Diego Button Celery, an endangered herb, and Spreading Navarretia, a rare species of flowering plant, live in some of the vernal pools. Thread-Leaved Brodiaea is a rare flowering herb that **omsblo** _____ from May to June.

Connect the Dots



Camp Pendleton's American Bison

From the late 1960s through the mid-1970s, the famous San Diego Zoo gave 14 American bison to Camp Pendleton because the zoo did not have enough space and because Camp Pendleton has an excellent reputation as a protector of the environment. In 1975, the herd's first calf was born. Many more calves have been born since then. Today, Camp Pendleton has about 80 bison. The exact number is unknown because it is tough to count something that moves all the time! The bison are fortunate that Camp Pendleton has plenty of grass to eat, several spring-fed ponds from which to drink, and numerous oak trees that offer shade on hot days. Research shows the bison are healthy, live long lives, and are some of the largest bison in the world!

Before the year 1800, there were an estimated 20 million to 60 million bison in the USA. By 1884, because of hunting and diseases from domestic cattle, the bison was nearly extinct and only a few hundred were left. In 1905, the American Bison Society set up bison sanctuaries where bison could roam and be protected from hunting and disease. That was the beginning of the American Bison Conservation Effort. Today, there are about 500,000 bison living in the USA and in 2016, the American bison became the first national mammal of the United States.



Did you know?

Camp Pendleton has a game warden who watches out for the bison and other wildlife.



Spot the Differences

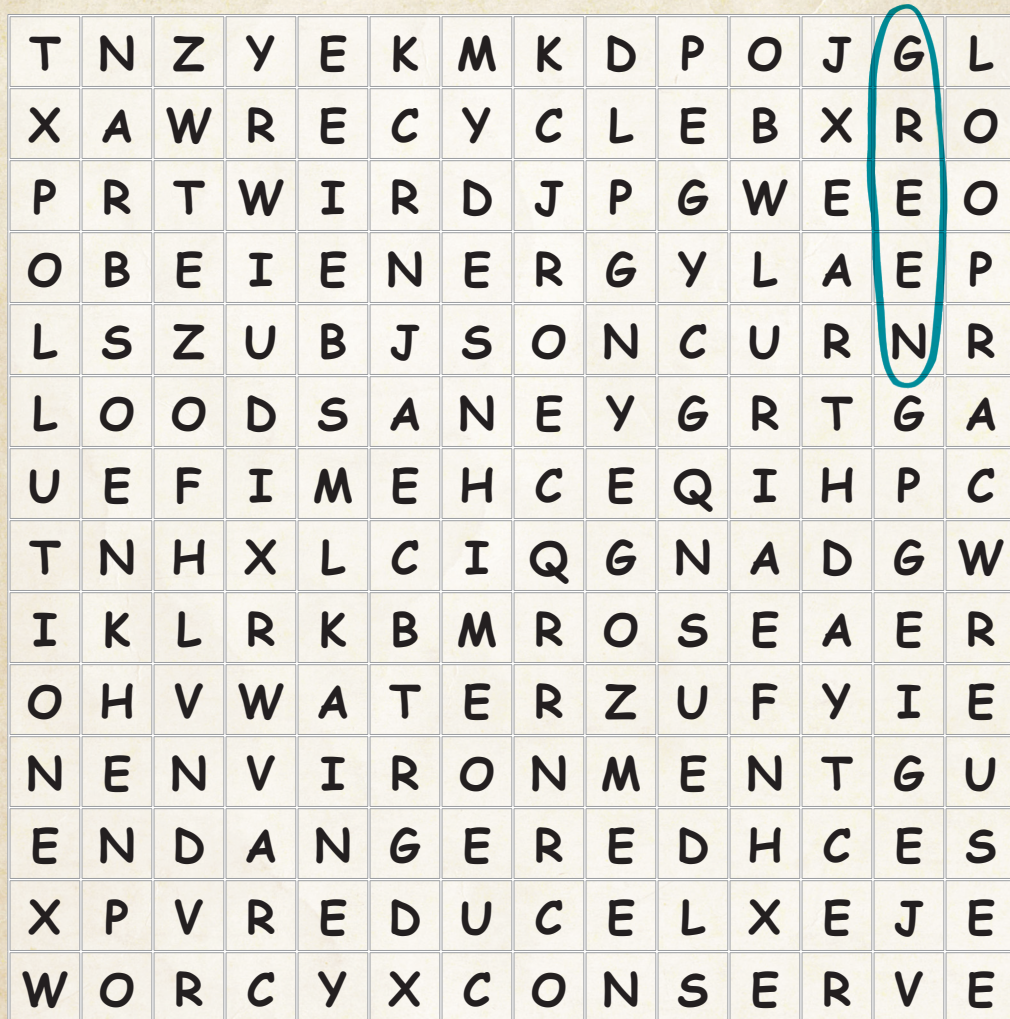
Can you spot the differences between the two pictures?
(There are 11 of them.)



Environmental Word Search



Find the hidden words in the Word Search below. Words are written forwards, backwards, and diagonally! The first one is done for you!



AIR
BICYCLE
CARPOOL
CONSERVE
EARTH DAY
ENDANGERED
ENERGY
ENVIRONMENT
GREEN
HABITAT
POLLUTION
RECYCLE
REDUCE
REUSE
SOIL

Did you know?

Camp Pendleton has an Environmental Department that works every day to protect the environment by encouraging everyone on base to watch out for threatened or endangered plants and animals, reduce pollution, conserve water and energy, and recycle instead of throw things away.





Luiŕeño Indians Topamai Village

Unscramble the words below to learn more about
Topamai Village on Camp Pendleton!



For several thousand years, Southern California and Camp Pendleton were home to the Luiŕeño Indians. They called themselves "Western People" in their own language. In 1769, the first Spaniards came to Southern California looking for locations to establish missions and met the local Indians. The missionaries who came to Southern California in the 1790s began to refer to the them as the Luiŕeño (pronounced "LOO-EE-SANE-YOH") Indians because they lived near the San Luis Rey Mission that was built in 1798.

On Camp Pendleton, the Topamai Village of the Luiŕeño Indians is located near the Basilone Bridge where the Ranch House stands today. Topamai Village was home to more than a **undhdre** _____ Luiŕeño Indians. The Topamai Indians lived in tule (pronounced "TOOLEE") huts shaped like domes and covered in woven **ragss** _____.

Lakes, streams, marshes, and the Pacific Ocean provided a large variety of **oofd** _____ for the Luiŕeños. They ate mussels, oysters, clams, abalone, anchovies, sardines, and other **shfi** _____. They hunted for deer and **itbrab** _____. They also gathered seeds, berries, and **tsnu** _____. Young Topamai **renildch** _____ spent much of their time playing games, swimming, learning to make and throw rabbit sticks, and learning to weave **baetsks** _____. Today, the Luiŕeño descendants all drive cars, but several hundred years ago, they built two different kinds of **noesca** _____ for fishing: light weight boats made of bundled reeds, and heavier ones made from hollowed-out logs.

The Topamai Village Indians lived in the area until the mid-1800s. In 1834, the missions were closing and Southern California was part of Mexico. Some Luiŕeños worked on the Mexican ranches as **owbcoys** _____ or laborers. In 1850, California became part of the **edUnit atesSt** _____.

Descendants of the Luiŕeño Indians still live in Southern California today! Today, the Luiŕeño people all speak **glEsinh** _____, but some Luiŕeños, especially elders, still speak their native Luiŕeño language. An easy Luiŕeño word "míyu" (pronounced "MEE-YOO") is a friendly greeting like "**lolhe**" _____!

The History of Camp Pendleton



Learn the History of Camp Pendleton, then answer the questions below!

Of all the Marine Corps bases in the world, Camp Pendleton has one of the most intriguing pasts, filled with Spanish explorers, colorful politicians, herds of thundering cattle, skillful vaqueros (Spanish for cowboys!) and tough Marines!

In 1769, a Spanish Explorer and his men came north from lower California to establish Franciscan missions throughout California. He arrived at a location known today as Camp Pendleton and the Mission San Luis Rey was built just south of present-day Base in 1798. Following Mexico's independence from Spain, Southern California and present-day Camp Pendleton were part of Mexico. In 1841, the Mexican governor awarded the land and a rancho (Spanish for ranch) to two brothers, Pio and Andres Pico who became the first private owners of Rancho Santa Margarita. Over the years, several different men owned the rancho until 1942 when the Marine Corps bought the land.

Construction of Camp Pendleton began in 1942 and took 5 months. President Roosevelt dedicated the Base on Sept. 25, 1942. During the Korean War, Camp Pendleton was expanded and Camp Horno was constructed. More than 200,000 Marines were trained as a fighting force on their way to the Korean and Vietnam wars. In the 1980s, the Marine Corps expanded its capabilities and combined infantry, armor, supply, and air power. Today, troops and equipment can be deployed halfway around the world in only days.

Some of the Base's streets are named in honor of military war heroes. Camp Pendleton was named for Maj. Gen. Joseph H. Pendleton who served in the Marine Corps for 46 years. Vandegrift Boulevard is named for Gen. Alexander A. Vandegrift who fought in World War I, served as the 18th commandant of the Marine Corps, and earned the Medal of Honor. Basilone Road is named for Gunnery Sgt. John Basilone who fought bravely in the battles of Guadalcanal and Iwo Jima and was also awarded the Medal of Honor.

Today, Camp Pendleton has more than 125,000 acres, 17 miles of coastline, 2,600 buildings, and more than 500 miles of roads. It is home to about 40,000 Marines and their families, 1,100 distinct species of plants and animals, and 18 threatened or endangered species.

CAMP PENDLETON TRIVIA QUESTIONS

1. What year was Camp Pendleton built? _____
2. What is the Spanish word for cowboys? _____
3. Who was our President the year Camp Pendleton was built? _____
4. How many distinct species live on Camp Pendleton? _____
5. How many of those species are threatened and endangered? _____

* Bonus question: Use your answer to question number 1 and do the math! How old is Camp Pendleton?





Color Me!



Did you know?
The Bald Eagle isn't really bald.
It has white feathers on its head.

Color Me!



Did you know?
Semper Fidelis, the Marine Corps motto,
means Always Faithful.





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E	N	E	R	G	Y	R	S	E	S
R	N	E	R	O	R	E	N	V	N
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E	V	R	E	S	N	O	C	E	C
C	O	N	S	E	R	V	E	S	C

PLASTIC BOTTLES	<input type="checkbox"/> REDUCE	<input type="checkbox"/> REUSE	<input checked="" type="checkbox"/> RECYCLE
USED TOYS	<input type="checkbox"/> REDUCE	<input checked="" type="checkbox"/> REUSE	<input type="checkbox"/> RECYCLE
WATER	<input checked="" type="checkbox"/> REDUCE	<input type="checkbox"/> REUSE	<input type="checkbox"/> RECYCLE
BOOKS	<input type="checkbox"/> REDUCE	<input checked="" type="checkbox"/> REUSE	<input type="checkbox"/> RECYCLE
GLASS	<input type="checkbox"/> REDUCE	<input type="checkbox"/> REUSE	<input checked="" type="checkbox"/> RECYCLE
NEWSPAPER	<input type="checkbox"/> REDUCE	<input type="checkbox"/> REUSE	<input checked="" type="checkbox"/> RECYCLE

[illegible]

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

Camp Pendleton's Wild Side



MCB Camp Pendleton is home to a lot of wildlife.
Can you match the name of the species to the picture?

Draw a line from the picture to its name.



ARROYO TOAD

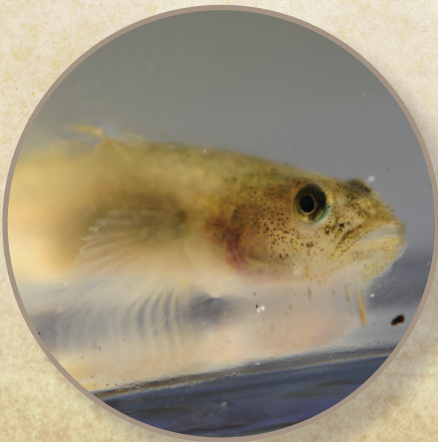
TIDEWATER GOBY

BISON

SOUTHWESTERN WILLOW
FLYCATCHER

PACIFIC POCKET MOUSE

WESTERN SNOWY
PLOVER





For copies of this Activity Book, please contact:
Environmental Security Department, Training Section
MCB Camp Pendleton, 760-725-9775