

Expedition Days Online

Lost in Space and Time

Secrets of the Sonoran Desert

Study Guide

Student name: _____



EXPEDITION
DAYS



MCDOWELL
SONORAN
CONSERVANCY

Have You Ever Been to the Sonoran Desert?

Goal: Explore where you have been in the Sonoran Desert.

Instructions:

I'm from the future and have just landed in the Sonoran Desert! Look at the map. Have you ever been to the Sonoran Desert?

1. Color on the map to show all the places you have been or would like to go to.
2. In the box below write a story about your favorite place in the Sonoran Desert. Why do you like it so much? Or write a story about why you would like to visit the Sonoran Desert.



You can continue your story on page 24

Location Puzzle

Goal: Explore different locations in the Sonoran Desert.

Instructions:

Maps are very useful tools and now we always have access to them via our computers and phones! You can put in an address on a map OR you can put in GPS (global positioning system) coordinates (numbers) for a specific location. A GPS coordinate tells you where you are on the earth in terms of latitude and longitude.

Watch the “where am I?” video, then click on the GPS numbers in blue to view these coordinates on a map. When viewing the map, you can click on the box in the bottom left corner to view a satellite image of the location. Do these locations match my description of where I am? Fill in the chart below with a description of each location (what does it look like? What do you see on the map?).

My location: 33.69?3?0, -111.?036?0

Location	Description	Does it Match?
33.69 <u>4370</u> - 111. <u>903690</u>		
33.69 <u>9360</u> - 111. <u>003690</u>		
33.69 <u>5350</u> , - 111. <u>803610</u>		
33.69 <u>1310</u> , - 111. <u>703620</u>		
Can you guess who Tom is?		

Geological Timeline

Goal: Learn about different animals in different periods.

Instructions

Read the given descriptions of the 6 images in the timeline as you figure out the geological timeline of these animals.

Species and Description <i>(Trilobite, Woolly mammoth, Eoraptor, Humans Brachiosaurus & Stegosaurus, Tyrannosaurus & Triceratops)</i>	Position in Timeline	Letter in RED

Rearrange the letters to find out the name of the Arizona state dinosaur!

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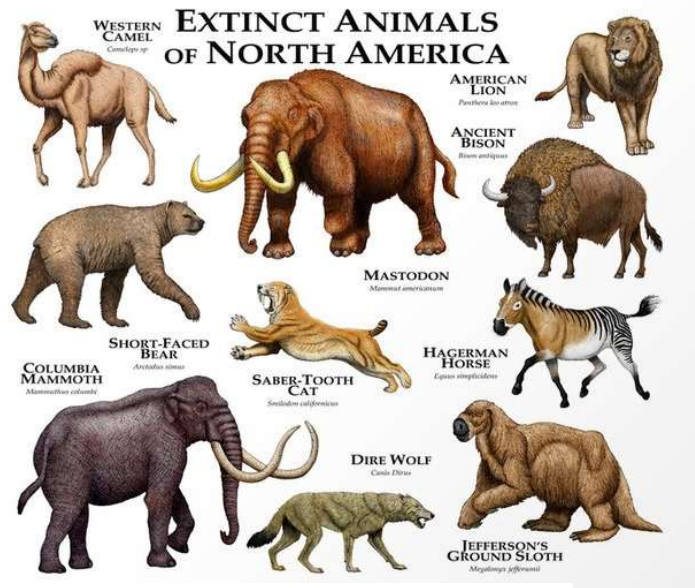
Ice Age!

Goal: Learn about the ice age.

Instructions

As you go through this puzzle, track your answers below then create your own drawing of the Ice Age.

The woolly mammoths lived during the Ice Age. What animal do they look like?



Credit: Wildlife Art by Roger Hall

Scientists believe that the woolly mammoth went extinct when the climate became too warm. What do you think the landscape looked like in the Ice Age?

Draw your landscape below (there are extra pages at the back of the study guide):

Snow in the Desert

Goal: Learn why we should protect our deserts.

Instructions

Write down your answers as you complete the puzzle.

1. What do all deserts have in common?

2. Where are the Polar Deserts?



Photo: Peter Layt

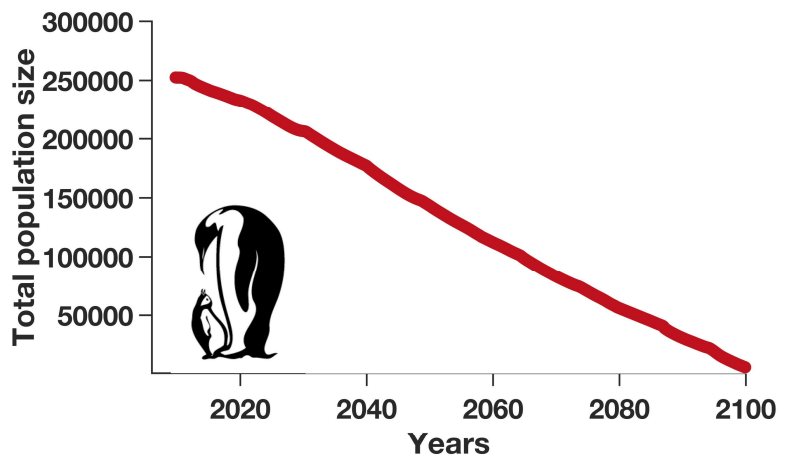
Penguins are adapted to living in the Antarctic. They have special feathers that keep them warm and waterproof in cold waters. They also have thick skin and a layer of blubber that keeps them warm.

But the climate is changing and the temperatures and amount of rainfall around the earth is changing. Over the last 20 years, it has been getting hotter and drier. We call this climate change. For more information on Climate change and fun activities, go to this link: <https://climatekids.nasa.gov/climate-change-meaning/>

If the climate continues to change it could get too warm for penguins; they could go extinct. Look at the graph, it shows us what could happen if we don't stop climate change.

According to this graph, what year will penguins go extinct?

What will happen to penguins if we do not stop climate change.

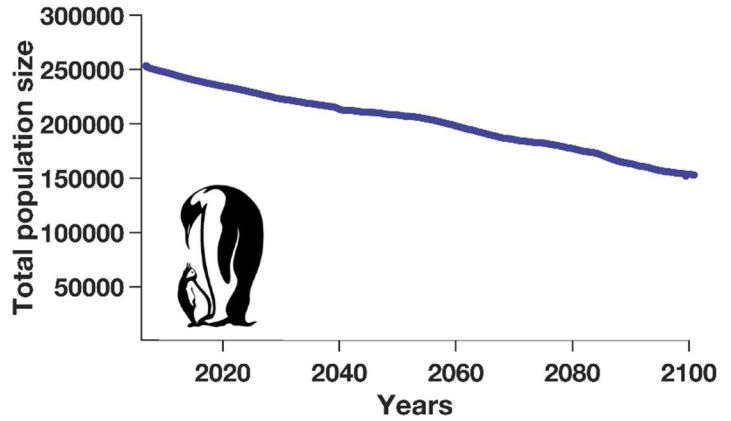


<https://www.britannica.com/explore/savingearth/emperor-penguins-could-march-to-extinction-if-nations-fail-to-halt-climate-change>



Now look at this graph, this shows what will happen if we try to slow climate change.

If we try to slow climate change, how many penguins, to the nearest 5000, will there be in 2100? Discuss your thoughts with your friends.



<https://www.britannica.com/explore/savingearth/emperor-penguins-could-march-to-extinction-if-nations-fail-to-halt-climate-change>

Every day is earth day!

We can all try to slow the rate of climate change. Have a look at this poster and see what you can do!

Do you have any other ideas about things we could do?

 EXPEDITION DAYS

Every Day is Earth Day!



THINGS YOU CAN DO:

- Don't litter**
- Turn off lights**
- Unplug chargers**
- Recycle**
- Buy less stuff**
- walk, bike or share a ride**
- Don't leave water running**
- Set an example for others**
- Donate old toys and clothes**

Do I Have Enough Water?

Goal: Calculate the amount of water we should take with us when we spend time out in the desert.

Instructions

Follow along in the escape room website and watch the video. Use the following space to help you calculate your answers.

How many hours am I awake?	
If I am awake for 15 hours and need to drink 30 cups of water, how many cups do I need to drink per hour?	
How many bottles of water do I need to drink in 1 hour?	
How many bottles should I drink in 2 hours?	
Do I have enough water for two hours if I have one water bottle with me? Circle your answer.	
YES	NO

How do You Survive?

Goal: Calculate the amount of water needed in two hours.

Instructions

Follow along in the escape room website and once you have completed the “We can survive” section, complete the following activity.

Animals in the Sonoran Desert do not need to drink water all the time. Some of their water can be found in the food that they eat.

Draw your favorite desert animals with their food

A large, empty rectangular box with a thin black border, intended for drawing desert animals and their food.

There are extra pages at the end of this study guide for additional ideas!

What Not to do

Goal: Learn how to be safe in the Sonoran Desert.

Instructions

Follow along in the escape room website and once you have completed the “What not to do. Staying safe in the Sonoran Desert” section, then complete the following activity.

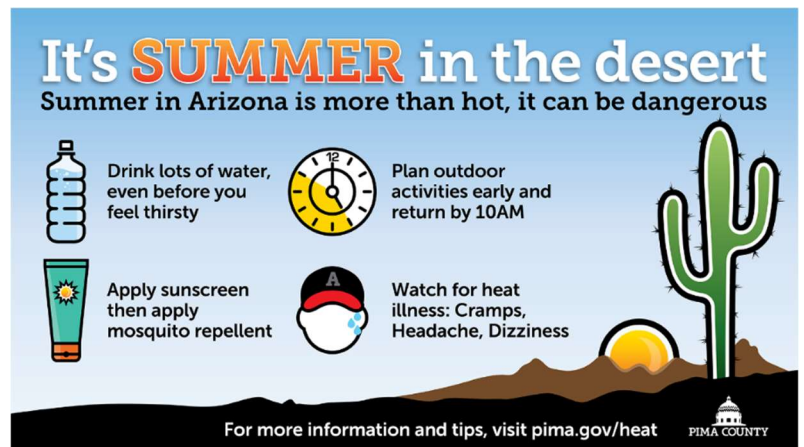


Image: Pima County

1. What 3 top tips do you have for someone that wants to go hiking in the Sonoran Desert? Share your tips with your friends, did you come up with the same top tips?

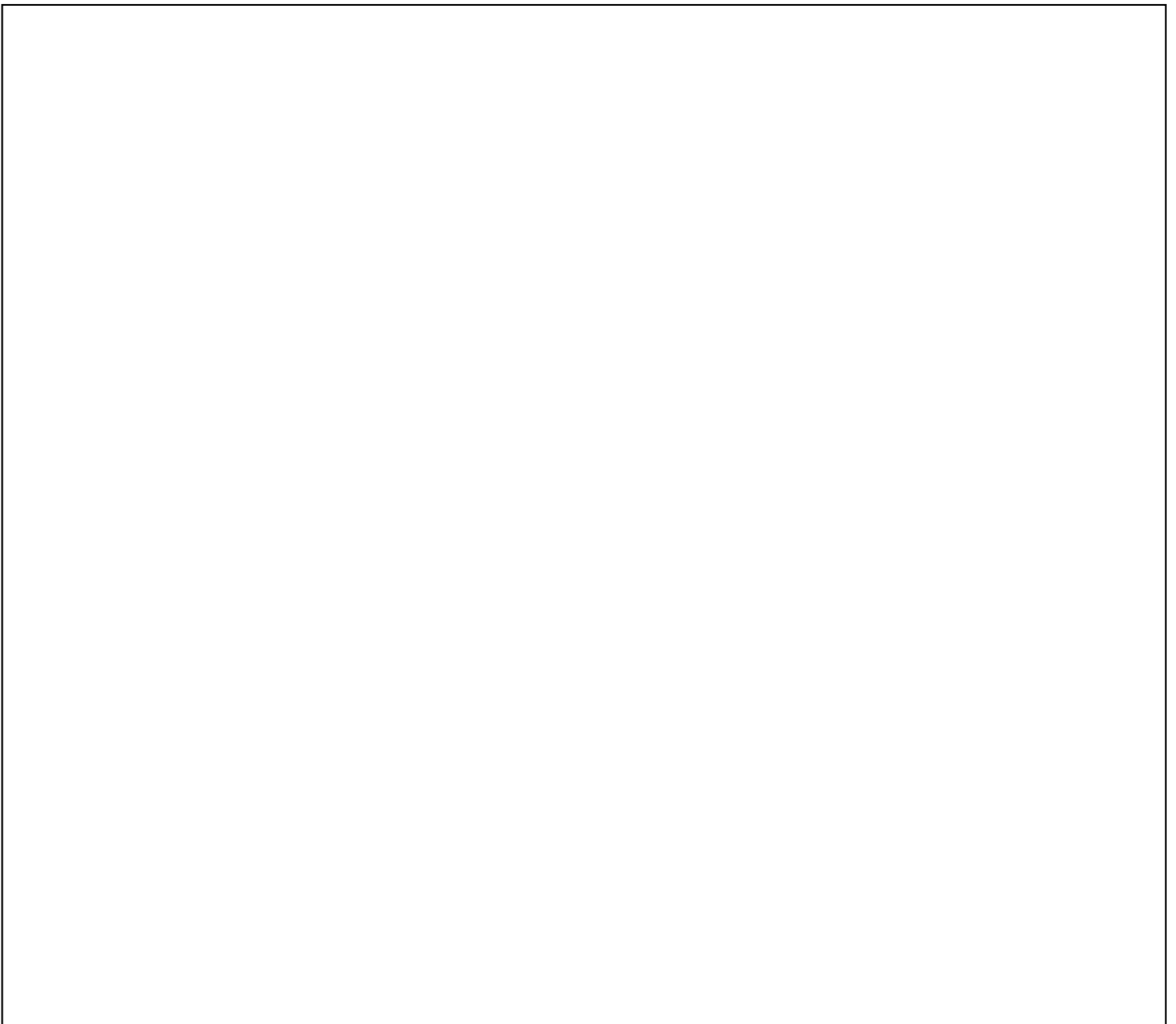
2. There are lots of ways we have adapted to living in the Sonoran Desert. List or write about, some of the things you do or could do to stay cool in the summer heat.

Animal Shapeshifters

Goal: Learn how animals have adapted to the Sonoran Desert.

Instructions

- After watching the video and completing the Same, Same, but Different puzzle, complete the following activity.
- What do you think your favorite animal will look like in the future?
- Draw your favorite animal and show how it had adapted to living in a hotter and drier desert!

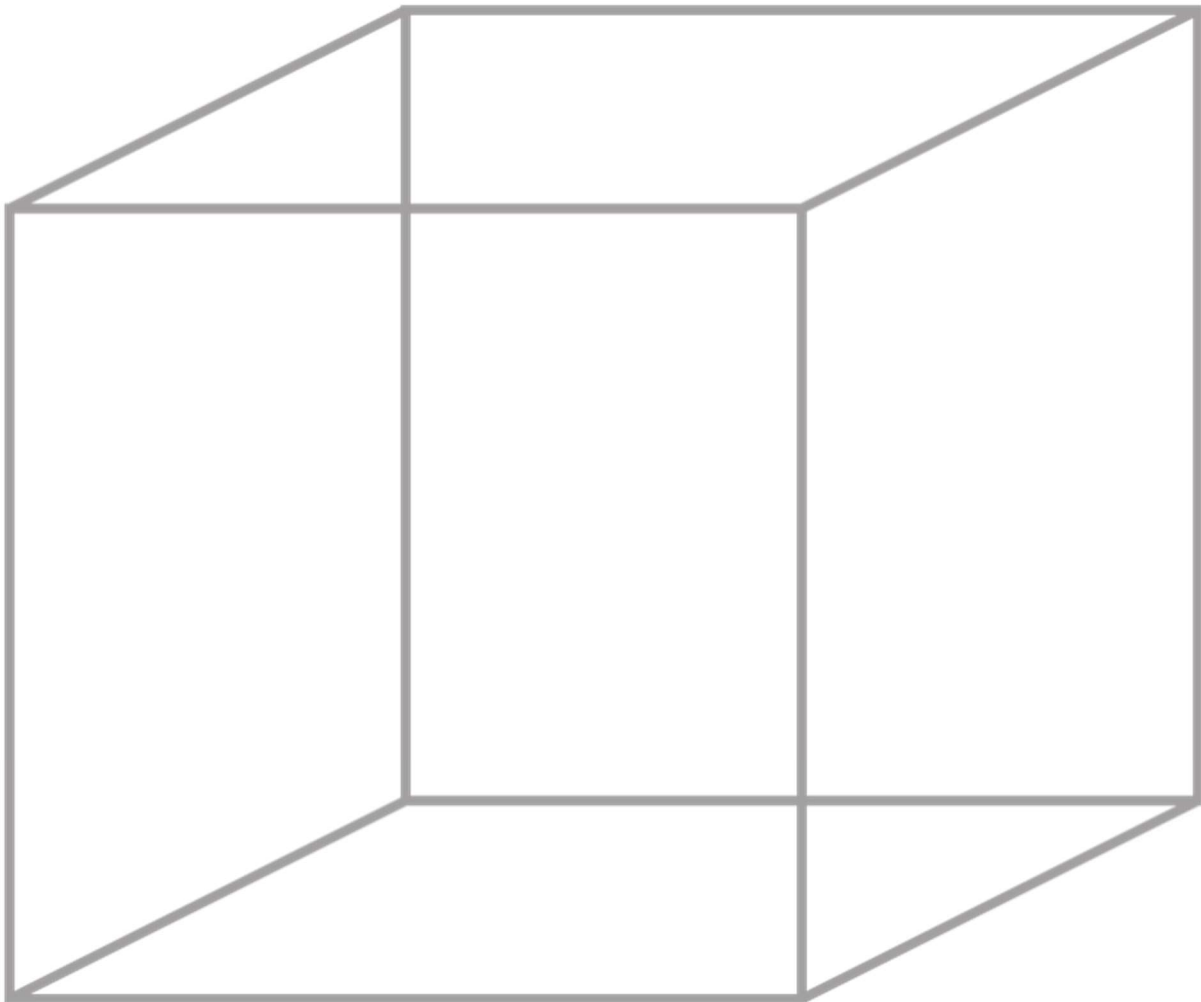
A large, empty rectangular box with a thin black border, intended for a student to draw their favorite animal and show how it has adapted to a hotter and drier desert environment.

Pack Rat Time Capsule

Goal: Learn about life in different periods.

Instructions

- Follow along in the escape room website and once you have completed the “pack rat time capsule” section, complete the following activity.
- A pack rat midden is a pile of debris. It's sort of like a time capsule that was created by rodents! Just like me, the pack rat likes to collect things!
- Imagine that you are a pack rat and want to make a time capsule for people to find in the future. What Items do you think people from the future would like to find?
- List or draw your pack rat time capsule, then share your drawing and ideas with friends!



Monsoons: Dust, Water, and Heat

Goal: Learn about the weather in the Sonoran Desert.

Instructions

Follow along in the escape room website as you complete the puzzles for the monsoon section and answer the following questions.

1. What did the reporter call the dust storm?

2. What type of flood was described by the reporter?

3. How did the reporter describe the heat?

4. What would you do if a monsoon storm was coming?

Draw a Monsoon Safety message or write a short Monsoon Safety Alert to share with friends and family (there are extra pages at the back of the study guide).

Water Catchment

Goal: Learn about water catchments.

Instructions

Follow along in the escape room website to complete this puzzle.

1. On the picture, draw where you would attach the pipes.
2. Design your own water catchment for birds or reptiles in the space below!



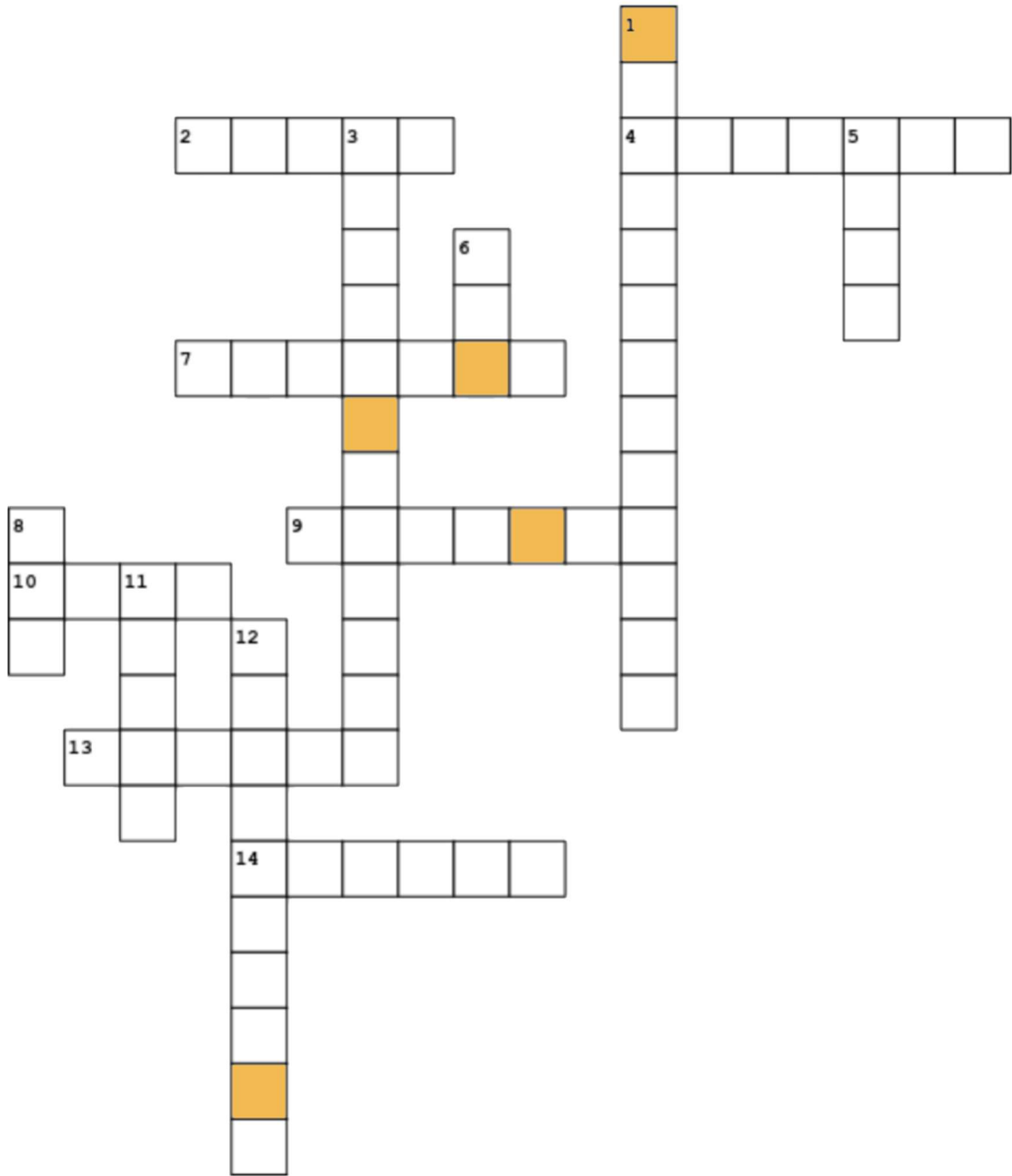
Data Crunch

Goal: See how much you have learned!

Instructions

Wow, what a journey! Solve this crossword puzzle and write the hidden word in the yellow squares.

Words Across	Words Down
2. What was the type of flood we talk talked about called?	1. What do we call animals that have adapted to the desert, but look like other animals?
4. Where is water stored underground?	3. What is the name of the Arizona dinosaur?
7. When it is very very hot in the desert, we call this _ _ _ _ _ heat.	5. Animals in the desert don't always need to drink water, they can also get water from their _ _ _ _.
9. What is the name of an animal that makes a time capsule (no spaces)?	6. What was the first name of the first person to climb the trail at our location?
10. I should drink 30 _ _ _ _ of water a day.	8. Woolly mammoths roamed the earth during the _ _ _ age period.
13. You should never try to drink water from a _ _ _ _ _.	11. What are the cold deserts called?
14. What do we call a dust storm?	12. We collect water in water _ _ _ _ _ _ _ _ _ _ to provide water for wildlife.



The letters in the yellow squares make a word and the word is about you!

Every Day is Earth Day!

We have learned a lot about the Sonoran Desert and our relationship with this environment.

Will you help look after the earth? Tick off the things you could do and share your ideas with your friends!

You could even make your own Every Day is Earth Day poster!

There are extra pages at the end of this study guide.



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Continue your story from page 2, here:

A large, empty rectangular box with a thin black border, occupying most of the page. It is intended for the student to continue their story from the previous page.

Extra page for your Animal Drawing

Extra page for your Ice Age drawing

Extra page for your Monsoon Safety message

Extra page for your Every Day is Earth Day poster