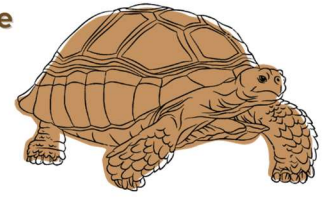




DESERT INDOORS

Environmental education activities for students at home



Module: *Protecting the Desert Tortoise!*

Topic: Desert conservation and protection advocacy

Objective/Learning Goal: Children will learn more about the desert tortoise and understand how to protect them.

Glossary:

- **Adaptation** - A change or the process of change by which an organism or species becomes better suited to its environment.
- **Carrying Capacity** - The number or quantity of living things that an environment can support without degradation of the habitat.
- **Citizen Science** - The collection and analysis of data relating to the natural world by members of the public, typically as part of a collaborative project with professional scientists.
- **Habitat** - The natural home or environment of an animal, plant, or other organism.
- **Predation** - The preying of one animal on others.
- **Reabsorb** - To take-up something previously secreted or emitted.

Materials: pencil, access to internet or Wi-Fi, videos
<https://www.youtube.com/watch?v=alOh7GUXe3U> and
<https://www.youtube.com/watch?v=kIZ3153RT7w> .

Indoor and/or Outdoor Activity:

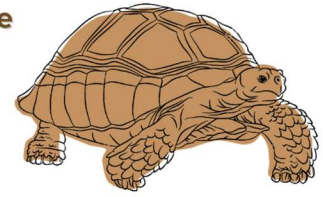
Build Background Knowledge – Ask your kids what they already know about the desert tortoise. What ways can they think of that help protect the tortoise? What can we do as a collective to save the tortoise?

Because of the relative lack of moisture in the Mojave Desert many plant and animal species grow slowly. Lack of access to water resources lowers the number of animals and plants that can be sustained within the **habitat**, this is called **carrying capacity**. Animals have **adapted** by being very water conscious. Species like the desert tortoise, the roadrunner, and many snakes can *reabsorb* water from their feces. Tortoises use their bladders to store most of their water, which is why you never want to pick one up! The desert tortoise (*Gopherus agassizii*) is an herbivorous forager or plant eater and gets the water they need by consuming plants. Thanks to their powerful front legs, the desert tortoise can excavate burrows, where they spend around 95% of their lifetimes. These burrows also become a shared home to other animal species like rodents, frogs, lizards, and insects.



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Did you know:

- A tortoise spends most of its time in burrows to regulate its body temperature and protect it from water loss.
- Agassiz's Desert Tortoise (*Gopherus agassizii*) has been federally protected as a threatened species since 1990. But many experts agree that they are in fact critically endangered and in need of reclassification.
- They can live about 50 to 80 years and can't reproduce until they are between 12-20 years old!
- Their diet primarily consists of grasses, but they eat herbs, annual wildflowers, and cacti fruit.
- A tortoise uses their bladder to store water to survive in the desert heat (that's why we don't want to move them, they'll get scared, pee and then can die from dehydration).
- Their gender is determined by their nest temperature.
- Young desert tortoises will occasionally come out to feed or drink water in the dead of winter. They can do this because their small bodies take less time to heat up than adults.
- Tortoises can have different eye colors! There is a dominant eye color, brown, but tortoise can have less common eye colors too.
- Tortoises dig their own drinking bowls in the soil and remember exactly where they are so that when it rains, they rush to it for a drink!
- Tortoises have multiple summer and winter burrows that they use.
- Female tortoises can lay fertile eggs for several years after mating with a single male. This ensures that she can produce young each year without depending on male contact.
- If there is no water available, desert tortoises will sometimes eat wet mud and extract the water that way.
- Male desert tortoises have the highest testosterone levels of any living vertebrate, making them the most aggressive and territorial animals on the planet.

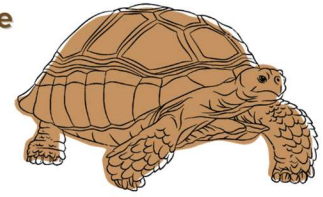
Hatchlings (baby tortoises) have shells that won't harden for about 5 years! That means when they are very young, they are susceptible to **predation** from other animals. This includes coyotes, kit foxes, snakes, and ravens.

Did you know that driving off designated routes can harm desert tortoises? Knowing how to minimize your impact on the environment when you ride is critical, particularly in ecologically sensitive areas like the California desert. Illegal Off-Highway Vehicles (OHV) use can crush slow-growing soil crusts and native plants, injure animals, and damage their fragile homes. The



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Mohave ground squirrel and desert tortoise are just two of the species that are partially threatened by off-trail OHV riding. It is important to stay on designated trails to help support the biodiversity of the California desert.

Why is the desert tortoise important? With your learning partner, discuss why the desert tortoise is an important part of the ecosystem. Discuss what part they play in their habitat and what tortoises provide to other plant and animal species.

What can you do as a student to help protect the tortoise? It might seem like a daunting question - after all you're a student and not an adult right?! But you must remember that you are the next generation of scientists, land stewards, and conservation advocates. You can start learning now and come up with ideas that you can share and inspire other students and adults. Brainstorm some ideas together, tell your learning partner your ideas. Maybe they will come up with different solutions.

You can learn more about the tortoise in this video by MDLT Natural Resources staff and <https://www.youtube.com/watch?v=kIZ3153RT7w> or by watching this video from a long-time tortoise biologist <https://www.youtube.com/watch?v=aIOh7GUXe3U>

Follow-up/ Discussion - What did you learn? How do you feel about being able to participate in projects or work that helps this threatened species? How do you feel about being a student that can help protect the desert?

On a walk, look for the plants that desert tortoise love to eat, like fiddleneck! And watch out for our friend, the tortoise.

Further Reading and Resources –

Bureau of Land Management: *The Threatened Desert Tortoise*
https://www.blm.gov/sites/blm.gov/files/documents/Nevada_SNDO_Desert_Tortoise_Fact_Sheet_0.pdf

Desert Tortoise Council: <https://deserttortoise.org/>

Joshua Tree National Park: *Desert Tortoise* <https://www.nps.gov/jotr/learn/nature/tortoise.htm>

The Living Desert Zoo: *Time to Talk Trash* <https://www.livingdesert.org/learn/in-the-community/healthy-desert-education-project/>

Mojave National Preserve: Desert Tortoise <https://www.nps.gov/moja/learn/nature/desert-tortoise.htm>

San Diego Zoo: *Animals and Plants: Desert Tortoise-*
<https://animals.sandiegozoo.org/animals/desert-tortoise>

U.S. Fish & Wildlife Service: *Mojave Desert Tortoise*
https://www.fws.gov/nevada/desert_tortoise/dt/dt_life.html

Name: _____ Date: _____

KEEP THE TORTOISE SAFE!

Can you ride on the trails and steer clear of the tortoise burrow?

