



DESERT INDOORS®

Environmental Education Activities for Students and Families at Home

(This activity was created in accordance with shelter-in-place. Remember to practice social distancing and stay local.)

Module: *The Desert Tortoise, the Arts, and You!*

Topic: Desert conservation and protection advocacy

Objective/Learning Goal: Children will learn more about the desert tortoise, then demonstrate their learning in a creative and artistic way.

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.
- **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: paper or notebook, pencil, pens, crayons, or painting supplies, or camera.

Indoor and/or Outdoor Activity:

Build Background Knowledge - Ask your kids what they already know about the Desert Tortoise? What do they know about desert habitats? Why are tortoises an important part of the ecosystem? How can they demonstrate their scientific understanding in a creative way?

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 plants and animals that can be sustained within the *habitat*, this is called *carrying capacity*. Animals have *adapted* by being very water conscience. Species like the desert tortoise, the road runner, 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 that they spend around 95% of their life inside. These burrows also become a shared home to other animal species like, rodents, frogs, lizards, and insects.

Did you know that tortoises:

- spends most of its time in burrows to regulate its body temperature and protect it from water loss.
- are a federally protected species and are considered a threatened species.
- can live about 50 to 80 years and can't reproduce until they are between 12-20 years old!
- diet primarily consists of grasses, but they eat herbs, annual wildflowers, and cacti fruit.
- use 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).
- gender is determined by their nest temperature; this means warmer temperatures will result in more males being born and cooler temperatures more females.
- the young 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.
- *Gopherus agassizii* is classified as a threatened species, but many experts agree that they are in fact critically endangered and in need of reclassification.
- can have different eye colors! There is a dominant eye color much like how brown is the dominant color in people as well as less common eye colors.
- 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.
- have multiple summer and winter burrows that they use.
- females 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, the kit fox, snakes, and the raven.

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.

You can learn more about the tortoise by watching MDLT's Land Steward Luke, talk about the Desert Tortoise <https://www.youtube.com/watch?v=kIZ3153RT7w> or by watching this video from biologist Kelly, <https://www.youtube.com/watch?v=alOh7GUXe3U>

Activity-

Art and science are not mutually exclusive, meaning they are not necessarily always separate (think about fractals). The charisma of some animals that captivate us and inspire us to learn more can be expressed through drawing, photography, and storytelling. Now it's time to be creative and show how nature inspires you! Students can demonstrate their scientific understanding through a variety of artistic mediums. They can create their own poem about the desert tortoise. They can show what they know by painting or drawing the tortoise's habitat or the desert tortoise itself. Maybe they prefer photography and want to demonstrate their knowledge through a photo essay or collage. There are so many ways for students to be creative while explaining scientific understanding through artistic expression.

Follow-up/ Discussion - *What did you learn? How do you feel about being able to show your understanding of Desert Tortoise habitats and the tortoise as a threatened species through artistic expression?*

We would love to see how you creatively express your knowledge of the desert tortoise. Parents can enter their student in a Desert Tortoise Art contest by posting student art on MDLT's Instagram page- @mojavedesertlandtrust. All methods of artistic expression are welcome to participate.

This contest runs from October 18-21, 2021. The winner will be announced on October 22nd. Email Mary mary@mdlt.org for more information or questions about the contest.

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