

Wild Lesson



Title:

Adaptation – Special Reptile Scales

You  WuerchsWildlife Channel Video:

[Texas Horned Lizard](#)

Objective:

Students will observe the spines of a horned lizard to understand the purpose of their adaptation to protect them from predation.

Main Idea:

The spines of a horned lizard make them less likely to be eaten by predators that usually include lizards in their diet.

Opening:

Texas Horned Lizards live in the Lone Star State and range north into Kansas, west into New Mexico and south into Mexico. This area is also the home of birds, mammals and reptiles like Road Runners, foxes and Coachwhip snakes that eat lizards. Horned lizards are not fast runners and are unable to escape swift predators. They rely on several things to keep from being eating including their spines which make them a painful meal.

Key Video Frames:

0:08 - 0:12 Effort # 01 to avoid being eaten (lizard recognizes camera operator as a threat) - Attempt to escape by running in a zigzag pattern for short burst.

0:12 - 0:14 Effort # 02 - An abrupt stop and freeze in an effort to “disappear” by using its pattern and coloration to blend into the surroundings.

0:15 - 0:22 Profile focusing on the head spines. Note that they are positioned in such a manner that they can freely turn their heads without

poking their own necks. Effort # 03 - At the end of this segment it raises its head to present its last line of defense – its spines.

0:23 - 0:30 Pan of the length of the body. Note the varied sizes of the spines and how they are arranged on the upper side of the body and limbs and in rows along the sides. The pattern and coloration is nicely displayed as well.

0:31 - 0:35 Portrait revealing the small, uniform off white scales of the throat and chest. The neck is armed with a spiny collar and accented with a band of yellow. Not needing to be camouflaged on its underside, it uses these bright colors for visual communication with others of its kind. They have good vision and see in color.

Further Discussion and activities:

(Use links for images for students to see topic examples)

- Name some other types of reptiles than lizards.
 - Alligators, crocodiles, snake, tortoises, turtles, tuataras (<http://en.wikipedia.org/wiki/Tuataras>) and dinosaurs.
- Name some other scale adaptations that reptiles have.
 - A turtles shell creates a “safe place” for them wherever they go.
 - “Eyelash” scales of some snakes to protect their eyes from sunlight in the desert (http://en.wikipedia.org/wiki/File:Crotalus_cerastes_mesquite_springs_CA-2.JPG) or water drops in the rainforest (<http://www.eyelashvipers.com>).
 - The sail fins of dinosaurs (Dimetrodons) - possibly for regulating body temperature by capturing solar heat or releasing too much body heat. <http://en.wikipedia.org/wiki/Dimetrodon>
- Are there spiny lizards outside of North America?
 - Yes, the Moloch or Thorny Devil of Australia is very similar in its habits and design. Spiny armor on slow moving lizards is a successful strategy for survival across the globe. http://en.wikipedia.org/wiki/Thorny_Devil
- Draw a range map of Texas Horned Lizards.
 - http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_0038.pdf
- Draw the head shape of several species of horned lizards for comparison.
 - http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_0038.pdf

Vocabulary:

- **Adaptation** - Something that an animal does or has that is different than most others of its kind that helps it survive.

- **Lizard** - A reptile that is covered with scales and (usually) has moveable eyelids, ear openings, a tail and four limbs that are clawed.
- **Horned Lizard** - A member of the North American Spiny Lizard family Phrynosomatidae. They are reptiles, so the common name Horned Toad is incorrect.
- **Predator** - An animal that hunts, kills and eats other animals.
- **Reptile** - Animals in the class Reptilia including crocodilians, snakes, lizards, turtles and tuataras that are covered in scaly skin, are “cold blooded”, breathe air and lay eggs with shells. Dinosaurs are reptiles.
- **Scales** - The small, rigid plates that create the hard, protective skin covering of reptiles. They sometimes overlay each other and are also known as scutes.
- **Spines** - Specialized scales that project outward from a reptile’s skin, coming to a hard, sharp point.

Lesson Closure:

Horned Lizards are reptiles that have special scales that are adapted to form spines that keep them from being eaten by predators.