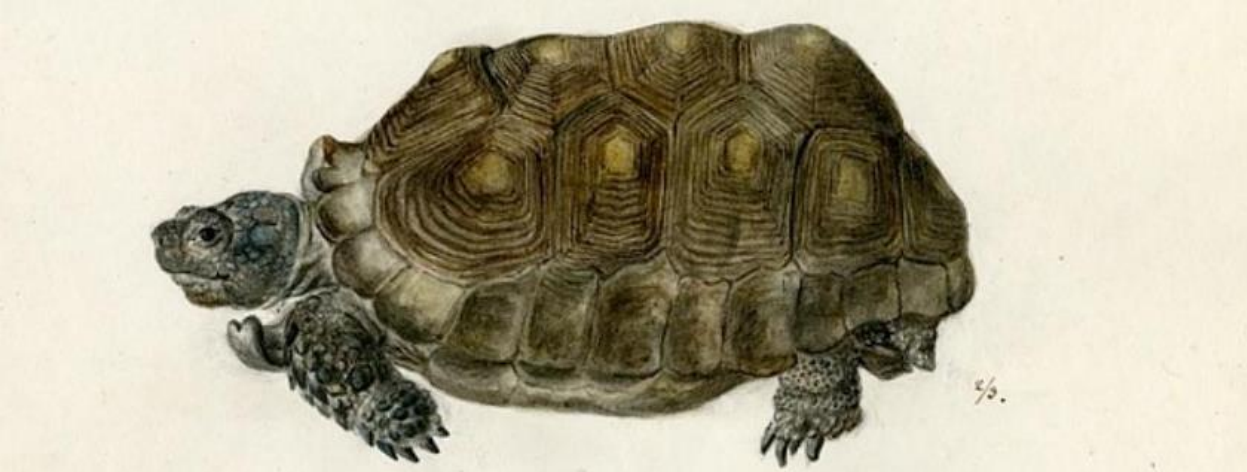
What's in a Name?



Essential Question: You have a name that is unique to you. You have a first and last name. Some people have a middle name. Every living thing has only one name that is unique to them. Do you know how animals and plants get their names?

Objectives:

- Learn about scientific names and binomial nomenclature
- Learn about historic contributions of scientists
- Investigate the connection of visual art to other disciplines

Grade Level: Upper Elementary: Third Grade through Eighth Grade

Subject: Science

Duration: 30 minutes

Common Core Standards: 4.SL.1c

State Standards: 4th grade Science TEKS 3 (C) 4th grade Art TEKS 3 (D)

Teacher Preparation:

- Review the background information.
- Gather the following materials:
  - Print Berlandier's drawing of the Texas tortoise
  - Colored pencils
  - Drawing paper

Background Information:

<u>Scientific names</u>

Every species is given a two-part scientific name – Genus and species. This international system is called binomial nomenclature, and it ensures that every scientific name is unique. Scientific names allow people throughout the world to discuss specific species. For example, if Mexican and American scientists are studying Texas tortoises, they both use *Gopherus berlandieri*, the Texas tortoise's scientific name.

The genus describes the animal's relation with other animals. The Texas tortoise is in the Gopherus genus. Tortoises in the Gopherus genus are referred to gopher tortoises. The species name differentiates each type of tortoise in the genus. A Texas tortoise's species name is *berlandieri* because it was discovered by Jean Louis Berlandier.

Jean Louis Berlandier

Jean Louis Berlandier was born before 1805 between France and Switzerland. He studied botany under De Candolle and was most likely a pharmacist's apprentice. Berlandier collected plants and drew scientific drawings of animals during the Mexican Boundary Commission survey (1827-1829).

After the survey, Berlandier lived in Matamoros, Tamaulipas, Mexico. He got married and became a physician. He also continued adding to his scientific collections.

Berlandier was a captain and cartographer in Mexico's Army of the North. He also served as General Arista's aide-de-camp during the Battles of Palo Alto and Resaca de la Palma (May 8 & 9, 1846). Afterwards, he oversaw the hospitals in Matamoros.

After the U.S.-War ended, Berlandier assisted the International Boundary Commission to define the border between Mexico and the US.

Afterwards, he returned to Matamoros. In 1851, he drowned in the San Fernando River.

Throughout his lifetime, Berlandier identified many species. There are 16 species with the species name *berlandieri*.

Important Vocabulary Terms with Definitions:

- Aide-de-camp: Assistant to a military officer
- Binomial nomenclature: A system of naming plants and animals in which each species is given a name consisting of two terms of which the first names the genus and the second the species itself
- Cartographer: A person who makes maps
- Genus: A category of classification in biology that ranks between family and species, contains related species; Is named by a capitalized noun formed in Latin
- Species: A category of living things that ranks below a genus, is made up of related individuals able to produce fertile offspring, and is identified by a two-part scientific name

Procedure:

1. Show students a picture of a soft drink bottle or can. Ask which name is correct: Soda, pop or soft drink.
2. Tell students that all three names are correct. Discuss how that can be confusing.
3. Discuss how an animal is sometimes called by different names. Scientists need to use the same name to make sure they are talking about the same animal.
4. Ask students if they know how they got their first name and if they know what it means.
5. Tell students your last name tells how you are related to other people. For example, if your last name is Gonzalez, you are related to others with the last name Gonzalez.
6. Tell students that, just like you, each animal species has a unique name with two words. This name is called a scientific name. Scientific names use binomial nomenclature because there are two words.
7. Compare scientific names and binomial nomenclature to a student's first and last name. Explain that scientific names are different because the first word tells how they relate to other species and the second word describes why it is different than other species.
8. Ask students which name is like a last name and which is like a first name.
9. Tell students that the genus is always capitalized, and the species is lowercase. Both the genus and species are written in italics.
10. Show students Berlandier's drawing of the Texas tortoise. Tell them the scientific name is *Gopherus berlandieri*.
11. Tell students about Jean Louis Berlandier.
12. Discuss how they think Jean Louis Berlandier felt when he first saw a Texas tortoise.
13. Tell students to try to draw the Texas tortoise the same way as the drawing and to label their drawing with the scientific name *Gopherus berlandieri*.
14. Ask students to present their drawing to the class and to use adjectives when describing their drawing.
15. Tell students to create their own animal and to write a scientific name for their animal. Have them write a few adjectives to describe their drawing.
16. Ask students to present their drawing to the class and to use adjectives to describe it
    - Berlandier's drawing

Assessment: Assess the student's performance by their participation in class discussions.

Support for Struggling Learners: Write key words on the board. Adapt teaching methods to cater to different learning levels.

Enrichment Activities: Tell students to draw an animal that they made up and give the animal a scientific name. Tell them to write why the animal has that name.