

Another Wednesday email highlighting an organism found here at LSW, the **North American Racer, *Coluber constrictor***. This is a rather unique snake which has a couple different color patterns throughout its life. When young, the snake looks like any other midwest colubrid family snake: brown and light gray mottled pattern. When young these snakes are very difficult to distinguish between rat snakes, bullsnakes, and racers unless you examine the pattern on each young snake. Below the quick story is a link to another Lesson with Levi in which he handles the North American Racer.

Quick story: a few years ago when Mr. Marco Pedroza was one of our associate principals. I invited him to attend one of my Biology classes outside for a lab. As we were walking among the prairie grasses sampling insects when a student shouted “Mr. Bittle a snake!” It just so happens that Mr. Pedroza was right next to that shouting student and Marco ran down the hill, not pausing until he reached the road. Pedroza instantly had the “not-my-job” and “hell-no” all wrapped into one facial expression. Apparently Pedroza does not like snakes, at least up close. The students had a good laugh at that one because all of my students ran *toward* the snake rather than away, leaving Pedroza standing on the road alone. His quick retreat generated some good conversations about respecting personal likes, dislikes and boundaries. The snake that day just happened to be a large adult North American Racer, greenish-blue coloration.

Description:

Length: 20 - 75 inches

Back color: olive green to greenish blue

Belly color: pale yellow

Diurnal: active during the day, especially the heat of the day when many snakes are seeking shelter from the strong rays of the sun

Speed: 4-6 mph (which is fast for an animal with no legs on land)

Location: found in grasslands, ag fields, open woodlands and right here at LSW

[Lessons with Levi VIDEO: see a live North American Racer and learn some fun facts too!](#)

Coloring Sheet for Kids: [LINK](#)

Science!

Snakes have a long history within the sciences through research of movement, adaptations and venom analysis. However most children are fascinated by the movement of snakes since snakes have no external limbs. “How do snakes move?” tends to be a common question young people ask. There are about 4 different types of snake movement: *serpentine locomotion*, *concertina locomotion*, *rectilinear locomotion*, and *sidewinder locomotion*.

Serpentine: the body assumes a series of S-shaped flat loops and each loop pushes against any resistance it can find in the environment. This is that side-to-side motion most people are familiar with.

Concertina: this resembles an accordion. The tail and posterior (butt) part of the snake is anchored, then the rest of the body and head extend forward. Once extended, the head and front part of the body anchor and the rear part of the snake is drawn forward to the head. Repeating the motion looks like an accordion.

Rectilinear: this is really unique in animal movement as the snake can move in a straight line. The snake uses muscle contractions along the sides of its body similar to a caterpillar. Belly scales are critical for gaining traction on surfaces for this movement.

Sidewinding: desert snakes are known for this movement as they move in a sideways direction instead of straight forward. The snake lifts the front part of the body and moves several inches to the side, rests that part of the body on the sand keeping the rest of the body as a lifted loop. This motion continues along the snake’s

body allowing for minimal contact with the sand. Desert sands are typically so hot they would be lethal for any other snake locomotion.

Something Unique!

Scientists and engineers have been studying animal movement and developing autonomous robots to mimic those movements. The snake has been created in several mechanical forms with the hope of developing medical, industrial and personal applications for these uniquely shaped robots. Below is only ONE video out of many which can be found by simply searching robotic snakes. Enjoy.

<https://live.myvrspot.com/iframe?v=fOGY2YWJIZTEzMjQ2MmNlZjg2OWMzMjVkMGUwMDMwMjA>

Thank you and have a wonderful week.