4th Grade – Life Science: Structures

- Week 1
  - **Animals by Design -** Design an animal with special adaptations to help it survive. Draw your imaginary animal and label at least two adaptations that help the animal survive in its environment. You should then draw and label a map of where the animal is from. Finally, name the animal and write a fable about it.
  - **Adaptation Math -** Create an equation for each of the word problems below, using a symbol for the unknown number.
    - A cactus has spines to protect it from being eaten by desert animals, but the spines also allow the cactus to retain water in an environment with very little rainfall. If there are 32 cacti in a desert with 198 spines each, how many spines are there in all?
    - Migration is a behavior in which animals move from one environment to another during seasonal changes. Hummingbirds migrate south every year over a four-week period. If hummingbirds travel 32 kilometers per day, how many kilometers do they travel in total to get to their destination?
  - **Adaptations Myths** - Read one of the following fictional explanations for naturally occurring structures or behaviors. Determine an adaptive reason for the body structure or behavior addressed in the fable. (All stories can be found online.)
    - *"Why Raven's Beak Is Curved"*: This Native American story explains one version of how the raven's beak became curved.
    - *"Why the Possum's Tail Is Bare"*: This Native American story explains one version of why the opossum does not have a furry tail.
    - *"Narcissus"*: This Greek myth explain why the narcissus flower grows near water.
- Week 2
  - **Read literacy Article 2B: How Many Stomachs Does It Take? (link):** Answer the questions to help support the understanding of internal organs.
  - **Animal Discovery -** Research an animal using online resources and write a brief report of your findings. Consider and include the following:
    - The group the animal belongs to and types of food it eats and whether this makes it an herbivore, omnivore, or carnivore
    - The habitat and location(s) throughout the world in which it can be found
    - The external structures it has to help it survive in the wild
    - The internal structures it has to help it survive in the wild
    - Its potential predators

- Week 3
  - **Take Home Science Sheet (link): Observing the Great Outdoors**
  - **Read literacy Article 3B: Surviving the Desert (link):** Answer the questions to help support understanding of an organisms needs for survival.
- Week 4
  - **Read literacy Article 4B: Unusual Animal Senses (link):** Answer the questions to help further explore information processing in animals.
  - **Eye Researched This! -** Research eyes of the animal kingdom. Examples of research topics include the difference between diurnal and nocturnal eyes, compound and simple eyes, and any other interesting eye adaptations. Some animals to focus on include cats, owls, cuttlefish, mantis shrimp, bees, butterflies, chameleons, and jumping spiders.
    - Write a summary of their findings and include an illustration of the eye(s) they researched. Present your findings when we return.
- Week 5
  - **Read literacy Article 5A: Did You See That? (link):** Answer the questions to help support understanding of vision and the eye.
  - **Eye Measurements -** The average circumference of animal eyes are listed in bold below. Make a table like the one below, and enter the information provided. Convert each measurement into the other metric forms in the chart. Choose a couple of measurements from the table and write an expression to show whether those measurements are greater than, less than, or equal to each other.

Eye	mm	cm	km
Human		2.4	
Coyote	14		
Ostrich			0.00005
Colossal Squid	270		0.00027
Rattlesnake	8		
Moose			0.0004

  - **Innovators in Science –** Pick a person below, research and write about why they can be called an "innovator in science."
    - Hugh Herr - https://www.npr.org/2011/08/10/137552538/the-double-amputee-who-designs-better-limbs
    - Kevin Dzobo - https://nef.org/fellow/kevin-dzobo/
    - Hayat Sindi - http://www.unesco.org/new/en/natural-sciences/special-themes/science-education/inspiring-youth/inspiring-youth-hayat-sindi/