Lesson Plan Overview:
Grades 5-8
Jaws, Paws and Claws

SOL’s Covered:

- Science: 5.5b & c, LS.4d, LS.7a & b, LS.8b & e, LS.9c
- English: 5.1a, 6.1a, 6.2a-c, 7.1a-d, 8.1a & b

Post-Lesson and Pre-Zoo Visit Packet Available
SOL’S Covered in Packet:

- Science: 5.5b & c, LS.4d, LS.7a & b, LS.8b & e, LS.9c
- English: 5.1a & b, 5.3a-c & e, 5.8b-d & g, 6.1a, 6.2a & c, 6.3c & d, 6.5d & f-g, 6.6b & c, 7.1 a-c, 7.2a & b, 7.6a & f-g, 7.7a & c, 7.8b, 8.2a-f, 8.6a & d-e & g, 8.7b-c & e
- Visual Arts: 5.3, 5.22, 6.2, 6.4, 7.5, 7.11, 7.14, 8.2

Objectives:

The student will:

- List what every living thing needs to survive;
- Identify animal adaptations that help animals acquire the things they need to survive;
- Discuss how certain adaptations help animals live in specific habitats;
- List and describe adaptations for several different animals;
- Discuss how the characteristics of animals relate to predator/prey relationships;
- Investigate bird beak adaptations

Lesson:

- This lesson involves an in-depth discussion of animal adaptations and how those adaptations help animals acquire their basic needs and help them to survive in their habitats.
Lesson Plan
Grades 5-8
Jaws, Paws and Claws

Pre-Lesson Prep:

1. Have a computer ready to watch videos.
2. Have the photo hand-outs of the polar bear, beaver, Komodo dragon and ostrich ready to hand out at the appropriate times.
3. Have the bird beak adaptation work sheet ready to hand out at appropriate time.
4. Have something to write on.
5. Have the Post-Lesson Packet ready at the completion of the lesson.

The Lesson:

1. Tell the child(ren) that they are going to learn about animal adaptations.
2. Ask them what things every living organism needs to survive.
   - Water
   - Air
   - Food
   - Shelter
3. See if they can tell you how an animal acquires those things.
   - They use their physical features called physical adaptations. Their physical adaptations help them obtain food, keep safe, build homes, withstand weather and attract mates.
4. Explain that some animals have adaptations that make them well suited to survive in a very specific type of habitat.
5. Have them watch the video on polar bears.
   https://www.youtube.com/watch?v=Jsr0s-0mQJY
6. Hand out the polar bear pictures and ask them what kind of habitat a polar bear is adapted to live in.
   - Near arctic waters
7. Once they tell you what kind of habitat polar bears live in, ask them how they can tell from the physical appearance that they would live in the arctic.
8. Most likely, they will note the thick white hair, so ask them what benefits this physical adaptation provides.
   - Thick hair helps keep them warm.
   - The hairs are hollow, which traps air and helps insulate them when they swim in frigid waters.
   - The color provides camouflage against the snow and ice while they hunt their prey.
9. Have them look at the polar bear pictures again and ask them what else they can tell you about the polar bear based on its appearance.
   - They are predators—forward set eyes, claws and teeth.
   - They can walk easily on the snow and ice—the large feet help distribute their weight like snowshoes.

10. Have them watch the video on the American beaver.
    https://www.youtube.com/watch?v=Ic3x80VYe80

11. Give them the sheet with the beaver pictures and ask them what they can tell you about the animal based on its physical appearance.
   - Thick coat (with under-fur) keeps them comfortable at all temperatures.
   - Webbed-toes—help them swim well.
   - Broad tail—used as a rudder while swimming and for balance when standing up on their hind legs while cutting down trees. They can also slap it against the water as a warning.
   - Eyes on each side of its head—herbivore/prey animal
   - Large front incisors—rodent/herbivore

12. Once they are done examining and talking about these adaptations, tell them there is something else beavers are able to do that you really can’t see from the picture.
   - They have nictitating membranes (translucent, 3rd eyelids) that protect their eyes when they are under the water.
   - They can close their nose and ears while underwater as well.

13. Now have them watch the video on Komodo dragons.
    https://www.youtube.com/watch?v=8avVFyTspE8

14. Hand out the pictures of the Komodo dragon and see what they can tell you about it from looking at its physical adaptations.
   - Long sharp claws—predator
   - Razor sharp teeth (with serrated edges) and a strong jaw—for hunting/predator
   - Coloration—helps it blend in with forests and savanna (its main habitats) and better sneak up on its prey

15. Tell them that the Komodo dragon has some other useful adaptations that may not be visible from the pictures. Ask them if they know what some of them are.
   - Their saliva has a high concentration of bacteria that can cause severe infections in animals when the Komodo dragon bites them. This will eventually kill any prey that escapes, so they can just track it and eat it later when it dies of the infection.
   - They run fast (15 mph) for short distances, which helps with hunting.
   - They also swim well, which allows them to travel to different islands in their habitat to look for food.
• Reptiles have slower metabolisms than mammals. Komodo dragons only need to eat 1/10th the food a mammal of the same size would need. This means the limited prey animals that are available on the small islands Komodo dragons inhabit will be enough to sustain a healthy population of these predators.

16. Watch the video about the ostrich.  
https://www.youtube.com/watch?v=Jwmr8os4dRQ

17. Hand out the sheet with the pictures of ostriches and ask them what they can tell you about them from their physical features or adaptations.
• Long legs—fast runner (40 mph) with 26-foot strides
• Large size/small wings—flightless
• Feathers—excellent insulators against heat from the sun and trapping heat in during cold, desert nights
• Large eyes on each side of the head—give them an almost 360-degree view that better allows them to see predators and other danger.
• Strong legs—a single kick at a predator like a lion can be fatal.
• Two-toed feet are adapted for running at fast speeds—the ostrich is the only bird with two toes (other flightless birds have 3 and all other birds have 4).

18. Tell them they are now going to take some more time to discuss birds. Ask them what bird adaptation they think most greatly affects what kind of food birds eat.
• Beak or bill

19. Ask them to list as many different types of bird food as they can think of.
• Insects and spiders
• Meat
• Worms
• Invertebrates
• Crustaceans
• Fish
• Shellfish
• Nectar
• Frogs
• Nuts and seeds
• Algae

20. Have them watch the video on bird adaptations.  
https://www.youtube.com/watch?v=lFZ8NMBDCJw

21. Hand out the worksheet with various types of birds. Tell them to use what they have learned about adaptations to write what kind of food they think each bird’s beak is designed to eat and why.

22. Give them time to finish the handout and help them with little hints as needed.
23. When finished, go through each bird on the sheet and then discuss the correct answers.
24. Hand out the Post-Lesson Packet.