Science Curriculum Unit Planner

Grade: 3
Strand: Life Processes
SOL: 3.4
The student will investigate and understand that adaptations allow animals to satisfy life needs and respond to the environment. Key concepts include
  a) behavioral adaptations; and
  b) physical adaptations.
Time: 2-3 weeks

1. Desired Results

Enduring Understandings (BIG Ideas)
Behaviors and physical adaptations help animals survive.

Essential Questions
- How do instincts help animals?
- How do behavioral and physical adaptations help animals survive?

Understanding the Standard

<table>
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<th>Student will:</th>
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<tr>
<td>Give examples of methods that animals use to gather and store food, find shelter, defend themselves, and rear young.</td>
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<td>Describe and explain the terms camouflage, mimicry, hibernation, migration, dormancy, instinct, and learned behavior.</td>
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<td>Explain how an animal’s behavioral adaptations help it live in its specific habitat.</td>
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<td>Distinguish between physical and behavioral adaptations of animals.</td>
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<td>Compare the physical characteristics of animals, and explain how the animals are adapted to a certain environment.</td>
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<td>Compare and contrast instinct and learned behavior.</td>
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<td>Create (model) a camouflage pattern for an animal living in a specific dry-land or water-related environment. (Relates to 3.6.)</td>
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<td>Design and construct a model of a habitat for an animal with a specific adaptation.</td>
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Science Vocabulary
behavioral adaptation, physical adaptation, instinct, learned behavior, hibernation, migration, mimicry, camouflage, dormancy, habitat, physical characteristics, compare, contrast, pattern, animal, design, model, shelter, gather and store food, defend, rear young.
rest or inactivity where growth, development, and metabolic processes slow down.

- Some animals (e.g., geese, monarch butterflies, tundra swans) go on a long-distance journey from one place to another (migration) in search of a new temporary habitat because of climate, availability of food, season of the year, or reproduction.

- Dormancy is a state of reduced metabolic activity adopted by many organisms (both plants and animals) under conditions of environmental stress or, when such stressful conditions are likely to appear, as in winter.

- Some animals are born with natural behaviors that they need in order to survive in their environments (instincts). These behaviors are not learned but are instinctive, such as a beaver building a dam or a spider spinning a web.

- Some behaviors need to be taught in order for the animal to survive, such as a bear cub learning to hunt (learned behavior).

### 2. Assessment Evidence

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<th>Prior Knowledge</th>
<th>Throughout the Unit</th>
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| Students will have been introduced to concepts of hibernation, migration, and camouflage. | **Formative Assessment:**
| Students will have an understanding that adaptations help animals to survive. | - Teacher observation of students engaged in cooperative learning investigations.
|                  | - KWL
|                  | - Science notebook (questions, predictions, observations, summaries, charts, drawings)
|                  | - Conduct simple experiments using appropriate tools
|                  | - Record data on scientific investigations performed

**Summative Assessment:**

- Test/assessment

### 3. Learning Plan

**References to Adopted Materials:**

- **Science Fusion** Plants and Animals, Unit 3
  - What are Some Plant Life Cycles?, pgs. 89-100
  - What are Some Animal Life Cycles?, pgs. 101A-112
  - How Do Living Things Change?, pgs. 113A-114A
  - What are Structural Adaptations?, pgs. 115A-126
  - How Can We Model a Physical Adaptation?, pgs. 129A-130A
  - What Are Behavioral Adaptations?, pgs. 131A-142

**Suggested Activities:**

- As an introduction to the unit on adaptations ask the class, “What helps you to survive?”

- Camouflage Activity: Before the class comes in hide small one inch squares of construction paper all over the class room so that they are camouflaged. Instruct students that they are not allowed to run or talk and will have a limited amount of time to find all the papers you’ve hidden. Reinforces concept of blending in with the environment.

- Camouflage Activity: After a discussion of what camouflage is, have students color a moth to hide and camouflage in the
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classroom. Half of the class will be birds and go into the hall as the remaining half hides their moths. The birds come in the class and hunt for food. After all the moths that were hidden are found the students reverse roles.

- Give groups of students pictures of different animals. Instruct them to write down as many adaptations as they can think of for each animal and explain why the adaptation helps that animal to survive. Share with the class.

- Allow each student to draw an imaginary animal and describe all the adaptations that help it survive in its particular habitat.

- Discuss why different animals migrate or hibernate and how it helps them to survive.

Review Activities:
- Bingo with related vocabulary
- Matching –vocabulary words with their definitions and/or pictures

Outdoor Connections:
- Where are the worms? (This is taken from the Project Wild). Cut different colors of string with different lengths. Find an open space outside to ‘hide’ the worms. Tell your students how many there are beforehand, so be sure to count them! Divide the class into teams. (2 works well here) Have students race to find the worms. Some should be clearly obvious to find, while others are much more challenging. I usually use yellow, brown, white, red, and 2 shades of green to do this. I do this on grass and also try to do it in a muddier area with grass as well. Once the race is over, count the number of worms found for each team to declare a winner! Furthermore, discuss how the camouflage of the worms would relate to other animals and plants.

4. Resources

Trade books:
- Swimmy by Leo Lionni (camouflage)
- On The Wing: Bird Poems and Paintings by Douglas Florian (Physical characteristics, adaptations)
- Animal Camouflage and Defense by Kate Petty (mimicry, camouflage)
- Desert Explorer by Greg Pyers (physical and behavioral adaptations)
- Insecttopedia by Douglas Florian (poems on adaptations)
- Lizards, Frogs, and Tadpoles: Poems and Paintings by Douglas Florian (adaptations)
- Mammalabilia: Poems and Paintings by Douglas Florian (humorous poems on adaptations)
- Seasons by Illa Podendorf (migration, hibernation, adaptations)
- Hard To See Animals by Allan Fowler (camouflage)
- Fur, Feathers, and Flippers by Patricia Lauber (behavioral and physical adaptations)
- Science Fusion Leveled Readers: Types of Plants, Types of Animals(BL); The Wonderful World of Plants, What Kind of Animal(OL/Enrichment); Amazing Plants, Turtle Story(AL/Challenge)

Web Sites:
- Science Standards of Learning, Enhanced Scope and Sequence, Grade 3
  http://www.enchantedlearning.com
  http://www.nationalgeographic.com (numerous links to various animal adaptations)
  www.harcourt.com (Harcourt on line) “Camouflage Field Book”
  www.brainpop.com/science/

Videos:
- All about Animal Behavior and Communication (Animal Life for Children), Schlessinger Media, c2006
- All about Animal Needs (Animal Life for Children), Schlessinger Media, c2006
- Animal Features and their Functions, 100% Productions, c 2000
- Animal Adaptations, Schlessinger Media, c1999
- Search For Solutions Adaptations 19min.
- Animal Adaptation: Why Do Zebras Have Stripes 15 min.
- Amazing Animal Disguises, DK Vision, c1996
- Wild Survivors: Camouflage and mimicry, The Society, c1992
- Great Cover-Up: Animal Camouflage, National Geographic Society, c1988
- Geo Kids: Camouflage, cuttlefish, and chameleons changing color, Columbia Tristar Home Video, c1994

**Discovery Education:**
- Animals Around Us: Animal Adaptations: What Are They? (Gr. 3-5). Run time: 14:00
- Concepts In Nature: Instincts in Animals. (Gr. 3-5). Run time: 14:00
- Concepts In Nature: Why Do Animals Look The Way They Do? (Gr. 3-5). Run time: 14:11
- Creature Feature: Adaptations. (Gr. 3-5). Run time: 5:00
- Creature Feature: Special Features of Creatures. (Gr. 3-5). Run time: 5:00
- Exploring the Diversity of Life: Not What They Seem. (Gr. 3-5). Run time: 10:00
- Oceans Alive: Camouflage. (Gr. 3-5). Run time: 5:00

**Field Trips:**
- None specified

**Other:**
- This unit can easily be taught alongside SOL 3.6.
- Project WET: K-12 Curriculum and Activity Guide
- Project WILD: K-12 Curriculum and Activity Guide
- Project WILD – Aquatic: K-12 Curriculum and Activity Guides
- Environmental Education Activity Guide: PreK-8, Project Learning Tree