

Grade: 5

Title: American (Louisiana) Alligators and their Adaptations

Jennifer Lynn Richardson

Student Learning Objective(s): *The Student's Will:*

1. Explore, observe, and describe the world around them.
2. Identify various phenomena in the real world.
3. Develop the ability to ask scientific questions, investigate aspects of the world around them, and use their observations to construct reasonable explanations for the questions posed.
4. Ask questions about objects, organisms, and events in the environment.
5. Communicate their ideas to others.
6. Develop their science knowledge.
7. Learn through the inquiry process how to communicate their own investigations.
8. Students understand the diversity and adaptations of organisms in their environment.
9. Students understand the structure and function of living things.

Louisiana Grade level Expectations (GLE's):

Grade: 5th #19: Communicate ideas in a variety of ways (e.g., symbols, illustrations, graphs, charts, spreadsheets, concept maps, oral and written reports, and equations) (SI-M-A7).

Grade: 5th # 29: Describe adaptations of plants and animals that enable them to thrive in local and other natural environments (LS-M-D1).

Materials required:

1. Tape (duck tape) for the students' hands. (one per student)
2. Variety of small objects for students to pick up (paper clips, straws, buttons) (one per student)
3. White poster boards (one per group)
4. Books, magazines, and internet articles on a variety of animals (one per group)
5. Paper bag with a variety of animal names in it (one per group)
6. Blank Vocabulary Chart (1 per student)
7. Observe and Record Sheet (1 per group)
8. Report your Findings Sheet (1 per group)
9. # 2 pencil or pen for writing (1 per student)
10. Markers, crayons and colored pencils for each group (*Students use their own materials, confirm with teacher that they have these supplies)

Detailed Procedure. Describe what the students will do in each stage. Include guiding questions you might ask to help students.

1. Engage:

Science Process Skills Indicate which science process skills students will develop in this part of the lesson.

- | | | | | | | |
|---|--|---|--------------------------------------|---|--|---|
| <input checked="" type="checkbox"/> Observation | <input checked="" type="checkbox"/> Classification | <input checked="" type="checkbox"/> Communication | <input type="checkbox"/> Measurement | <input type="checkbox"/> Estimation | <input checked="" type="checkbox"/> Prediction | <input checked="" type="checkbox"/> Inference |
| <input type="checkbox"/> Identifying Variables | <input type="checkbox"/> Controlling Variables | <input type="checkbox"/> Graphing | <input type="checkbox"/> Modeling | <input type="checkbox"/> Defining Operationally | <input type="checkbox"/> Forming Hypotheses | |

1. The teacher will get the students to analyze their own adaptations. The teacher will get the students to tape their thumbs to the palms of their hands and experiment with picking up a variety of objects. She will also get them to try and write on paper and ask them to tie their shoes. They discuss what adaptations they might have. The teacher will ask the students why they think she asked them to try and pick up things using only 4 fingers, instead of 5. Have students describe how they adapt to different changes in their environment. How do we change for weather and seasons?
2. The teacher will ask the students **what they know about alligators. Have they ever seen one in real life? Ever held one or felt an alligator before?**
3. The teacher will begin a **K-W-L (k=what we know; w=what we want to know, and L= what we learn) chart** on the board and will record student responses under the correct columns.
4. The teacher will show a **short video clip (DVD) (Popular Mechanics for Kids: Gators, Dragons, and Other Wild Beasts)** about alligators and afterwards, the students will identify alligator body parts, feeding patterns, habitats, and conditions necessary for survival in the wild in the “what we learned” column (on the K.W.L chart) on the board, the teacher will record their responses.
5. The teacher will get the students to record the following vocabulary words on the paper provided to them. The vocabulary words are: **adaptation, camouflage, structural adaptation and behavioral adaptation.** The students will write the definitions in their own words and can draw pictures if they want to help them remember after a class discussion on what the words mean.
6. The teacher will allow each pair of students to randomly pick an animal from a paper bag that they will investigate.
7. The teacher will say to the students: *today, I am challenging all of you to investigate with your partner an animal adaptation, and the ways that the animal “adapts”—develop certain traits and behaviors over time—to suit their environment. Your mission is to select one animal and report on the ways it is adapted to its environment. Let’s begin by investigating the facts: when people hear the word adapt, one of the first things that come to mind is “fitting in”. People and animals always have to adapt or change to different situations or places.*
8. For animals, including people, adaptation is often a matter of life or death! If they don’t adapt in certain ways to their surroundings, they will not survive. Adaptation means having certain body parts or behaviors that allow animals to survive and thrive in their environments.
9. Got the idea? Then, you’re ready to **observe and record.**
10. **Observe and Record:** find and report on the ways that your animal is adapted to its environment using a variety of resources provided to you. Record your investigations on the observation sheet provided to you. Remember to put your name and number at the top of the sheet.
11. **Report you’re Findings:** Once you’ve completed your investigations, write about your findings, or the interesting things you learned. Record your answers on the “report your findings” sheet provided to you. Remember to put your name and number at the top of the page.
12. **Design a poster:** this is the last step of our investigations. This is when you and your partner will draw your animal using crayons, colored pencils or markers, and write all of the neat facts you found about the animal and their adaptations (how they “fit in” their environment) and write them on the poster. After you finish, you will both come to the front of the classroom and present your animals to your classmates and then we will hang them on the board. Remember, both students need their name somewhere on the poster and the “Animals Name” will be the title of the poster. Remember to write neat and to do your best.

2. Explore:

Science Process Skills Indicate which science process skills students will develop in this part of the lesson.

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|---|--|---|--------------------------------------|---|---|---|
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| <input type="checkbox"/> Identifying Variables | <input type="checkbox"/> Controlling Variables | <input type="checkbox"/> Graphing | <input type="checkbox"/> Modeling | <input type="checkbox"/> Defining Operationally | <input type="checkbox"/> Forming Hypotheses | |

Experimenting

Graphing

Modeling

1. The teacher will let each group pick an animal from the paper bag and then pick up the informational resources about their animal provided by Ms. Richardson. The animals will include beavers, owls, frogs, whooping cranes, nutria rats, armadillos, tigers, bears, and snakes.
2. The students will: **Observe and Record:** find and report on the ways that your animal is adapted to its environment using a variety of resources provided to you. Record your investigations on the observation sheet provided to you. Remember to put your name and number at the top of the sheet.
3. The students will: **Report their Findings:** Once you've completed your investigations, write about your findings, or the interesting things you learned. Record your answers on the "report your findings" sheet provided to you. Remember to put your name and number at the top of the page.
4. The students will: **Design a poster:** this is the last step of our investigations. This is when you and your partner will draw your animal using crayons, colored pencils or markers, and write all of the neat facts you found about the animal and their adaptations (how they "fit in" their environment) and write them on the poster.
5. **Poster Presentation:** Each group will come to the front of the classroom and present their animal to their classmates and then we will hang them all on the board. Remember, both students need their name somewhere on the poster and the "Animals Name" will be the title of the poster. Remember to write neat and to do your best. ****Note-** Each group will get 3 minutes to discuss their research/posters to the class.

3. Explain:

Outline the line of questioning you will use to assist students in understanding the concept. List at least 5 good questions and identify the question category (Gallagher & Aschner) in which your question falls (see text, Figure 7.6).

1. Why is it important for animals and humans to have the ability to adapt to changes in the environment; and why is it critical for an animal's survival?
2. How do animals adapt to their environments through certain behaviors or actions?
3. What does structural adaptation mean? What are some examples?
4. What does behavioral adaptation mean? What are some examples?
5. What have you learned about adaptations overall? Describe in your own words.

4. Expand:

Science Process Skills *Indicate which science process skills students will develop in this part of the lesson.*

Observation Classification Communication Measurement Estimation Prediction Inference
 Identifying Variables Controlling Variables Defining Operationally Forming Hypotheses
 Experimenting Graphing Modeling

1. The students will use their imaginations and "design a creature" that fits in an unusual environment. For example, how could a creature survive on Venus with its poison atmosphere and scorching heat? What about in a volcano? What special adaptations would it need?
2. The students will work in groups of two to design their creature and illustrate it on a poster board using crayons, colored pencils or markers. They must draw their creature in its habitat and be able to explain to the class how it adapts or "fits in" to its environment.

5. Evaluate:

What exactly will you do, or what evidence/data will you collect, to ascertain whether the students can achieve the objectives you listed at the top of this lesson?

1. The students will share their creative creatures to their classmates and discuss how the

creative fits in its environment, its adaptation.

2. The teacher will praise the students for their hard work and positive cooperation with one another.
3. The teacher will ask the students what they learned about adaptations and why they are so important to humans and animals.

Brain Compatible Learning Strategies Used in This Lesson:

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|---|--|--|---|--|
| <input checked="" type="checkbox"/> Brainstorming/Discussion | <input checked="" type="checkbox"/> Drawing and Artwork | <input type="checkbox"/> Field Trips | <input type="checkbox"/> Games | <input checked="" type="checkbox"/> Graphic Organizers |
| <input type="checkbox"/> Humor | <input checked="" type="checkbox"/> Manipulatives, Experiments, Labs, Models | <input type="checkbox"/> Metaphors, Analogies, and Similes | | |
| <input type="checkbox"/> Mnemonic Devices | <input type="checkbox"/> Movement | <input type="checkbox"/> Music, Rhythm, Rhyme, and Rap | <input checked="" type="checkbox"/> Project/Problem-Based Instruction | |
| <input checked="" type="checkbox"/> Reciprocal Teaching, Cooperative Learning | <input type="checkbox"/> Role Plays, Drama, Pantomimes | <input type="checkbox"/> Storytelling | | |
| <input type="checkbox"/> Technology (student use) | <input type="checkbox"/> Visualization/Guided Imagery | <input checked="" type="checkbox"/> Visuals | <input checked="" type="checkbox"/> Writing/Journals | |

Lesson Source:

DVD: Popular Mechanics for KIDS-Gators & Dragons and other wild beasts (Swamp and Gator Episode) (AWESOME!!!!)

"Teacher Tube - Adaptations." [Teacher Tube - Teach the World | Teacher Videos | Lesson Plan Videos | Student Video Lessons | Online Teacher Made Videos | TeacherTube.com](#). 03 Apr. 2009 <<http://www.teachertube.com/v.php?viewkey=764142f6c510fd3982b4>>.

"Educational | Environmental | Documentary | Web TV... for kids! | Planet Bonehead." [Planet Bonehead](#). 03 Apr. 2009 <<http://www.planetbonehead.com/watch>>.

[Insta-Gator Ranch - A working Louisiana Alligator Farm](#). 03 Apr. 2009 <<http://www.insta-gatorranch.com/gatorvideo.asp>>.

[State Symbols USA - official symbols 50 states](#). 03 Apr. 2009 <http://www.statesymbolsusa.org/louisiana/reptile_alligator.html>.

Adaptation

Structural Adaptation

Behavioral Adaptation

Camouflage

Vocabulary Chart

Name _____ # _____

1. What animal did you select?

2. What special adaptations does the animal have to help it succeed in its environment?

3. Are the adaptations a physical part of the animal? Or, are the adaptations more of a behavior that the animal uses?

4. If this animal didn't have these adaptations, what problems might it face?

5. Do other animals in this environment have similar adaptations? Which animals?
