**Central Connecticut State University**

**Department of Teacher Education**

**Name:** Jessica Hanley **Date:** February 2012 **Grade:** 5/6

**School:** Central Connecticut State University **Classroom Teacher:** Miss. Hanley

**Title of Lesson: “**How Animals Adapt”

**Lesson Outline**

**Derived From: *Activities for a Differentiated Classroom***

**Content Standards:** Identify local, state or national curricular standards that your lesson is aligned with. Describe the key knowledge and skills the students will demonstrate at the end of the lesson. See CT Dept. of Education and Common Core State Standards
<http://www.sde.ct.gov/sde/site/default.asp>

[**http://www.corestandards.org/**](http://www.corestandards.org/)

Heredity and Evolution**--- What processes are responsible for life's unity and diversity?**
3.2--Organisms can survive and reproduce only in environments that meet their basic needs.

3.2.a. Plants and animals have structures and behaviors that help them survive in different environments.
3.2.a.1. Plants and animals have physical and behavioral adaptations that allow them to survive in certain environments. Adaptations are passed from parents to offspring. Individuals that happen to be bigger, stronger or faster can have an advantage over others of the same kind for finding food and mates.
3.2.a.2. Animals have behavioral and structural adaptations for getting food. Structural adaptations include things such as specialized teeth for tearing meat or grinding grasses; specialized beaks for cracking seeds, snatching insects, tearing meat or spearing fish; sharp claws for grasping; keen sense of smell, or long, sticky tongues for reaching food. Behavioral adaptations include actions such as following herds of prey animals, spinning webs or stalking.

**Technology Standards:**

**1. Creativity and Innovation**

a. Apply existing knowledge to generate new ideas, products, or processes.

b. Create original works as a means of personal or group expression.

**2. Communication and Collaboration**

a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.

b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.

**3. Research and Information Fluency**

b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

d. Process data and report results.

**Student Learning Objective(s):** Unpacking content standard and specifically related to district/school curriculum.

* Students will attempt to understand/grasp the fact that an organism might have to be able to make adaptations or changes so that they are able to survive in different environments.

-I will be able to measure if the students “understand” this concept from the results of a mini project that they will be doing during class; *Animal Adaptations and Multiple Intelligences* (page 120-121) as well as their responses to a homework assignment that they will be doing: answering the question that I posted on our online class blog.

**Assessment:** Describe the form of assessment used for the students to demonstrate learning based on your learning objective.

* As a form of assessment, the *Animal Adaptations Activities Rubric* (page 123) will be used. (One rubric for each student project)
* I will put each student’s results from the rubric onto a ‘google spreadsheet’ so that everything is made clear and easier for me to assess understanding
* I will also make sure that they understood the lesson based on their responses to the question on our class blog.
* I can also assess student learning by the questions they ask in class

**Materials and Resources:** (Including books, websites, guests, etc.)

* 3 bowls
* Grapes
* Uncooked rice
* Water
* Tongs
* Tweezers
* Toothpicks
* Coffee stirrers
* Video clips or photos of birds feeding (Internet)

**Initiation:** Motivation to begin thinking and make connections to learner’s knowledge and experiences. Set the point of the lesson for the learners—If they are curious they will be interested. At this time you can also stress to the learners the importance of respect for the community and cooperation, etc.

* To get the students started, I am going to ask them to take out a piece of paper and jot down anything that they already know or anything that comes to mind when they hear the words "animal adaptation." --- For example, you can make a guess as to what you think it might mean or even draw a picture.
* Questions I could ask: “How do you adapt to the environment when it’s cold or warm outside?” “How do you think animals adapt?”

**Lesson Development:** Bullet the sequence of your lesson. Explain what you are going to say, do, show, transitions, learning groups/activities and use of time. Note in your lesson development at the end how you are differentiating the lesson and if specific students need any part(s ) of the lesson modified.

Preparation Note: Place the grapes in one bowl, uncooked rice in another, and water in a third bowl. Display the three bowls where all students can see them and reach them. Set out tongs, tweezers, toothpicks, and coffee stirrers near the bowls. (Having all of these materials out as the students are walking in will immediately catch their attention.)

1. Begin the lesson by asking student volunteers to help you. Hand one student the tongs and ask him or her (with a serious face) to use the tongs to get you some water. Look puzzled when the student does not succeed. Hand another student a coffee stirrer and ask him or her to get you some rice. Again, look confused when this fails. Finally, hand a third student a pair of tweezers and ask him or her to pick up some grapes (no stabbing allowed) Again, look puzzled when this does not work
2. Look at the class and ask dramatically how you will ever be able to get what you need with these tools. Explain that you can only use each tool for one of the items to avoid contamination. Ask for help figuring out which tool works best with which item, Allow volunteers to come up and show the class how to use tongs to pick up the grapes, a stirrer to suck up water, and tweezers to pick up grains of rice.
3. Explain to students that these specialized tools are similar to the beaks of some birds. These birds have beaks that are specially suited for the type of food that they eat. Explain to students how hummingbirds, warblers, and pelicans use their beaks for survival.
* Hummingbirds use their long, narrow beaks to reach deep inside flowers to drink the nectar. This is similar to the coffee stirrers and the water.
* Warblers use their short, narrow beaks to reach into tight places, such as between the bark of tree trunks to eat tiny insects. This is similar to the tweezers and the rice.
* Pelicans have some of the longest beaks in the bird world. They use their long beaks to scoop up fish underwater. A pouch at the bottom of the beak expands to help the pelican swallow large fish. This is similar to the tongs and the grapes. Display photos or show video clips of hummingbirds, warblers and pelicans feeding. This will help the students better understand the lesson.
1. Explain that the beaks of these birds are examples of animal adaptations. An adaptation is a change to an animal or plant that makes it easier for it to exist in its environment. Ask students to brainstorm other examples of animal adaptations. List these on the board.
2. Tell students that they will now learn more about animal adaptations by having the opportunity to choose projects that fit their interests. Distribute the *Animal Adaptations and Multiple Intelligences* activity sheets (pages 120-121) to students. Review the activity options with the class and assign students a specific number of activities to complete, partners will be given to you. Determine a due date for the projects.
3. Distribute the *Brainstorming Idea Catcher* activity sheet (page 122) to help students get started on their projects. Provide students with one sheet for each project that they will complete. Remind students that in brainstorming, they should put down any ideas that come in mind without judging them. Tell students that great ideas come from unexpected sources, including thoughts that may at first seem silly or impossible.
4. If students finish early, they may complete the Anchor Activity.
* Anchor Activity: Have students research human adaptations. Then, have them imagine human adaptations that might occur in the future. Ask students to draw and label a picture of a “human of the future” and his or her adaptations.

Tools I will be using:

Moodle: The homework for tonight and copies of all the worksheets will be posted here.

Weebly: The question that I would like you to answer for homework will be posted here.

Wiki: Everything from our class warm up to our wrap up will be written out here in case anything was misunderstood or not heard.

**Closure:** Ending the lesson for the learners. Ask specific questions that relate to learning objective and purpose of the lesson. Research shows that learners leave with greater retention frequency of transfer of learning.

* As a “warp up” ask the class: “What did you learn?” Write their responses quickly in bullet form on the board. 🡪 Tell them that I will type up/save it and post what they wrote on Moodle and our class blog so that they can have it or use it if they need to.
* Remind them that their homework and copies of all the worksheets are posted on Moodle and that their homework is to respond to the question I posted in our class blog (Weebly) and to work on their projects (finish Brainstorming worksheet)