Instructional Unit Objectives:
By progressing through the unit, the student will:

- Comprehend the meaning of adaptation and list examples of adaptations of various organisms.
- Identify specific adaptations among living things, including both plants and animals.
- Construct a drawing of an animal or plant applying their newly gained knowledge related to adaptation.
- Evaluate their own descriptive essay and edit their piece

Content concepts addressed throughout the unit:

**Science**

5.0 Diversity and Adaptation Among Living Things

The student will understand that living things have characteristics that enable them to survive in their environment.

5.1 Realize that plants and animals can be grouped according to similarities and difference in their characteristics.

5.2 Determine that adaptations help organisms to survive in their environments.

4.5.1 Realize that plants and animals can be grouped according to similarities and differences in their characteristics.

**Writing**

5.2.spi.1. complete a graphic organizer (i.e., clustering, listing, mapping, webbing) to group ideas for writing.

5.2.spi.6. choose vivid and active words when writing.

*5.2.spi.25. incorporate figurative language, vivid descriptions, active
Lauren voice verbs, sensory details, and personal observations to display facility in the use of language.

5.2.tpi.5. share written work with others.

5.2.tpi.18. write in expressive and imaginative modes.

5.2.tpi.22. produce multiple drafts of writings.

Materials for unit:
- Snow cone cups
- Granola, raisins, popcorn, or any treat to put in bottom of cups
- Computer and projector
- Centerpiece graphic organizer
- K-W-L chart
- Video about animal adaptations
- Adaptation song
- Art supplies including crayons, markers, colored pencils, etc.

Set:
The teacher will hand out paper snow cone cups to all students and fill the bottom portion of the cup with some kind of healthy and school approved treat for the students to enjoy. Let them know they are free to eat the treat, but they cannot lift up the cup, or tilt it to get the treat. You will see students try to get the treat, and maybe get some with their tongues, but they will not be able to reach the majority of the snack. Ask students to get into pairs and share some ideas about how they could reach the treat. What could they change about their physical characteristics in order to get the treat? My aim is that the students will come up with ideas such as a longer nose, or sharp clippers on their hands so they can cut the bottom off of the cone cup to access the treat. The teacher will then discuss with students that these changes to our physical characteristics are called adaptations.

Procedures:
1) While students enjoy their snacks, the teacher will guide students through a power point about adaptations (see attached power point file). This PowerPoint will not be delivered using direct instruction, but as a discussion point the class will use a guide. The presentation provides questions for
Lauren students, and asks learners to reflect on what they have learned so far.

2) Students will take notes about adaptations on a graphic organizer provided by the teacher.

Key Discussion Questions/Essential Q’s addressed throughout unit:
What is an adaptation?
Do all living things adapt?
What happens if an organism fails to adapt to their environment?
How can descriptive details and observation influence our writing?

Closure:
Students will use a graphic organizer that is used for brainstorming called center point. Breaking up into small groups, each student will add to a list of adaptations, or things they have learned about adaptations. We will use this activity to measure how much we will have learned by the end of the unit.

Assessment:
Students will be assessed informally by the teacher based on their understanding/questions throughout the power point presentation. They will also be formally assessed through their graphic organizer and cooperation with their pair-share partner.
Create your own plant or animal!
Grade 5/One 45 min. class period

Set:
The teacher will begin this lesson by filling in the K of the K-W-L chart with students. They had an extensive lesson on adaptation the day before, so we will be reviewing and remembering what we learned about adaptation yesterday. This will reinforce the students, for we will be starting with a base of knowledge about the concept that we will be building on during this lesson.

Procedures:
1) The class will watch a short video about adaptation of different organisms in regions throughout the world. The students are asked to record three of the most exciting/new/favorite facts they learn from the video. The video focuses on habitats with various climates, including deserts, jungle/rainforest, and arctic environments. Video found for purchase at: http://school.discoveryeducation.com/ontv/videoclips/animals1.html

2) After the video, we will discuss what we learned by going around to each student and listening to what they have to share.

3) Students will now practice singing an adaptation song (see attached) that highlights different habitats/climates and the various adaptations found in these areas.

4) During the rest of the class, students will have the opportunity to create their own animal or plant with at least 5 adaptations. The teacher should model this activity, because it is important to stress the importance of using descriptive detail, in their drawings. Tell students that they need to make sure that they avoid showing their drawings to their peers just yet; the next lesson requires that students don’t see other students’ work.

Closure:
Students will name their creatures based on their adaptations or characteristics. A handout on Greek and Latin word parts will be handed out so that students can build an appropriate name! Visit
Assessment:
Students will be assessed using the questions they ask before, during, and after the video, in addition to the teacher’s informal questions throughout the lesson. Understanding of the material will also be assessed by student responses/facts learned from the video. The teacher will also walk around the room and monitor students while they write their descriptive essays. Students will exhibit their understanding of adaptation through creating an organism with various modifications.

**Some components of this lesson adapted from a lesson given by Ms. Mindy Blankenship**
How important is detail & observation in science and writing anyway?
Grade 5/ Two 45 min. class periods

Set:
Students and teacher will fill in the L in the K-W-L chart they have been adding to throughout the past two lessons. We will have a celebration (from Dr. Jean’s website), http://www.drjean.org/, and discuss how much we have learned about adaptation since the beginning of the unit. By examining our prior knowledge, there is so much we have learned about, and we should be proud of ourselves!

Procedures:
1) Ask students to take the pictures they drew yesterday, and write a descriptive essay about the animal or plant they designed. It is still important to keep pictures to themselves, remind students that there will be time to share later! The descriptive essay must be as detailed as possible, and should tell what the animal or plant looks like, including adaptations. The teacher should model this to ensure that students understand to explain where tails, eyes, and other parts are located, as well as other descriptive factors such as color of fur or skin, and texture if it applies.

2) Once students have written their essays, they will be asked to switch essays only (not drawings!) with a fellow peer that is not sitting on the same side of the classroom.

3) Using the essay as a guide, the student is to recreate the animal or plant designed by their peer in their science notebook. The student must use the descriptive essay to try to match it as best they can to their peer’s without seeing the actual picture. This will be used as an introduction to the importance of using descriptive detail in their writing.
Lauren

4) Students will look at the drawings and pictures comparing the differences. It is my aim that the students will gain an understanding for the importance of using descriptive detail in their scientific observations in their science writing, as well as in their writing across other contexts.

Closure:
Students will write an exit ticket answering the questions: What have you learned about the importance of using detailed description? Why does it matter? Students will respond and reflect on this activity using a line of learning in their science notebooks as well.

Assessment:
Students will be assessed informally with the teacher monitoring the class, walking around, and asking questions about students’ creatures and essays throughout the independent student work time. Students will be assessed formally through their animal or plant drawing, and their descriptive essays. This assignment will be graded using a rubric that the students will have beforehand, so they know what is expected of them. Students will also be assessed through the responses done in their science notebooks, as well as their exit ticket reflections.
Extension activities for unit:

1) One way you could extend this unit for learners is to discuss the differences between accommodations and adaptations. This concept is not addressed until the later grades, but there is sure to be a student who is ready for this material! Even if you don't go into the deeper details, it is a concept that can be discussed in order to let students know that not all changes are adaptations.

2) Another possibility for extension that can be beneficial for all learners is to have students do a web quest on adaptations. A great way to integrate technology and learning! Check out this great web quest, or find one on your own. http://oncampus.richmond.edu/academics/education/projects/webquests/adaptations/index.html

3) This website would also be a good way to extend the lessons for learners who are eager to dig deeper into adaptations. Refer to this website, and let students do a presentation for the class on what they've learned. http://www.uen.org/utahlink/activities/view_activity.cgi?activity_id=4750

4) Create a 3-D model of your animal, or even try to design a plant with its own adaptations! Encourage learners who are more tactile to use modeling clay, or paper Mache to recreate their organism.

5) Create an adaptation board game to play. Ask that students use materials of their choice to develop a game board, and write directions for playing the game in addition to questions to use for progressing through the game.

6) Another fun activity that students can play on the computer. At this site, students can create their own animals using a program. Once they create the animals, they can print a picture of it, and use it to write a story about the animal, a really exciting website! http://www.switcheroozoo.com/zoo.htm
Lauren

Adaptation Song
(To the Tune of I’ve Been Working on the Railroad)

Plants survive in their surroundings
Because they adapt
To conditions that are found in
The desert habitat.
There it’s always hot and sunny
The air is very dry
Soil is sandy and it’s rocky
And the winds go blowing by.

How have desert plants adapted
To their habitat?
Roots are long for finding water
That they store in stems so fat.
Leaves lose water so they’re smaller
Some plants have none, you know
Cacti have spines that will protect them.

Other kinds of plants are living
Where they must adapt
To the tropical rain forest
a wet, shady habitat.
There it’s always warm and rainy
Soil is shallow and poor
There’s so many plants it’s shady
On the forest floor.

In the tropical rain forest
How do plants adapt
Buttresses support the tall trees
Drip-tip leaves shed water.
Prop and stilt roots can be found here—
Supporting while they feed.
Some plants climb or live on others
For the light they need.
Lauren

Resource: http://www.mbgnet.net/bioplants/adapt.html