Adaptation

# Breakthrough Denver

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| **Getting Yourself Ready** | | | | |
| **Materials**: Writing Utensil, PowerPoint, positive attitude. | | **Your Preparation**: Prepare PowerPoint, evolution Cornell notes preparation, and adaptation worksheet. | | **Agenda (w/times)**: Introduction to evolution video (9 minutes) Class discussion about evolution (10 minutes) Adaptation introduction (35 minutes) |
| **Getting Your Students Ready** | | | | |
| \***Do Now**: Have students write on whiteboard what they think evolution is. | | | | |
| **Objective**: To have an understanding about how organisms change overtime. Also to know how a line graph works. An introduction into adaptation | | | **Proving behavior**: By demonstrating an example of evolution of an organism through a line graph. | |
| **Purpose**: To show how adaptation works and how a line graph is made. | | | | |
| **Teaching** | | | | |
| Step 1: | Say: Today we will be starting our journey into the world of evolution and how it works. The video you are about to see is just a brief intro into this complex world. We will go more in depth about evolution later in the week.  See: <http://www.teachertube.com/viewVideo.php?video_id=58534&title=Facts_Of_Evolution___Chapter_1_of_6>  \*Do: Students will do a summary and discussion of the video. | | | |
| Step 2: | Say: If evolution is gradual change overtime then what is the specific word for those changes? Adaptation is the correct word indeed. Adaptations are structures, characteristics, and behaviors that increase an organism’s chances of surviving and reproducing in a particular environment.  See: How adaptation works using an animal that has changed overtime. (i.e. an animal that was affected by the current gulf oil spill)  \*Do: Guess on their whiteboards types of adaptation that organisms have or go through. | | | |
| Step 3: | Say: There are two types of adaptation. Structural adaptation and behavioral adaptation. Structural adaptations are the adaptations that affect the physical build up of an organism. Example of structural organism would be the stripes on a zebra to confuse predators. Behavioral adaptation, are adaptations that organisms use to survive. Example how a tiger crouches down to blend in with the earth before attack so it goes unnoticed to its prey.  See: An example of zebras and tigers  \*Do: Students will come up with three examples of how animals use structural and behavioral adaptations in different animals. | | | |
| Step 4: | Say:  See:  \*Do: | | | |
| Step 5: | Say:  See:  \*Do: | | | |
| Step 6: | Say:  See:  \*Do: | | | |
| **Practice** | | | | |
| \***Structured Practice** (3-4 additional examples led by teacher with gradually quickening pace, helping students approach automaticity by manipulating time, materials, and group size) | | | | |
| Time: 7-10 minutes  Materials: whiteboard, expo markers  Group Size: individual | Example 1: Frogs live in pond environments. List three frog adaptations and describe how they help the frog survive. | | | |
| Time: 10-15 minutes  Materials: graphing paper, markers.  Group Size: 2 students | Example 2: Based on the descriptions you gave on the frog now create a line graph on how the frog population changed year by year based on one of the adaptations. | | | |
| Time:  Materials:  Group Size: | Example 3 | | | |
| Time:  Materials:  Group Size: | Example 4 | | | |
| \***Guided Practice** (the proving behavior of the objective monitored by the teacher) | | | | |
| Assignment: (from proving behavior) A trout stream runs through a meadow where the stream bottom is dark and there are lots of shadows. Then the stream flows down through some rapids where the water splashes over and around light-colored rocks. The trout have dark backs in the meadow and light backs in the rapids. How do you explain the color variation?  Half of a page. | | | Criteria for Mastery: To answer the question by stating it is due to adaptation why the trouts colors are different on the different sides of the river. | |
| Independent Practice (Homework) | | | | |
| Explain Homework:  Your homework tonight is to draw an animal that you created and the adaptations that it went through overtime. | | | | |
| **Closure** | | | | |
| Explain Closure: Evolution is happening as we speak ladies and gentlemen. You are not the same when you walked into this classroom just as I was not the same as when I walked into this classroom. We changed, we adapted. | | | | |