Trophic Levels

# Breakthrough Denver

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| **Getting Yourself Ready** | | | | |
| **Materials**: Writing Utensil, 4 poster boards, markers, whiteboard, expo markers, laptop or access to e-mail, and a positive attitude | | **Your Preparation**: Create PowerPoint, create photosynthesis review sheet, Scientific Method Quiz, create Science word “Wall/Poster”. Create note cards with environments and organisms.  Create homework sheet. Retrieve gifts for Students and GS | | **Agenda (w/times)**: (Class 1): Scientific Method Quiz (10-15 minutes) PowerPoint (20-25 minutes) Photosynthesis Review Sheet (15-20 minutes) Homework go over (5-10 minutes) |
| **Getting Your Students Ready** | | | | |
| \***Do Now**: Answer this question on your whiteboard “Is energy created, destroyed or transferred? Explain your answer” | | | | |
| **Objective**: *Today you will be able to have a basic knowledge the environment* | | | **Proving behavior**: *by… understanding some key terms energy, producers, consumers, autotrophs, biomass, herbivores, heterotrophs, primary consumers, secondary consumers, carnivores, tertiary consumers, omnivores, Decomposers, detritivores, detritus.* | |
| **Purpose**: *We are doing this because this week will be going more in depth look on the environment and ecosystem.* | | | | |
| **Teaching** | | | | |
| Step 1: | Say: Energy is neither created nor destroyed; energy is only transferred from organism to organism. How energy is essential for life. Every organism needs energy to perform activities in daily interactions. (Growth, Food, reproduction, gas exchange, elimination of waste, getting water and nutrients, responding to the environment  See: Energy Web on board( Thinking map)  \*Do: I will have the stand in a circle and tap the person’s hand next them all around the circle to show how energy is not destroyed or created. | | | |
| Step 2: | Say: Producers and autotrophs. Break down the words have a short discussion on what the students believe the words mean is. Tie photosynthesis to the key words how the Sun is the producer, how the plants are autotrophs. Producers transform the sun’s energy into food energy.  Producer: Organisms who create *biomass/matter*.  Autotroph: Organisms who make their own food, or self-feeders.  See: Pull out photosynthesis diagram and how the Sun create biomass for the plants  \*Do: Students are taking down Cornell notes on this step | | | |
| Step 3: | Say: Have students guess what the opposite of producers…is Consumers. Consumers are organisms that eat other organisms for energy. Students will name three examples of consumers on whiteboards. Producers can create their own food and nutrients while consumers cannot and must depend on a producer to depend on. A more precise word for consumers are Heterotrophs. There are different types of heterotrophs are herbivores/primary consumers because they only eat plants. Carnivores/secondary consumers meat eaters who only eat primary consumers and only eat meat. Teritary consumers/third level consumers eat secondary consumers. Omnivores are animals that eat both producers and consumers are the highest level of consumers.  See: a group of animals  \*Do: Students guess what type of consumers the animals are. | | | |
| Step 4: | See: A Rotten banana, Students will guess how the banana became rotten and will guess how a organism becomes rotten.  Say: If Producers create, Consumers take up, and then decomposers eat the dead. Decomposer eat the remains of dead organisms. Use the example of rotten foods or animals and say in actuality the organism is being destroyed/eaten by decomposers. Transfers the energy of the energy in the dead animal to the decomposers. Whatever is left of the consumer returns to the soil or water.  \*Do: Students will continue their Cornell notes but will also break apart in groups chose an organism and chose their decomposers. (Lions-Vultures) | | | |
| Step 5: | Say: There are feeding relationships in organisms called feeding relationships. Producer Trophic level- Primary Consumer Trophic level- Secondary Consumer trophic Level- Tertiary Consumer Level.  See: Feeding Organism triangle chart.  \*Do: Students will create a cause an effect chart about the organisms producers and consumers. | | | |
| Step 6: | Say: Just as there are feeding relationships among producers and consumers, there are food webs for organisms in their environment. Consumers and decomposers transfer energy through a food web.  See: See an example of a food web  \*Do: Students will create their own food web based on a certain environment that are on a note cards. | | | |
| **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:  Materials:  Group Size: | Example 1: After students create their own food web, they will break into two groups and create their own Web based on the ones each individual students own food web. Time: 15 minutes  Materials: poster boards, markers  Group size: 3-4 students. | | | |
| \***Guided Practice** (the proving behavior of the objective monitored by the teacher) | | | | |
| Assignment: (from proving behavior) Students will summarize their Cornell notes. | | | Criteria for Mastery: A quick note about Feeding relationships and food webs. (5 minutes) | |
| Independent Practice (Homework) | | | | |
| Explain Homework: Feeding Relationships and Food web worksheet | | | | |
| **Closure** | | | | |
| Explain Closure: Every organism on the planet has a purpose; from the smallest algae to the largest elephant has a purpose to their life on this planet. | | | | |