Subject: Science

Topic: Ecosystems

Grade Level: 4th

Class time: 55 minutes

**Materials:** teacher laptop & projector (i.e. promethean, or smartboard), access to the internet, food web example cards with string, food chain example cards with arrows, and white board markers (neon colors needed for black tables).

**Start-up activity:**

Using the neon white board markers to write on your black lab tabletops, complete the following activity with your partner:

You’re probably used to thinking of your city, town, or neighborhood as a community. But did you know all animals and plants live in communities too?

List 4 organisms (living things) that live in each of the following communities.

\*NO repeats!

1. Your home
2. Yellow Stone National Park
3. The North Atlantic Ocean
4. Lake Allatuna

**Gallery Crawl:** After an appropriate amount of time, have each student “sign” their work by writing their names on their table. Have everyone stand up, pushing chairs out of the way, and outline a path where they can observe the rest of the class’s work as they walk by slowly. Have them keep and eye out for the following:

* Their favorite, unique example
* Something listed that is not a living thing, and therefore not an organism (i.e. water, dirt)
* Any organisms they have a question about (what they are or where they are located)

**Taking it further:**

After reviewing the class’s thoughts about what they saw during the gallery crawl and addressing any questions, discuss the following vocabulary terms:

* Producer
* Consumer
* Decomposer
* Predator
* Prey

Assess prior knowledge by allowing the students to try to define each term first and record them on the board.

Listen to Mr. Parr’s song “It Starts with Producers” by visiting [www.youtube.com](http://www.youtube.com) and searching “Mr Parr producers”. Have students pay close attention for the words they just discussed.

After the song discuss the differences between the definitions the students gave for each of the above words, and the explanation relayed in the song. **You can take screen shots or pause the music video to allow students a chance to read the lyrics carefully.**

**ACTIVITY-FOOD CHAIN VS. FOOD WEB:**

Have a few volunteers come up to the front and hand them each a card (from the food chain pile) and ask them to line up left to right; starting with a producer and ending with the highest order consumer (predator).

i.e. grass cow people

Explain that food chains demonstrate how energy is transferred among organisms. It is always linear and reads from left to right. When written, there are arrows showing the direction in which energy is being transferred.

i.e. grass  cow  people

Next, have a group of new volunteers come up and hand them each a card (from the food web pile) with strings attached. Ask them to look around at their group members and for each organism their predator consumes, they are to grab on of its strings, until they are all being held.

i.e. Carrot has 1 string, the rabbit has 2 strings, and the hawk and fox have no strings.

* Rabbit takes the carrot’s string
* Hawk takes one string from the rabbit
* Fox takes one string from the rabbit

Students should clearly see that this pattern is not linear. Explain that a food web is simply a network of food chains.

In the example, above they should also be able to identify that there are two higher order predators in the group that rely on a common food source. The web becomes even more apparent if you were to add more organisms such as a mouse and/or wheat or grain.

Have students get into groups of 4 and pass out 3-4 different food chain card sets (based on the ecosystem of Yellow Stone National Park) and ask them to put them into the correct order and then see how they can connect the chains to form a food web. Have them create drawings of their food chains and then how the food chains interconnect to create a food web.