

Lesson 5: Exploring the Food Web and The Ornate Box Turtle

Science Concept:

This is a confirmation lesson based on the concept of the food web/ chain and trophic levels that coincide with it. As a teacher your job will be to provide students with the question What does the food web of an Ornate Box turtle look like? You will then provide students with an answer represented in text that is not graphically represented. The students will be given all the predator prey information for the turtle via handout. You will explain the handout to the students. You may want to incorporate this in a lecture. The students job will be to confirm their understanding of the question “What does the food web of an Ornate Box turtle look like?” and answer by graphically representing the food web of the Ornate Box Turtle on a graphic organizer. This activity confirms students understanding of the concept of the food web and the essential question and answer.

Level of Inquiry:

Confirmation

California Content Standard:

6.5 b. Students know matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.

Lesson Objective(s): Students will graphically represent their understanding of the food web of the Ornate Box Turtle.

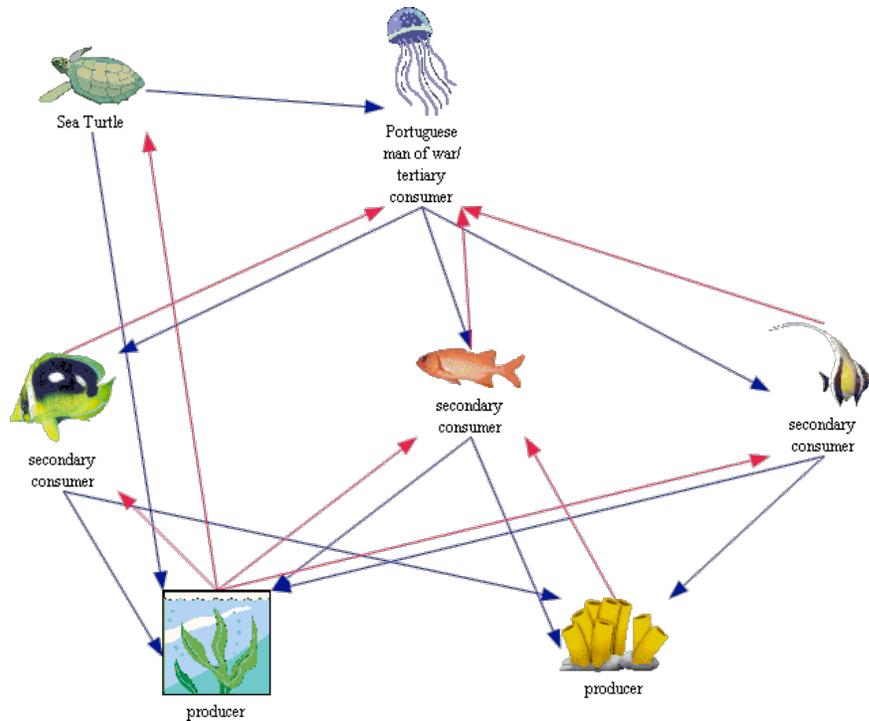
Conceptual Background:

The food web is a concept in 6th grade ecology that is brought up in multiple standards. In this lesson we teach about the food web by focusing on a specific animals function in the web, The Ornate Box Turtle. The SERC lab has two Ornate Box Turtles available for visits to your classroom that may serve as a great way to engage students in taking a personal interest in this specific type of turtle. Remember that this is the first level on inquiry confirmation and so you are giving students all the information they need to complete this process. They are demonstrating their understanding of the process by taking that information and arranging it in a graphical representation. Students first will work on a graphic organizer on their own which requires students to plug in information given to them in their fact sheet. Students then will work in pairs to create the graphical representation of the turtles food web.

Food Web Fact Sheet Ornate Box Turtles

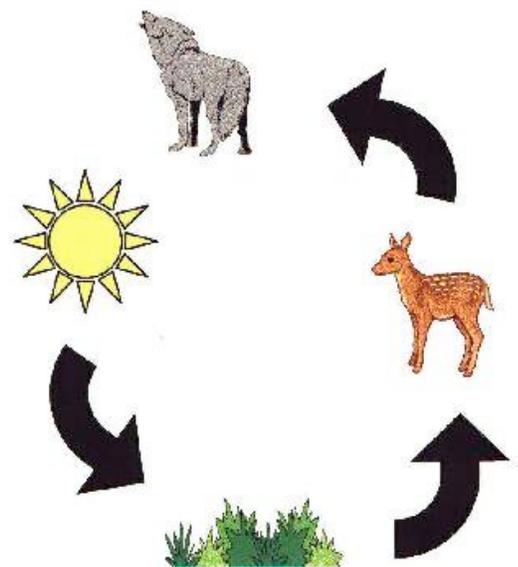
A food web is :A system of interlocking and interdependent food chains.

Here is an example of a food web that includes a sea turtle (Note this is not the same as a box turtles food web):



Food Chain Definition :1. A succession of organisms in an ecological community that constitutes a continuation of food energy from one organism to another as each consumes a lower member and in turn is preyed upon by a higher member.

Example of a food chain ----->



(Below Levels of

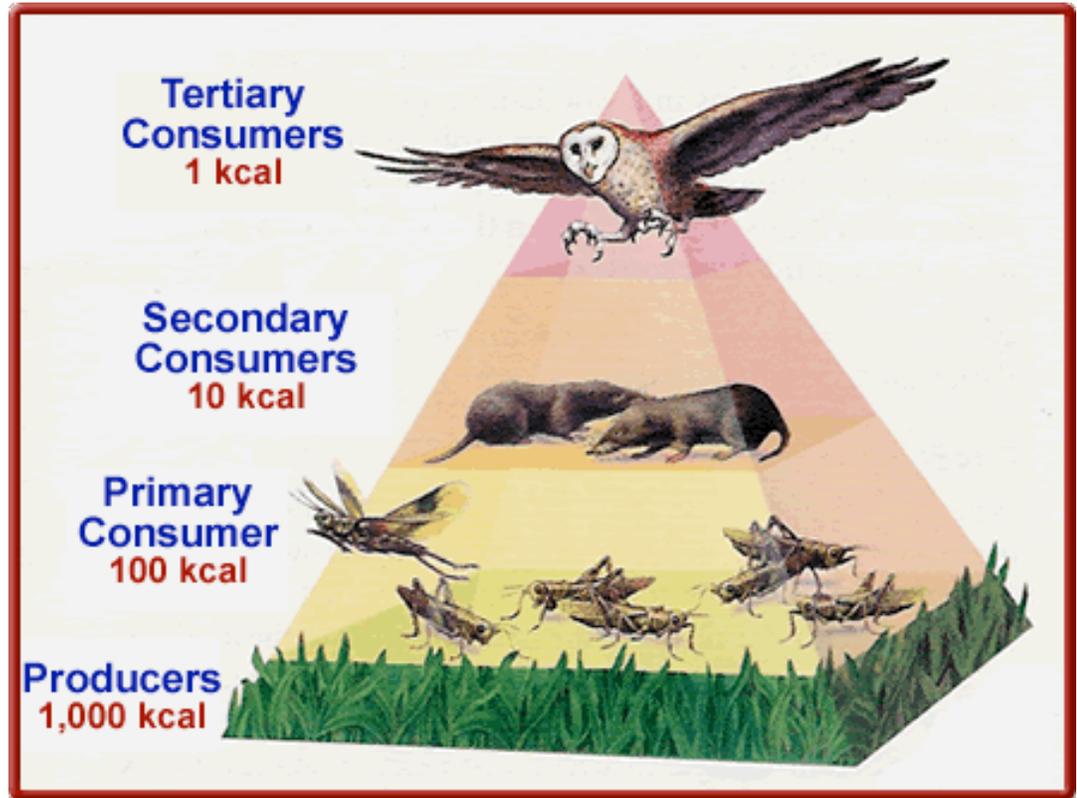
Consumers - Relevant to the Food Web)

What we know about the Ornate Box Turtle

Diet: Omnivorous =
To eat both plants and animals. Such as earth worms, beetles, fruit, leaves, and berries.

Predators:Red Fox, Raccoon, Striped Skunk, and the Eastern Hognose Snake

Place In Food Web:
Box Turtles eat lots of plants and bugs so they are omnivores. They hunt by essentially waiting for bugs to come near them. The Box Turtle is a second level consumers. The turtles eggs and newly born offspring are more often eaten by other animals rather than the adults due to the hard protective shell that adults have.



Student Instructions:

1. On your own design a fill out the food chain worksheet using the information you have been given above. Remember that a food chain requires that you use one plant or animal on each trophic level. Make sure to include the Ornate Box Turtle.
2. Once you are done with your worksheet discuss your answers with your elbow partner.
3. Now you will pair off with your elbow partners to design a food web including the ornate box turtle. Remember that a food web may have more than one animal at each trophic level. Use only the animals listed in this fact sheet. You should have four levels with multiple animals and plants on each level, except for the level you place the turtle on. You may use chart paper and markers to design, draw and decorate your food web.
4. Once you are done use the rubric to double check that you have included the necessary steps and items in your food web.

Rubric:

Student Name: _____

CATEGORY	4	3	2	1
Title	Title can be read from 6 ft. away and is quite creative.	Title can be read from 6 ft. away and describes content well.	Title can be read from 4 ft. away and describes the content well.	The title is too small and/or does not describe the content of the poster well.
Content - Accuracy	At least 7 accurate facts are displayed on the poster.	5-6 accurate facts are displayed on the poster.	3-4 accurate facts are displayed on the poster.	Less than 3 accurate facts are displayed on the poster.
Labels	All items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Almost all items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Several items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Labels are too small to view OR no important items were labeled.
Graphics - Relevance	All graphics are related to the topic and make it easier to understand. All borrowed graphics have a source citation.	All graphics are related to the topic and most make it easier to understand. All borrowed graphics have a source citation.	All graphics relate to the topic. Most borrowed graphics have a source citation.	Graphics do not relate to the topic OR several borrowed graphics do not have a source citation.
Use of Class Time	Used time well during each class period. Focused on getting the project done. Never distracted others.	Used time well during each class period. Usually focused on getting the project done and never distracted others.	Used some of the time well during each class period. There was some focus on getting the project done but occasionally distracted others.	Did not use class time to focus on the project OR often distracted others.
Trophic Levels	4 Trophic levels are represented.	3 Trophic levels are represented.	2 Trophic levels are represented.	1 Trophic level is represented.

(Teacher Answer Copy)

Food Chain Graphic Organizer

Directions: Above Each blank write the name of the animal that corresponds with the trophic level in the food chain of the Ornate Box Turtle. Use the levels of consumers and the predator and diet information on the Ornate Box Turtle to fill in the space.



1. ___GrassLeaves,Berries___

2. _____Bugs, Beetles_____



3. _____The Ornate Box Turtle_____



4. _____Red Fox (Other possible answers include the Racoon, Striped Skunk, and the Eastern Hognose Snake however these animals are likely to have predators not listed on the information sheet _____).

Name: _____ Date: _____

Food Chain Graphic Organizer

Directions: Above Each blank write the name of the animal that corresponds with the trophic level in the food chain of the Ornate Box Turtle. Use the levels of consumers and the predator and diet information on the Ornate Box Turtle to fill in the space.



1. _____ Producer _____

2. _____ Primary Consumer _____



3. _____ Secondary Consumer _____



4. _____ Tertiary Consumer _____

Lesson Implementation Plan:

Engage:

Introduce both or one of CERC's Ornate Box Turtles Bogart and Bacall to the class.

Have students ask questions about the turtles and write down the questions on the board.

Once students have asked the questions "What do they eat?" and "What eats them?". Take these questions and roll with them because that is what this activity is all about. The food web of the Ornate Box Turtle.

Explore:

You will provide the students with individual fact sheets which entail the definitions of the food web, food chains, and what the ornate box turtle eats, what its predators are and instructions for the activities they will be doing in class. Once you have handed out the sheets give students a minute to read over the sheets on their own. Use a document camera or projector to discuss and break down the various sections of the information sheets for the students. Discuss food webs, food chains, and trophic levels. You may want to expand on this information sheet and draw examples on the board as you see fit. Allow students to ask questions and answer relevant questions for the students. When your lecture or explanation is done instruct students to work on #1 the food chain worksheet on their own. Then tell them to continue onto #2 but stop before #3.

Explain:

When the majority of the class has shared their food chain worksheet answers with their elbow partners bring the class back together. Allow students to share out what they put as their answers on their worksheet. Have students explain their reasoning. Then supply them with the answers that are most correct and let them know why. An answer sheet to this worksheet is available at the end of the lesson. You have used this opportunity to clarify and explain the basis of the food web by allowing students to participate in a simplified version of the food web before having to graphically represent the food web in pairs.

Elaborate:

Have students do question #3 and #4 on the information guide. Hand out rubrics and explain to students that they want to aim to get all 4's on their rubrics. Supply an example of how to use the rubric for the students if they have never used a rubric before. The rubric is going to provide your students with the evaluative criteria necessary to complete the food web graphic representation. Students are encouraged to check their work with the rubric in order to make sure they have fulfilled all of the criteria necessary.

Evaluate:

Formative Assessment/s

- A. Discussions following pair share activities provide information about students prior knowledge and general understanding of the current information being presented to them.
- B. The Food Chain worksheet will provide you with information about the students understandings of the information they have been presented and also allow students to share

with the class their understandings. You will also be given the opportunity to correct misunderstandings at this stage.

Summative Assessment

A. Students will be working in pairs to graphically represent the food web of the Ornate Box Turtle in class. You will be measuring student success and understanding of the concept of food webs by grading the students based on a rubric that will be provided to students ahead of time for evaluative criteria.

Differentiation Plans:

Behavioral: Student will work with a peer who he/she considers a friend to ensure peer modeling.

Cognitive (below proficient):

Students will be placed with and near a peer at a cognitive level that is one step higher than him/her to ensure peer assistance throughout the lesson. The teacher will allow these students to talk to other students during the first activity which involves filling out a graphic organizer on their own. The visuals included about the food web, and food chain, as well as the trophic level pyramid are there so that these students can make visual connections to the concepts explained on the informational handout. The rubric will help these students to set goals and aim high as far as teacher expectations and evaluative criteria are concerned.

Cognitive (highly proficient):

Student will be placed with a pair who is on a cognitive level lower than him/her in order to provide peer assistance if required. Student will be able to work beyond the expectation for the food web project and provide detailed explanations and depictions of the food web. If this student finishes early provide them with the suggested reading book noted at the bottom of the lesson plan. This book is available at the San Jose's MLK Public Library in the children's section downstairs.

Language Demands:

Students will be placed with a peer who is familiar with his/her L1 to ensure peer assistance throughout the lesson. The class handout will be of paramount for these students as it focuses on both written and visual representations of the scientific concepts presented in the activity. This lesson is a writing optional activity in that ELL students can opt to draw pictures explaining concepts rather than write words. The good thing about these graphic organizers is that they do not require language proficiency to complete.

List of Materials:

Copies of Food Web/Ornate Box Turtle Handout
Copies of Food Chain Worksheet
Chart Paper
Pencils, Pens, Markers
Glue. Construction Paper.Scissors

Further Reading:

Turtles By Anita Baskin-Salzberg & Allen Salzberg

ISBN 0-531-20220-8

This book discusses turtles and tortoises their similarities and differences, eating habits, habitats, and much much more.