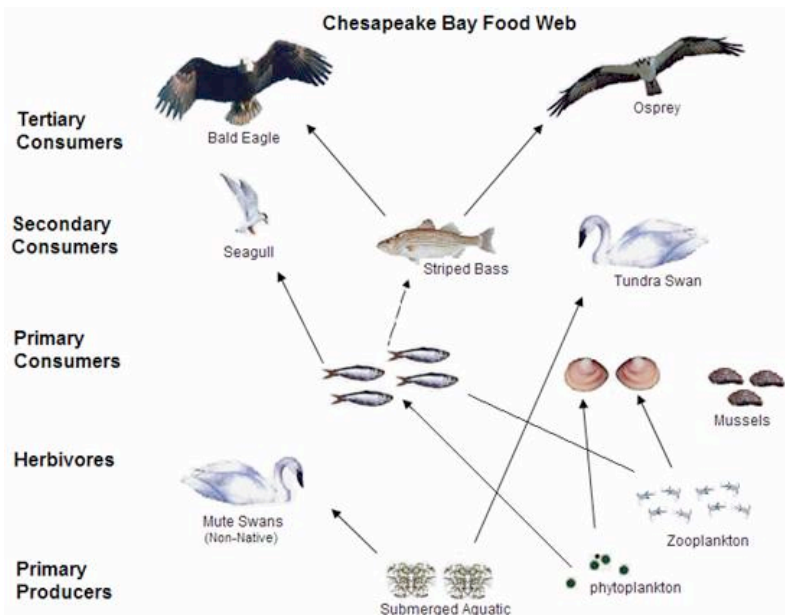


Competition –Another Relationship

Within ecosystems of any kind, from forests to open plains to coral reefs, some of the resources that support survival and growth are limited. Nature is an amazing thing. It has the ability to regulate itself in order to promote a healthy habitat for all living things. In order to maintain a healthy environment nature has a natural cycle of population increases and decreases.

If a population becomes too crowded the plants or animals must compete for the resources (food, water shelter and space) available. This creates an unhealthy environment, which causes the plants and/or animals to suffer.

Access to sunlight is important for plants; such as in forests with canopies that block out sunlight from reaching the ground and limited water causes plants to grow long roots. Competition occurs when many organisms within an ecosystem want to use the same resources and there isn't enough to go around.



Look at the Food Web and answer the questions below

1. What animals are competing for Phytoplankton and Zooplankton? _____
2. What animals are competing for submerged aquatic plants? _____
3. What animals are competing for the striped bass? _____

In the rainforest, many plants compete for sunlight. For example, strangler fig seedlings begin growing on other trees, itself around the host tree.

Watch the David Attenborough's BBC video on strangler figs from youtube.com. On the lines below tell how the strangler fig competes for sunlight.



Materials: brown paper lunch bag, Fruit Loops cereal, plastic zip-lock bag, timer/watch with second hand

What To Do:

1. You will be conducting two tests to compare interactions in ecosystems without competition to interactions in ecosystems with competition.
2. Your teacher will bring a brown lunch bag that is filled with Fruit Loops cereal.
3. One student from each group will reach into the bag without looking and carefully remove a handful of cereal.
4. Count the number of each color drawn from the bag and record the information in the data table below under “Without Competition.” Do not count broken or crushed pieces.
5. Place the cereal back inside the bag.
6. Your teacher will take you outside to a grassy area and scatter all of the cereal.
7. You will be given a plastic zip-lock bag for your collection.
8. You will have one minute to collect the resources from the environment. Do not push or take resources from other students.
9. Return to the classroom and count your cereal.
10. Combine your numbers with your group and place them in the data table under “With Competition.”
11. Make a double bar graph of your information on the next page. Make a key.

	Blue	Orange	Green	Red	Yellow	Purple
Without Competition						
With competition						



Use the information in the box for each resource and answer the following questions.

Resources

Blue-water
Orange- shelter
Yellow -sunlight
Green - food
Red - nutrients
Purple - space

Questions:

1. Compare the without competition and the with competition numbers. What differences do you see? _____
2. Which resource is needed most by plants? _____
3. Which resource is needed most by animals? _____
4. What happens if there is not enough of this resource? _____



Name _____ period _____

EXIT TICKET

Competition

1. Black walnut trees produce a nontoxic chemical that becomes highly toxic when it is exposed to air or soil. How does this chemical help black walnut trees compete with plants growing nearby?

- A. By attracting herbivores to the other plants
- B. By suppressing the growth of the other plants.
- C. By limiting the amount of water to other plants

Bird	Feeding Habits	Diet
Great blue heron	Usually stands still in the water near the edge of the pond, striking quickly at prey with its sharp beak	Fish, amphibians, reptiles, insects, small mammals, small birds
Mallard	Tips upside down to feed on underwater plants and seeds; picks up small prey and bits of food near the edge of the pond	Plants, insect larvae, seeds, earthworms, snails, freshwater shrimp
Pied-billed grebe	Dives in open water to find food on the bottom of the pond	Fish, crayfish, insects
Great egret	Wades or stands still in the water near the edge of the pond to hunt	Aquatic invertebrates, small fish, insects, amphibians, reptiles

2. Which of the birds in the chart above will compete with each other?

- A. The Great Blue Heron and the Mallard
- B. The Great Blue Heron and the Pied-bill grebe
- C. The Great Blue Heron and the Great egret

3. What resource are they in direct completion for?

- A. Food
- B. Space
- C. Water



Name _____ period _____

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