

SCUTES Food Webs and Harmful Algal Blooms Activity

The Food Web and Harmful Algal Bloom Activity illustrates how food webs are created, and how something like a harmful algal bloom can affect many different species.

Materials

- Species Badges
 - Spools of String
- *Note: Chalk may be used instead of the spools of string if activity can take place outside on an appropriate substrate for drawing with chalk.

Instructions

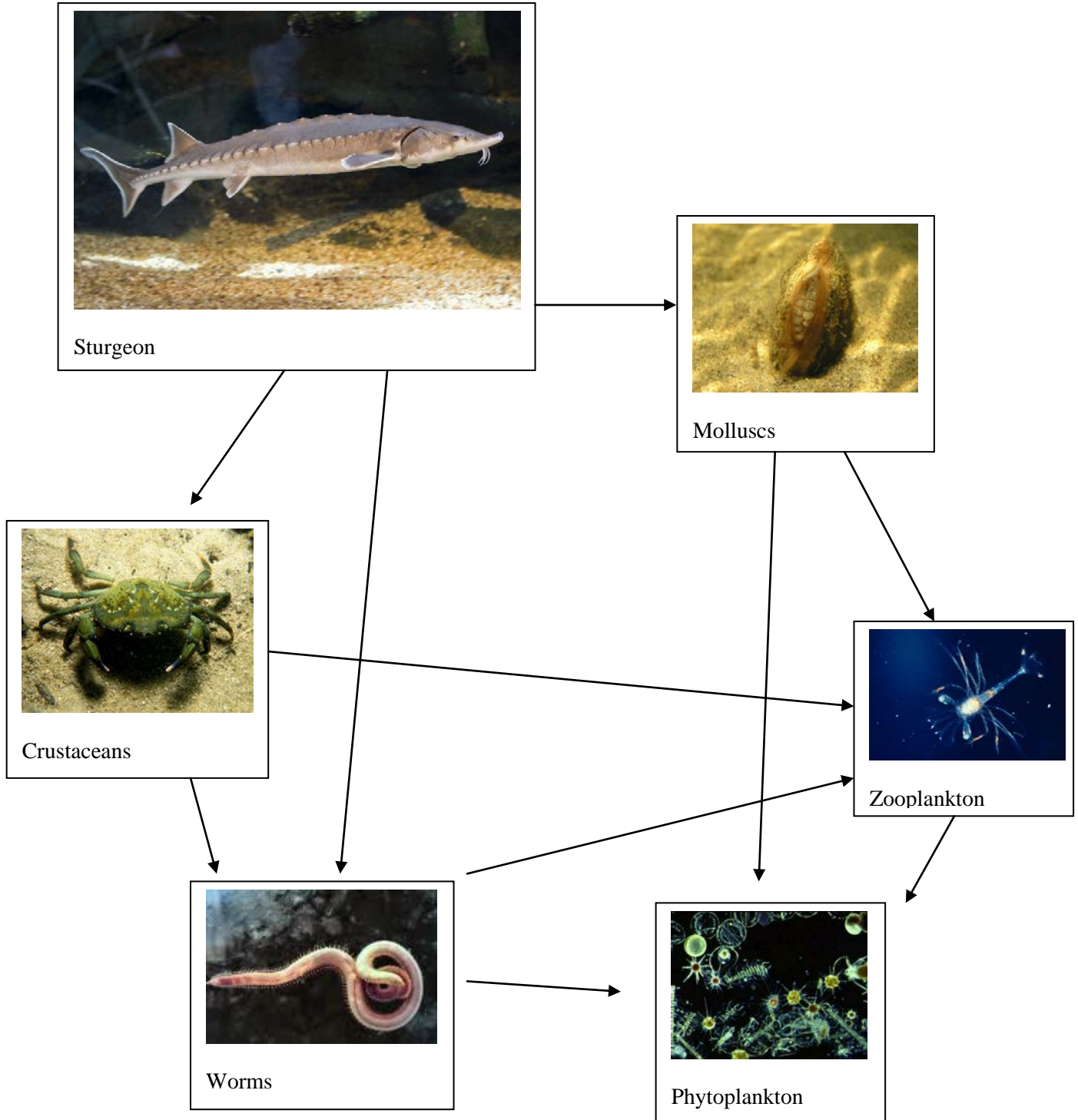
1. You will need a large area for the students to spread out and move around. This activity may be carried out in a large room with the spools of thread, and may also work well outdoors, or in an empty parking lot or basketball court with chalk.
2. Give the students the Food Web Description Sheet, and explain the concept of food webs, predators, and prey to the students.
3. Hand out species badges to students making sure to have at least three “phytoplankton,” and ensuring that one of the phytoplankton badges has the toxic pair of dinoflagellates on the back (do not point out that difference to the students yet).
4. If some students do not receive a badge, let them know that they will be participating in the web soon.
5. Give a spool of string to each student with a phytoplankton badge. Depending on the number of students, two or three spools may be given to each student with a phytoplankton badge. The number of spools should equal or exceed the number of students with Atlantic sturgeon badges.
6. Instruct the “phytoplankton” to give the end of their string of their spool to a species that would eat them, and allow the string to freely spin off the spool while that student takes it.
7. The next species with the string should hand the end of the string that they are now holding to the species that would eat them, but loosely maintain hold of the string so that it may continue up the food chain while the phytoplankton continues to allow the string to freely reel off the spool.
8. This should continue through as many species as possible, until the end of the string lands with the top predator of the group, Atlantic sturgeon.
9. If there are still extra students who have not received the string, have them grab onto the string where they can fit into the chain. For instance, if a “worm” gave the string to a “sturgeon”, a “crab” can hold onto the string between them.

10. Ask the students who have still not received the string to raise their hands. Ask them what phytoplankton eat/consume. If they can't figure out they consume the energy from the sun, remind them that phytoplankton can be considered as a type of plant or algae. Then ask the students if Atlantic sturgeon are at the top of the food chain, and if not, who eats them. Remind them that humans used to eat Atlantic sturgeon meat and eggs (caviar) before there was a fishing ban on them. Tell the students who are not holding onto the string that they may say "I am the sun" or "I am a human." The students who are "sturgeon" can now pass their string to the "humans." The "phytoplankton" can hold onto the string and pass the spools to the "suns." Once each spool has created its web, have the students look around the room to see how the web has spun around the classroom
11. Next, instruct the "phytoplankton" to look at the other side of their badges.
12. If their badge has the toxic phytoplankton, they should flip the badge over to show the pair of toxic dinoflagellates.
13. The "phytoplankton" with the toxic dinoflagellate on their badge is now a harmful algal bloom, and each species connected to their string has been affected. Take a few minutes to ask the class to look around the room to see how many species have been affected by the toxic algae. Ask the students to raise their hand or sit down if they have been affected to show the effects of toxic algae.
14. The activity is finished, however you may run through the activity several times to give each student the opportunity to be at the bottom or top of the food chain, and to see the different web patterns they come up with.

Discussion points:

- Who is affected by harmful algal blooms (HAB)?
- What might be causing HABs to increase?
- What are some ideas for decreasing the instances of HABs?
- What are the implications for Atlantic sturgeon if HABs increase?
- What are the implications for humans if HABs increase?

Food Web Description Sheet



Crab

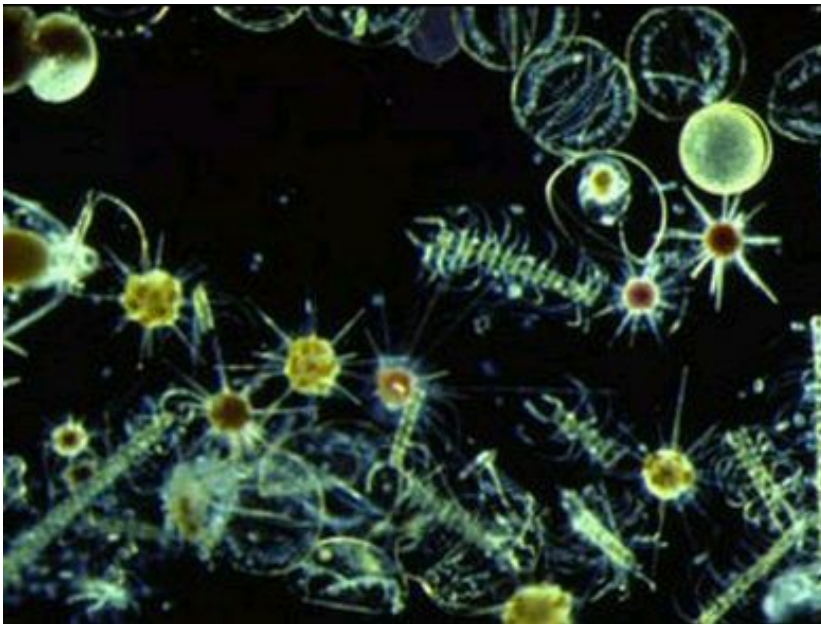


Mussel





Phytoplankton



Atlantic Sturgeon



Zooplankton



Bloodworm



Polychaete

