

CURRICULUM SUPPLEMENT

For use with the **ACTION** section of Meltdown

ACTIVITY ONE: PUTTING IT ALL TOGETHER

Materials:

- Completed **Get to Know an Invert and WANTED** worksheets
- Species cards from *Get to Know an Invert* activity
- classroom table arrangement that allows students to work in groups of four
- large piece of butcher paper (one per group)
- Discussion objectives sheet (one per group)
- colored pens and pencils

Teaching Time: 30 minutes

Preparation: 15 minutes

Lay out butcher paper and pens on each table ahead of time. Review discussion objectives and look over the next lesson (making a mobile).

Background:

With the background knowledge they've gained in the previous lessons, your class is ready to be building the food web.

In this discussion based activity students will share their knowledge, working with their group to determine how different species are interconnected. Butcher paper on each table will be used to construct a concept web linking species. Students will expand their discussion beyond the invertebrates studied by each group member, looking at how fish, birds and marine mammals into the ecosystem.

In the next lesson, students will use the concept map they've created to develop a food web mobile.

Directions:

1. Break students into table groups. Do your best to arrange student so that each individual group member has researched a different species.
2. Review the concept of trophic levels. As a class, brainstorm examples of producers, primary consumers, secondary consumers and tertiary consumers and decomposers.
3. Explain to the class that together with their groups they will be breaking the organisms they've studied into trophic levels. In addition they'll be working together to look at how different species fit together to form food chains.
4. Pass out a printed copy of the discussion objectives to each group.
5. Give students time to work together with their group, circulate around the room providing guidance and spurring discussion as needed.

Discussion:

As you move around the room, check for understanding with questions:

- How many people researched a species that fed directly on algae?**
- **What animals preyed on your species?**
- **Was your species a primary or secondary consumer?**
- **Which invertebrate in your group is at the highest trophic level?**



Conclusions:

Working as a group, students begin to see the complex interworkings of an ecosystem. Throughout this discussion students are challenged not only to explain what they've learned about the specific needs of their species, but to expand upon this, exploring how their species fits into the larger system.

Recognizing the trophic levels of different species is an important step in beginning to build a food web. This ability to correctly categorize species is dependent on a solid understanding of how different species are connected to one another. All these skills will be helpful as students' transition into the following activity- turning their food web into a mobile.



GROUP FOOD WEB DISCUSSION

Pick roles for your group members:

- 1 group facilitator (in charge of keeping discussion on track)
- 1 group orator (in charge of presenting what you've discussed to the class)
- 2 group recorders (in charge of taking notes throughout the group discussion)

Have your group facilitator read the following out loud:

Your goal in this discussion is to begin to discover how the different species you've studied fit together in the ecosystem. We will work as a group to answer the questions below. Our group recorders will take notes on butcher paper at the table. When we've completed our discussion, our group orator will share our findings with the class.

Discussion questions:

- 1.) Take turns sharing the species you studied. Show a picture and tell your group what it eats, who its predators are, and what trophic level you think it is.
- 2.) Which group member's invertebrate is at the highest trophic level in the food web? Which species is at the lowest trophic level in the food web?
- 3.) Does any group member have a species that is eaten by another group member?
- 4.) Who are the primary producers in a marine ecosystem? Who is the top predator (tertiary consumer)?
- 5.) Using each your species, draw a food chain that accurately connects the invertebrate to plants or animals consume and are consumed by. Be sure to add vertebrates like fish, birds and mammals as necessary. Use arrows to show the relationships between different plants and animals. Repeat this for each of the invertebrates studied by your group.
- 6.) Do your different food chains overlap? If so, combine them to create larger food webs.

CHALLENGE QUESTION: If the primary producer in your food web disappeared, what would happen? Would the result be the same if your tertiary consumer disappeared instead?

