

Whale Jenga Food Web Game



Cabrillo
Marine
Aquarium

Baleen whales feed on crustaceans such as amphipods, copepods, and krill, as well as small fish. With changes in ocean temperature, upwelling, acidification and other urban influences, whales can be impacted through the food web. This game demonstrates the relationship between the trophic levels of a food web in the ocean and the potential impact of humans on that food web. Everything is connected. If the balance on one level is disturbed too much by climate change, the other levels will be affected and potentially the food web will collapse.

Note: Printouts for cards and images of phytoplankton, krill, fish, and whales can be found at the bottom of the page:

<http://www.usc.edu/org/cosee-west/forinformalscienceeducators.html>

Game Contents – 1 set of Jenga

21 green blocks (Phytoplankton)
12 blue blocks (Zooplankton)
12 red blocks (Krill and small fish)
1 purple block (Whales)
1 stack of playing cards
Informational whale cards
food web diagram
vocabulary

Directions

Preparing the game:

1. Color the ends of Jenga blocks as specified above.
2. Glue images of the organisms on the sides of the blocks to match.
3. Print out playing cards and informational whale cards.
4. Print whale food web card

Game set up:

1. Place three green blocks side by side with pictures facing out. Place three more green blocks on top of the first layer cross-ways. Continue to stack green blocks this way until all are used up.
2. Stack blue followed by red blocks on top of the green base until all blocks are used up.
3. Place the purple block on the very top. The stacked up blocks represent the food web for Baleen whales in the ocean.
4. Shuffle the playing cards and stack them upside down.

Focus Questions:

- *If the ocean is so large, why do small changes make a difference?*
- *How can something as large as a whale be impacted by changes in the ocean?*

Learning Procedure:

Explain to the students that this game is a representation of how changes can impact the stability of a whole system. Prior to the game introduce vocabulary to ensure understanding of terminology used on the cards.



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Playing the game:

1. The first player picks a card, reads it aloud and follows the instructions written on the card. Only the block being removed or returned may be touched. (You are not allowed to hold the rest of the stack together while removing the blocks.)
2. Put the used cards into a discard pile.
3. Place removed wood blocks into a discard pile off to the side.
4. Continue to take turns until the tower falls and the food web collapses or all cards are used up.
5. Reset to play again using the directions above.

Review questions:

1. What surprised you in playing this game?
2. What did you discover about human influences on the environment?
3. What questions would you like to investigate further?

Extension:

1. create additional cards for the game
2. look for local impacts on the ocean that could influence the food web and find solutions you can facilitate.

Additional resources:

American Cetacean Society Whale Pages:

- Blue Whale: <http://www.acsonline.org/factpack/bluewhl.htm>
 - Fin Whale: <http://www.acsonline.org/factpack/finwhl.htm>
 - Gray Whale: <http://www.acsonline.org/factpack/graywhl.htm>
 - Humpback Whale: <http://www.acsonline.org/factpack/humpback.htm>
- Image of baleen whale food web

Ocean Literacy Principles 5 and 6

Climate Literacy Principles 3A,C,E and 6C,D,E