FEEDING TIME!
ACTIVITY GUIDE

Overview:

Have you ever wanted to be a blue whale lunging for food? Participants will have their chance in this activity as they explore how food gives blue whales the energy to make migrations that are thousands of miles in length. They will collect "food" and then move their blue whale game piece through its migration path to the Gulf of California on a board game.

Target Age:

All Ages, Family Multigenerational

Prep Time:

5 minutes

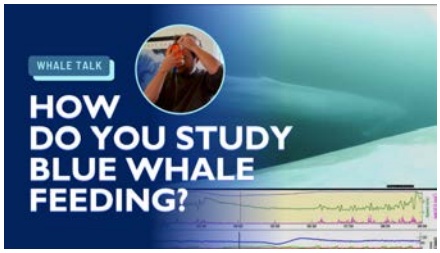
Activity Duration:

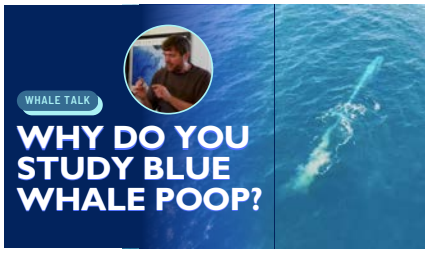
10-20 minutes

Perfect for:

Home, libraries, open space indoors, outdoor learning, small groups

Supporting Videos & Interactive at http://bluewhalesfilm.com/education





Materials & Set-Up:

- Flat, open area of at least 15ft x 6ft (This can easily be done in a hallway, carpet area, playground, etc.)
- 50-100 colorful balls or pit balls
- Skateboard or low-lying cart
- Various feeding tools (i.e., cardboard box, net, tongs, colander)
- Small granular food in a container (optional)
- Small sample of krill in a container, or any small objects measuring 6 centimeters (optional)
- Feeding Time Board Game (printed)
- Whale board game pieces (printed)
- Scenario cards (printed)
- Calculator

Feeding Time! Instructions Part 1

Excite:

1. Ask participants what they think the world's largest animal, a blue whale, eats?
2. After they share their answers, confirm that they eat krill. Krill range in size from less than 1 centimeter to as big as 6 centimeters. Show samples of krill, the picture of the krill down below, or any small objects about the size of a paper clip for participants to notice how small they are in size. Does it surprise them that an animal that can be as big as 3 large school buses eats these tiny creatures?
3. To make the concept relatable, compare the idea of humans eating food the size of sprinkles, or another small, granular food that is relatable, such as salt, sugar, etc. How many sprinkles would we need to eat to feel full? How many sprinkles would we need to eat in order to have enough energy for our day-to-day tasks?

On average, a krill is about the size of a paper clip.

Explore:

1. Explain to participants that they are going to pretend to be hungry blue whales feeding in the "ocean," and the "krill" are the colorful pit balls that are dispersed on the floor. They are going to catch as many krill as possible to fuel themselves to help them "migrate" from Monterey Bay to the Gulf of California on a board game in the second part of this activity.
2. Show participants different feeding tools they can choose from to catch krill. The cardboard box, net, and colander can represent a feeding method comparable to baleen whales, while tongs can be a method similar to how penguins feed. Have them choose one tool.
3. Participants will lay down on the skateboard or cart and "lunge" through the patch of krill to catch as many as they can in one go with the feeding tool of their choice. On smooth surfaces, the skateboard rolls further and faster, so suggest that participants may use the tip of their shoes as brakes.
4. Once the skateboard or cart has come to a complete stop, count how many krill were caught, and move their game piece the appropriate amount of spaces on the board game (more information in Part 2). Don't forget to place the krill back into the "ocean" for the next "whale"!
5. If time allows, participants can repeat steps 3 and 4 using the same tool or a different one to catch more krill for the migration.
6. Help participants reflect on their feeding experiences. Some questions you can ask are:
    a. How many krill did you catch with different tools and methods?
    b. Which method/tool felt like it took more energy to catch food?
    c. Which method do you think is most similar to how a whale catches krill?

Feeding Time! Instructions Part 2

Excite:

1. Now that you have your krill, you have energy! How do you think the whale may use this energy?
2. Blue whales need energy to migrate and get to their breeding grounds.
3. How far will your whale travel with the energy it got from eating krill?

Explore:

1. Each participant will choose a whale board game piece to move along the migration path. Depending on how much krill the whale has "eaten" in the first part of the activity, that determines how far the whale swims on the map. The first whale to make it to the Gulf of California wins!
2. Blue whales can eat up to 40 million krill a day, that's a lot of nutrients for energy! Decide how many krill it will take to move a space on the board game. For example, if you want a quicker paced game, 1 ball, or krill, can equal one move, but if you want a slower pace, it might take 10 balls to move a space.
3. If participants land on a space with a jellyfish or sea stars symbol, draw a corresponding card to see what is affecting their migration. They may run into some scenarios that could help or hinder their migration.

Here are other ways to "catch krill"!

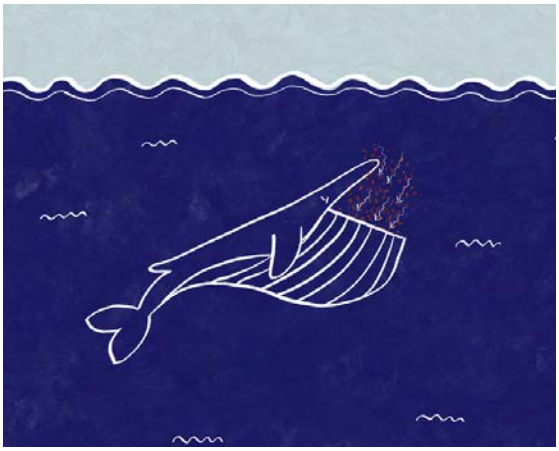
- Fill a large container with water and water beads. The water beads are the krill that participants need to catch and "eat". Guests use different tools to catch their prey in the container, such as a net, fork, salad tongs, or colander. The water beads can be counted or weighed to determine how many spaces their game piece can advance on the board game!

- Use dice to see how many millions of krill are eaten with each roll. For example, if a participant rolls a 5, they've consumed 5 million krill. Decide how many krill warrants a move on the board game.

Feeding Time! Explanation

Explain:

1. Show the video of a blue whale lunge feeding in the Virtual Field Trip video at http://bluewhalesfilm.com/videos or another video at https://youtu.be/YARe1etnNZE?t=35
2. Ask questions to help participants make some connections to their exploration.
   a. Why do you think a blue whale eats this way?
   b. Which method/tool did you use that was most similar to how a whale catches krill?
   c. How is the whale in video similar or different to how you were "feeding" with the toy balls?
   d. Do you think a blue whale considers how much krill is present before it lunges?
3. Explain that the lunge feeding strategy is a very specialized way for the blue whale to eat as much as it can. When it spots a worthy krill patch, it accelerates towards it and opens its mouth big and wide, while the stretchy layer of muscle and fat in its throat expands. This allows it to take a one, enormous mouthful of water and krill. But the whale doesn't swallow all that water. It pushes it back out through these bristly plates called baleen, which act like a filter to catch the krill. When the water is gone, the whale swallows all the krill that's left in its mouth.



4. The migratory patterns of blue whales rely upon the distribution of krill; they go where the food is. Scientists are researching to learn more about the migratory patterns of blue whales.

Researchers capture fecal plume to learn more about whales.
(Image: David Cade, permit #21678)

Active Research & Conservation:

1. Whale poop! - Scientists are interested in collecting samples of blue whale poop in order to learn more about the species and their feeding habits. A whale's poop provides a lot of nutrients for planktonic organisms, which are the basis of the food chain for ocean ecosystems.
2. Whale poop can reveal things that are affecting them in positive or negative ways. Scientists can learn if a whale is stressed or if their water is polluted with plastics. They can also find out if it is getting enough nutrients or even if the whale is pregnant just by studying their poop!
3. Our actions can directly impact the blue whale populations. Ask participants to predict what would happen if there were less whales and therefore less poop. How would that impact the health of the ocean?

Feeding Time! Extension Activities

Make your own board game!

What's an animal in your environment that needs to fuel itself to get energy to move? Go outside and make observations of local animals feeding. What do they eat? How do they eat? What do they do? Create your own board game to show what the animal uses its energy to accomplish.

Time to chow down!

Have you ever thought about how you eat and what tools you use? Put out a variety of food (or objects that represent food) along with some different tools, such as forks, spoons, ladles, sifter, chopsticks, etc. What would you use to eat the different types of food? Would you eat soup with a fork? What about a bowl of gummy worms?

What's in a label? What's in a krill?

Read and compare nutrition labels to learn how many calories different foods provide. How many calories do you consume a day? Keep in mind that more calories doesn't necessarily mean that they are nutritious and good for you! Create a nutrition label for krill. How many krill would you need to eat for a 2,000 calorie diet?

Track blue whale locations and routes.

Are you wondering where you might find blue whales? Visit happywhale.com or gtopp.org to see where in the world blue whales (and other species) have been sighted.

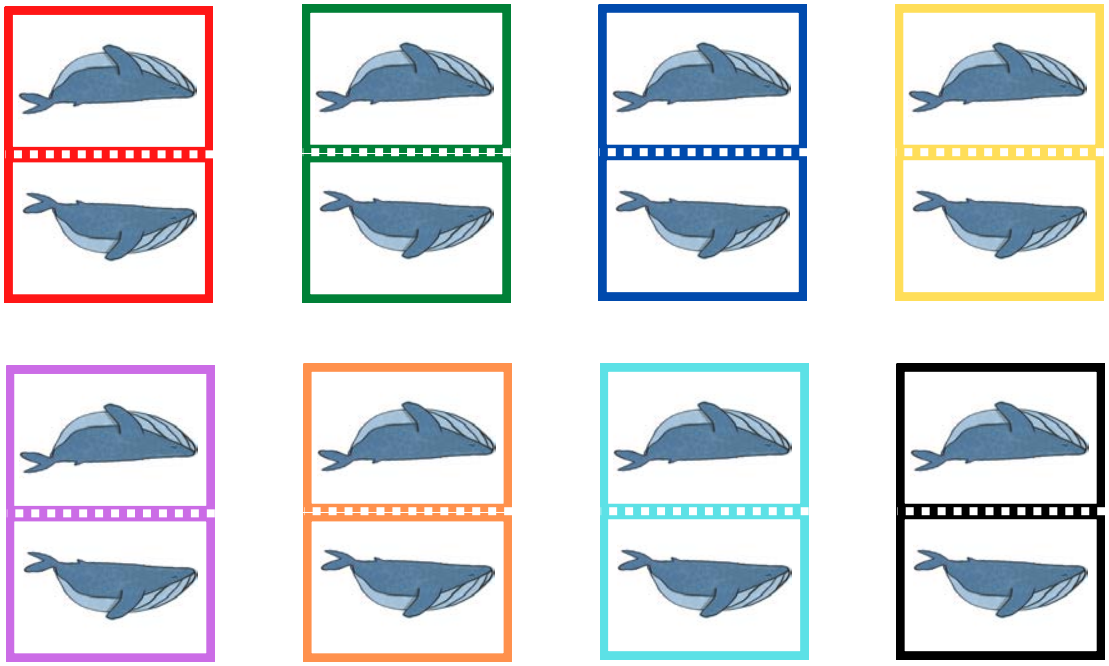
Krill Grab!

Use a cash-grab machine and have participants catch "krill" inside, using different tools and feeding methods. Try different objects to represent krill such as pom poms, feathers, or even homemade "krill cash".

Pacific Ocean
Monterey Bay
Gulf of California
Mexico
U.S.A.

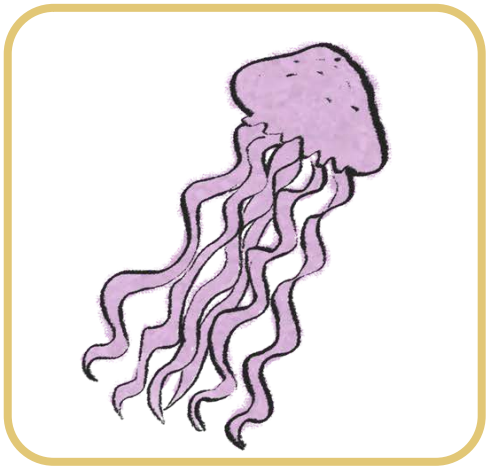
Game Pieces - 1 of 6

1. Cut out the game pieces.
2. Fold at the dotted line.
3. Clip each one with a binder clip and stand upright.



Scenario Cards

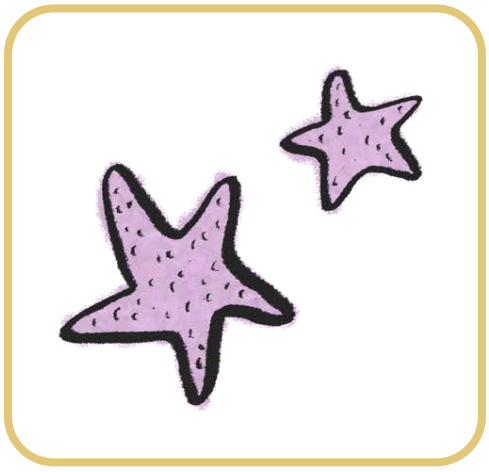
1. Cut the game cards apart.
2. Fold on the dotted line.
3. Glue or tape the sides together.



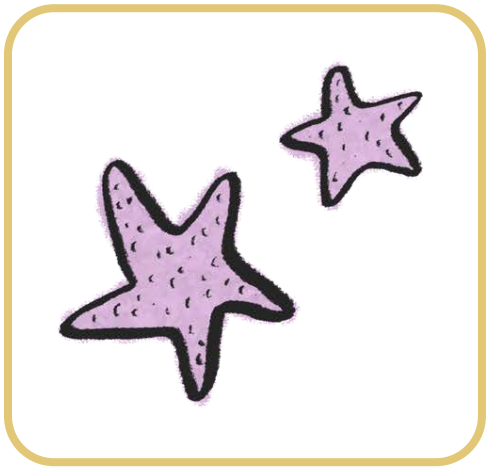
UH OH!
Warm waters ahead. You'll have to hang back for a little while. Go back 2 spaces.

Scenario Cards - 2 of 6

Cut the game cards apart. Fold on the dotted line. Glue or tape the sides together.



GREAT!
You caught a current that helps you swim faster. Move ahead 3 spaces.

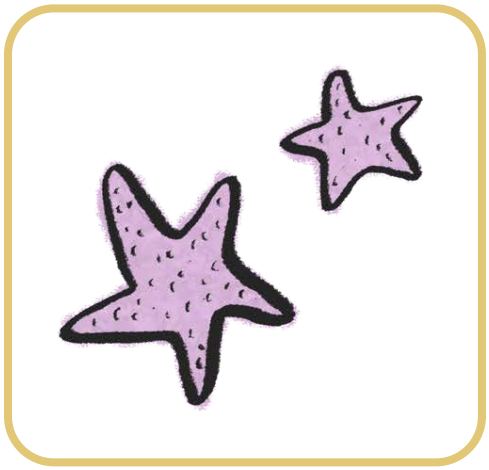


YUM!
You found a surprise patch of krill! Move ahead 3 spaces.

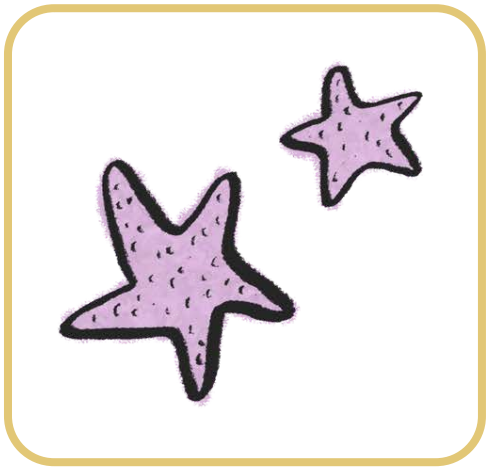
AHHH...
The sea is quieter in this spot, and you can navigate better. Move forward 2 spaces.

Scenario Cards - 3 of 6

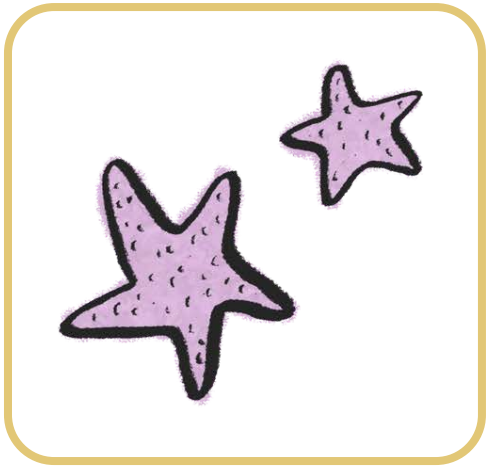
Cut the game cards apart. Fold on the dotted line. Glue or tape the sides together.



WEEEE!
You play with a friendly pod of dolphins. Move ahead 3 spaces to keep up.



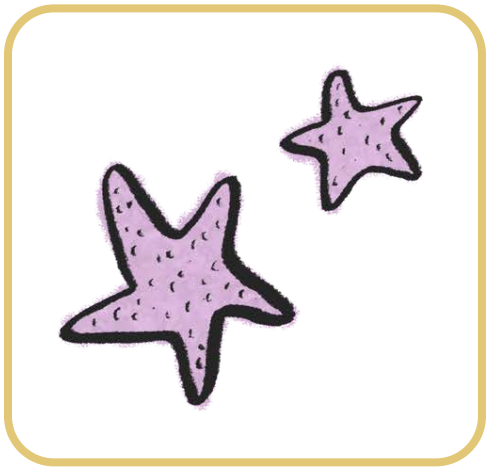
YUM!
You hear another whale calling from afar. Sounds like they found some extra krill! Move 3 spaces forward to join the feast.



AHHH...
There were very calm seas today. Move ahead 2 spaces.

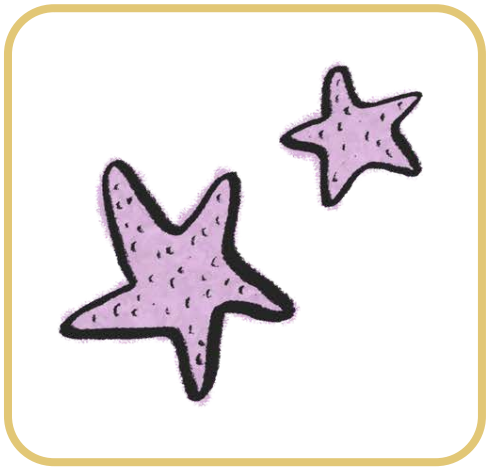
Scenario Cards - 4 of 6

Cut the game cards apart. Fold on the dotted line. Glue or tape the sides together.



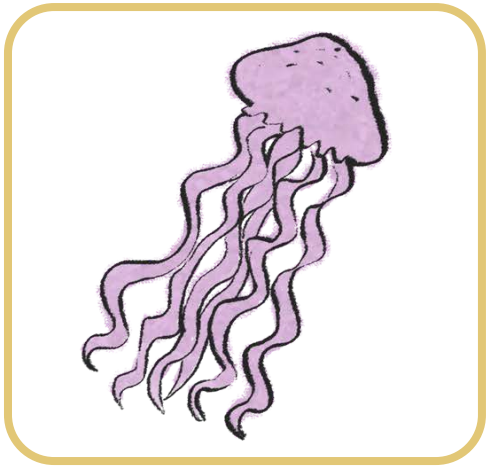
WEEEE!

You had enough energy to speed up to 30 miles per hour for a short burst. Move forward 3 spaces.



YUM!

Some nearby whales have found another patch of krill. You join them in the feast. Move forward 3 spaces.

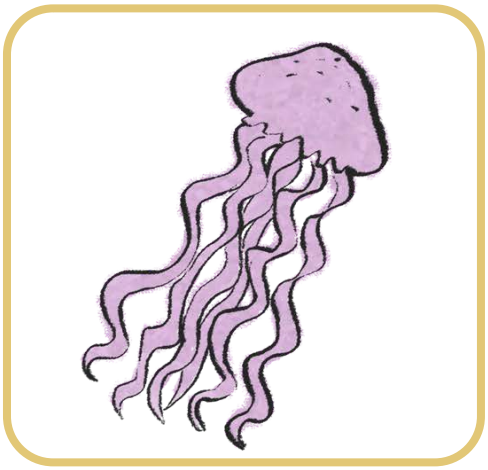


YIKES!

The sound from large cargo ships threw you off course a bit. Go back 2 spaces.

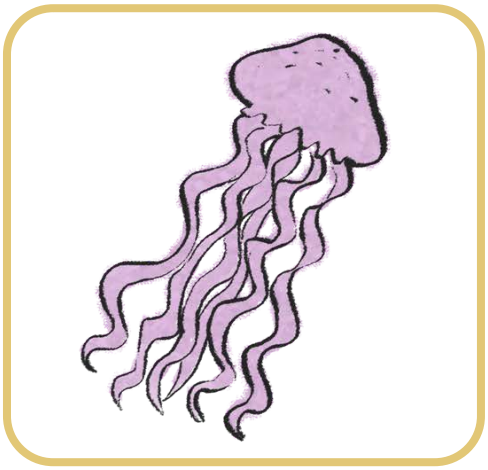
Scenario Cards - 5 of 6

Cut the game cards apart. Fold on the dotted line. Glue or tape the sides together.



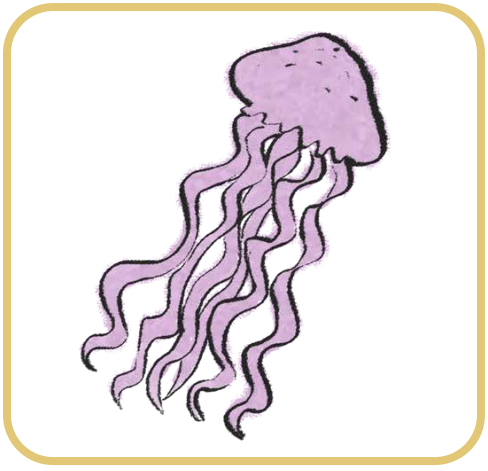
UH OH!

There are lots of big ships in this area. You don't want to get hit. Go back 3 spaces.



OH NO!

You're in water that is a little too warm. Go back 2 spaces.

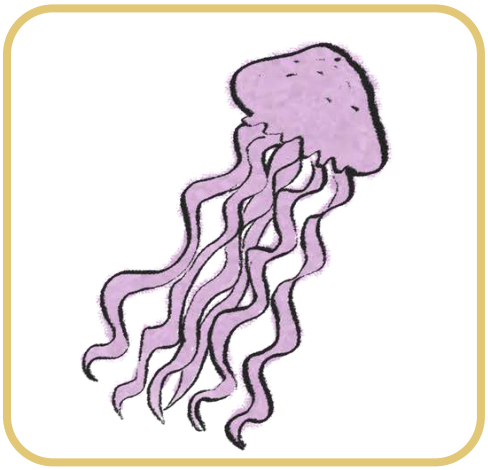


YIKES!

There's noise pollution from lots of loud boats and ships. Move back 3 spaces.

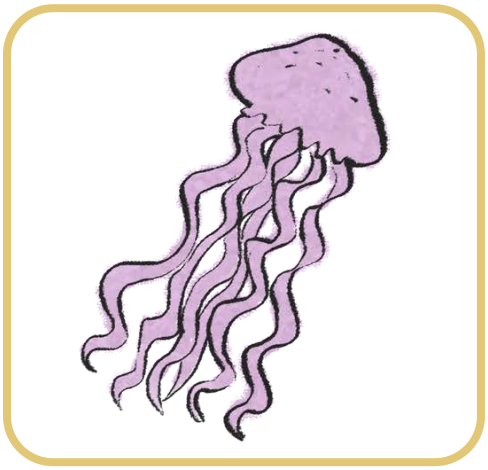
Scenario Cards - 6 of 6

Cut the game cards apart. Fold on the dotted line. Glue or tape the sides together.



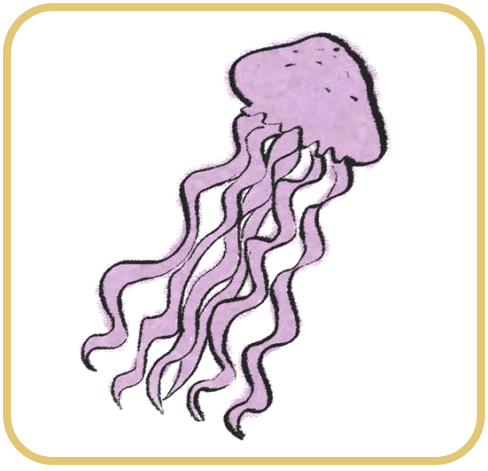
UH OH!

The noise from a helicopter overhead confused you. Go back 3 spaces.



OH NO!

This area has lots of plastic floating around. Go back 2 spaces into cleaner water.



YIKES!

There are some old fishing nets that you don't want to get tangled up in. Go back 3 spaces.