Name_____

1st Expedition

Preview Questions

1. What percentage of the earth is covered by oceans?
2. Do you think more life exists in the oceans or on land?
3. What are some of the ways in which the ocean affects life on land?
4. Do people have an influence on what happens to life in the ocean? In what way?

Follow Up Questions

1. Why would it be necessary to study life in the ocean to learn about life on the land?
2. In what way does the ocean affect our daily lives?
3. What effect does dumping trash and chemicals into the sea have on aquatic life? How does this affect life on land?
4. How has technology helped Sylvia Earle to explore the sea?
5. What did the Tektite II experiment enable the scientists to do?
6. How have whales and other mammals adapted to the marine environment?
7. Why do bottlenose dolphins do well in captivity?
8. Do you think it is important to protect life in the sea? Why or why not? What kinds of controls could be established to help protect sea life?
9. What qualities do you think would be necessary to become a marine biologist? A deep sea diver? Do you think this would be an interesting profession? Why or why not?

2nd Expedition

Preview Questions

1. What do you think scientists learn about the world by studying whales?
2. Where do you think scientists who study whales do their work?
3. How do you think whales eat?
4. What other kinds of whales are there besides humpbacks?
5. Would it make any difference if whales became extinct?

Follow Up Questions

1. How do Carole and Stormy combine their work in the field and in the lab? Do you think this is a good way to work? Why or why not?
2. What is the significance of the fact that whales are at the top of their food chain?
3. What was the purpose of the aerial survey? What did Carole and Mark learn from it?
4. What is the main difference between the way baleen whales eat and the way toothed whales eat?
5. What are some types of baleen whales?
6. Why are right whales the most endangered (that is, in danger of becoming extinct) of whale species?
7. How is it possible for species to come back from near extinction? What is an example of a whale species that is no longer near extinction?
8. What special talent do toothed whales possess? How does this process work?
9. What is one way in which beluga whales are well adapted to their environment?
10. Humpback whales can be identified by the patterns on their flukes. How are individual members of the some of the other species of whales identified?
11. What are some ways that humans cause the extinction of an animal species?
12. Do you think it would make any difference if humpback whales, or any other whale species, became extinct? Why or why not?

3rd Expedition

Preview Questions

1. What do you think the bottom of the ocean looks like?
2. What can you tell about the ocean by looking at a regular world map? What information does such a map not give you?
3. How do you think scientists gather information about the ocean bottom?

Follow Up Questions

1. What can you tell about the ocean from an oceanographer's map that you can't tell from a regular map?
2. What is the deepest known point in the ocean? How deep is it? What are the abyssal plains?
3. What does an echo sounder measure? How does this instrument operate?
4. How is the information from echo sounders used to make a contour map?
5. How did Kim Kastens and Mary know where on the map to write the appropriate depths?
6. What do the different colored areas on a contour map indicate?
7. What does Bill Haxby use to gather information about the sea floor? How does this method work?
8. What do height differences on the ocean surface tell you about the features on the ocean bottom?
9. What are the advantages of using satellite measurements? What are the advantages of using an echo sounder?
10. Do you think learning about the ocean bottom has any relationship to life on land? If so, what?

4th Expedition

Preview Questions

1. Do you think whales have always been sea creatures? Why or why not?
2. How do you think scientists could learn more about the ancestors of whales?
3. What actually causes changes to take place in living things over millions of years?

Follow Up Questions

1. Why does Smithsonian need such a large college of specimens?
2. What characteristics of mammals do whales have?
3. What does vertebrate paleontologist study?
4. What did R. Whitmore find when he traced back the whale fossils?
5. How had the position of the blowhole changed over the years?
6. What conclusions did Dr. Whitmore draw from comparing the skulls of a dog and a 50 million year old whale?
7. What caused whales to adapt to living in the water?
8. Why are genes referred to as the "blue print for life"?
9. How do you think life on earth might change in the future? How do you think human beings might evolve to adapt to these changes?
10. Do living things always adapt successfully to a changed environment? Give some examples to support your reasoning?

5th Expedition

Preview Questions

1. What kinds of creatures besides whales and fish live in the sea? What kinds of creatures live on the sea floor?
2. What do you think scientists can learn by studying marine animals?
3. Do all parts of the ocean have the same environment? How might one ocean environment differ from another?

Follow Up Questions

1. Why do scientists at the Woods Hole Marine Biological Laboratory study sea creatures?
2. What makes Woods Hole a good location for a marine biological laboratory?
3. Sea robins have chemoreceptors to help them find food. Do human beings have chemoreceptors? What are they used for?
4. How has the horseshoe crab been used to benefit humans?
5. How did John Valois known where to look for the various creatures needed by the laboratory?

6th Expedition

Preview Questions

1. Why do you think the sounds humpbacks produce are called “songs”?
2. Why do you think humpbacks “sing”?
3. What do you think scientists hope to learn by studying the humpbacks’ songs?
4. What makes a series of sounds a song?

Follow Up Questions

1. Why do some scientists think that the humpbacks’ songs may be related to mating behavior? What are some other theories that attempt to explain why humpbacks sing?
2. How does a whale’s song differ from a birds song?
3. How does Katy Payne record whale sounds?
4. How would you describe the structure of a humpback’s song?
5. What is unique about the way in which humpbacks “compose”?
6. Do you think the study of the humpbacks’ songs is valuable research? Why or why not?
7. Why is it so difficult for scientists to be really certain of the meaning of the humpbacks’ songs?

Expedition 7

Preview Questions

1. What do you think the title “Hands Full of Words” refers to?
2. Do you think a deaf person can hear any sounds?
3. Do you think it was difficult for Judy Pratt, who plays Sally Ruth to act in “The Voyage of the Mimi”? Why or why not?

Follow Up Questions

1. What is unique about Gallaudet?
2. How did the profile of Judy’s hearing differ from that of Mary’s?
3. Which sounds are hardest for Judy to pronounce? Why?
4. What was the purpose of the program being developed in the audiology lab?
5. In what ways was Mary’s experience at Gallaudet similar to Judy’s experience in filming “The Voyage of the Mimi”?
6. In what kind of situation is communication most difficult for Judy?
7. How does Janice Adams, who is both deaf and blind, know what other people are saying?
8. What are some of Janice’s hobbies?
9. What is unique about the Gallaudet football games?
10. What is your impression of Janice Adams?

Expedition 8

Preview Questions

1. What do you think might cause the worst weather in the world?
2. What information do you think meteorologists need in order to forecast the weather?
3. What special challenges do you think meteorologists face?

Follow Up Questions

1. Why was the trip to the top of Mt. Washington hazardous?
2. What services does the Mt. Washington Observatory provide?
3. What causes the ice build up on the Observatory's instruments?
4. What do the meteorologists do inside the weather station?
5. Why is the wind speed so fast at the top of the mountain?
6. What other factors contribute to the bad weather?
7. According to Ben, in what ways is the weather at the top of Mt. Washington the worst in the world? The best in the world?
8. How does weather affect our everyday lives?

Expedition 9

Preview Questions

1. What is the normal temperature for the human body? Is the temperature on the surface of the skin the same as the temperature inside the body?
2. Do you think the temperature of the human body is affected by the temperature of the air and by other aspects of the climate?
3. How do human beings protect themselves against extremes of temperature?

Follow Up Questions

1. How were the temperatures at different places on Ben's body measured?
2. Where was Ben's temperature the highest? Where was it the lowest?
3. How did the temperatures at various places on his body change when Ben went into the cold chamber?
4. How does wind lower skin temperature and make us feel colder?
5. What do the blood vessels do when the body exercises?
6. Why do we shiver when we are cold?
7. How can humans insulate their bodies against cold temperatures? Why is it important to wear a hat in very cold weather?
8. Which cools the body faster – cold water or cold air?
9. How did the survival suit protect Captain Nemo?
10. What protects geese from very cold water?
11. How do you think the information gained from research at the U. S. Army Research Institute of Environmental Medicine can be used to help people?

Expedition 10

Preview Questions

1. What are some ways in which drinking water can become polluted?
2. Do you think it is possible to convert sea water to drinking water? If so, how?
3. Do you think technology is used only for the improvement of society?

Follow Up Questions

1. How did Greenport's drinking water become polluted?
2. What did Ted Taylor find rewarding about making bombs? Why did he decide to give it up?
3. In what way is his work in Greenport related to his work at Los Alamos?
4. How did Ted attempt to convert his method to a large scale?
5. How does he keep his costs down?
6. How did the salt content in the drinking water from Ted's pond compare to that in standard drinking water?
7. What is the significance of Ted's findings? What are the limitations?
8. What did Ted Taylor mean by the statement, "Science doesn't have to be big to make sense?" Do you agree or disagree? Please explain.
9. Do you think scientists have a special moral obligation to society? Why or why not?

11th Expedition

Preview Questions

1. Can vegetables and fruits be grown year round in a cold climate? If so, how?
2. Are all soils the same? What kind of soil is best for growing vegetables?
3. Do you think dead rotting plants can be useful? If so, for what purpose?
4. Can the quality of soil be improved? If so, how?

Follow Up Questions

1. What do the "new alchemists" have in common with the old alchemists?
2. What is compost? What is it used for?
3. What are some materials that compost can be made from?
4. What helps to speed up the composting process?
5. What happened as Mark stuck his hand deeper into the compost pile? Why?
6. What materials are used in bioshelters?
7. What two geometric shapes are used for the geodesic dome?
8. How is a bioshelter heated during the day? How is this similar to the way the earth is heated?
9. What is symbiosis?
10. In what ways was the food that Mark ate at the New Alchemy Institute similar to the food that Arthur ate at the island feast? In what ways was it different?
11. Do you think it's possible for a family or other group to raise enough vegetables to live on throughout the year? What initial investment would they have to make? Would it be worth the expense?
12. In what ways are insecticides and pesticides helpful in a garden? In what ways are they harmful? Do you think the benefits outweigh the risk? Why or why not?

12th Expedition

Preview Questions

1. How do you think you go about building a boat?
2. What factors should be taken into consideration when designing a boat?
3. Do you think it is important for sailors to understand something about boat design? Why or why not?

Follow Up Questions

1. Why was the Kennebunk River one a central location for boat builders?
2. Why does a boat float? Why is it important for understand this concept when drawing up plans for a boat?
3. What types of boats does each student at Landing Boatshop design? Why?
4. What motivated Debbie Scaling to come to the Landing Boatshop?
5. What is lofting?
6. How is wood bent to make the frame of a boat?
7. What part of the boat construction is temporary? When are they removed?
8. What did Debbie's reaction to the accident tell about her as a person? As a sailor? How else might she have reacted?
9. What are the qualities that are necessary to be a good boat designer? Boat builder? Can you do one without understanding the other? Why or why not?
10. How is designing a boat like designing a house? How is it different? What are the unique challenges of each?

13th Expedition

Preview Questions

1. What is a magnet? How do you think it works?
2. What do you think is the biggest magnet in the world?
3. Why do you think scientists study magnets?
4. How do you think a magnet can be made more powerful?

Follow Up Questions

1. What is the biggest magnet in the world? Why is it a magnet?
2. What difficulty would sailors have if the earth were not a magnet? Please explain
3. What kinds of materials are affected by magnets?
4. What happened when Ben put a stack of magnets on a rod?
5. What are some of the ways in which you can increase the power of an electromagnet?
6. Why couldn't Ben pull his knife off the electromagnet?
7. What prevents the hot plasma from touching the walls of the chamber?
8. What is Peter's goal as a scientist?
9. Do you think Peter successfully combines his interests in science and sailing? Why or why not?