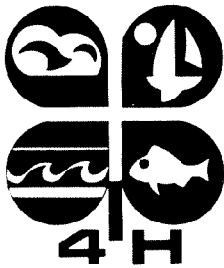


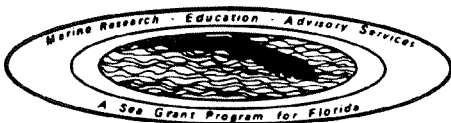
LIFE IN THE SEA

4HMER 02

MEMBERS PROJECT RECORD



UF UNIVERSITY of
FLORIDA
IFAS Extension



Florida Cooperative Extension Service
Institute of Food and Agricultural Sciences
University of Florida, Gainesville
John T. Woosta, Dean for Extension

INTRODUCTION

The questions and exercises on the following pages can be completed by reading **Life In The Sea** (4-H — 358) and by observing the marine animals at an oceanarium like Sea World in Orlando, Marineland south of St. Augustine, Gulfarium in Ft. Walton Beach or Seaquarium south of Miami.

You could complete some of the exercises without visiting an oceanarium at all. For instance, if you live near a river where manatees can be found you could possibly complete the *Manatee* exercise without going to an oceanarium. Also, in the *Treasurers From The Sea-Mollusks* exercise you can start your own shell collection if you live near a beach. If you are a skin diver and are able to visit a coral reef in Florida you could easily complete the *Coral Reefs* observations and exercises.

This 4-H project record should be used in conjunction with **Life in the Sea, A Project Guide for 4-H Members 4-H — 358**.

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Dolphins

Dolphin Questions

By reading the dolphin facts, reference books and talking with dolphin scientists, answer the following questions:

1. What is the difference between the mammal "dolphin" and the fish "dolphin"?

2. What is the difference between a dolphin and a porpoise?

3. What is the blowhole used for?

4. Why is it an advantage to the dolphin in having its blowhole connected directly to its lungs?

5. Do dolphins have vocal cords? How do dolphins make sounds? What kind of sounds do they make?

6. Why are dolphins considered to be mammals?

7. Do dolphins chew their food? What do they eat?

8. How long do dolphins live?

9. How large do they get?

10. How intelligent are dolphins?

Dolphin Observations and Exercises

By observing a dolphin or dolphins in an aquarium or in the wild, complete the following exercises:

1. Where did you observe the dolphin?

2. What kind of dolphin was it?

3. Describe its shape and color.

4. Look for the blowhole on the dolphin. How many blowholes does it have?

When is the blowhole open? _____

When is it closed? _____

5. Watch the number of times the blowhole opens and closes. Count the number of times it opens and closes per minute. How many times do they breathe per minute? _____

What was the dolphin doing while you were counting?

6. Watch the dolphin swim. Note how streamlined they are in the water. How does their body shape affect their speed?

7. Watch the movement of the dolphin's fluke. Does it move vertically or horizontally? _____

In what ways does this direction of movement help the dolphin?

8. Look at the front flippers. Watch the flipper's movement as the dolphin swims. What is the function of the front flippers?

9. Feed the dolphin a fish (if possible). Look at its teeth as you feed it. Describe the shape of its teeth.

10. How does the shape of the dolphin's teeth help it in eating?

11. List the various books, articles and/or pamphlets you have read on dolphins:

(1) _____

(2) _____

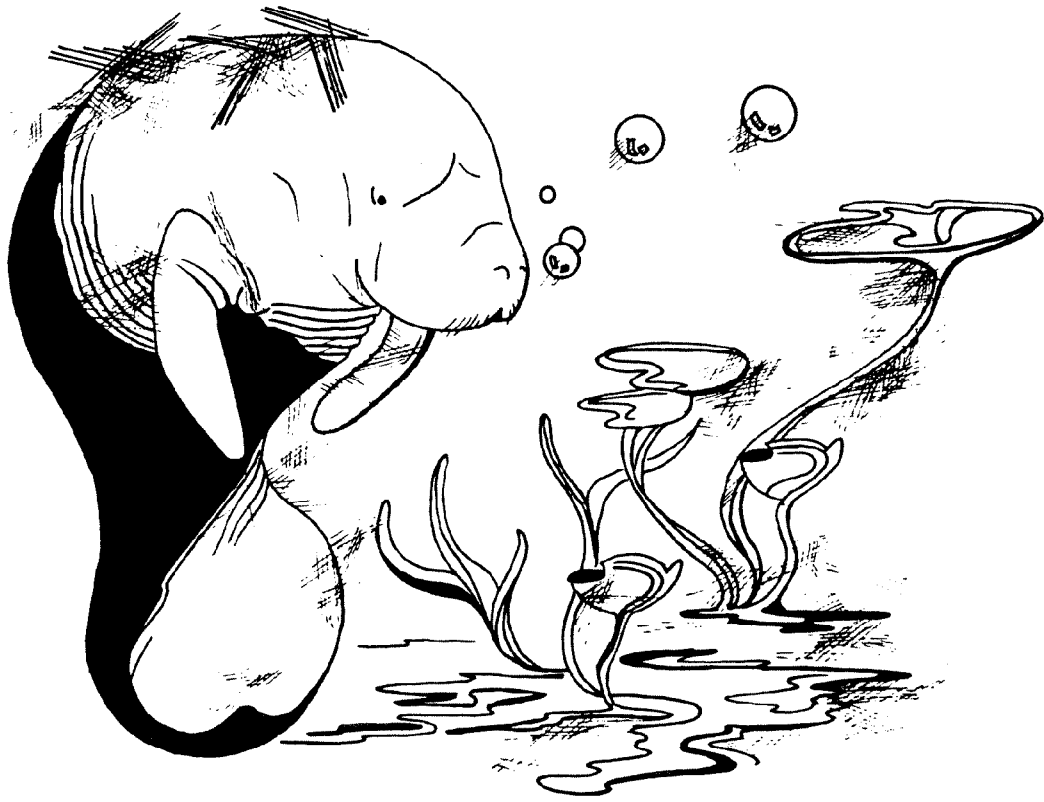
(3) _____

(4) _____

(5) _____

12. Who were some of the people you talked to about dolphins?

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____



Manatee Questions

By reading the manatee facts, reference materials and talking with manatee scientists, answer the following questions:

1. What is the difference, structurally (anatomically), between a manatee and a sea cow (dugong)?

2. What is the distribution of the manatee? The sea cow (dugong)?

3. Why do manatees go into rivers during the winter months?

4. Why are manatees considered to be mammals?

5. How do manatees feed? What do they eat?

6. Are manatees dangerous to man? Why or why not? _____

7. About how long do manatees live? _____

8. How large do they get? _____

9. How are manatees protected?

10. Do manatees have any other enemies than man? If so, what?

Manatee Observations and Exercises

By observing a manatee or manatees in an aquarium or in the wild, complete the following exercises:

1. Where did you observe the manatee?

2. Describe its shape and color.

3. How large was it (approximate weight)?

4. How does it breathe?

5. Watch the manatee swim. What delivers the main power for its swimming ability?

6. Look at the front flippers as the manatee swims. Do they move? _____

What is the function of the front flippers?

7. List the various books, articles and/or pamphlets you have read on manatees:

(1) _____

(2) _____

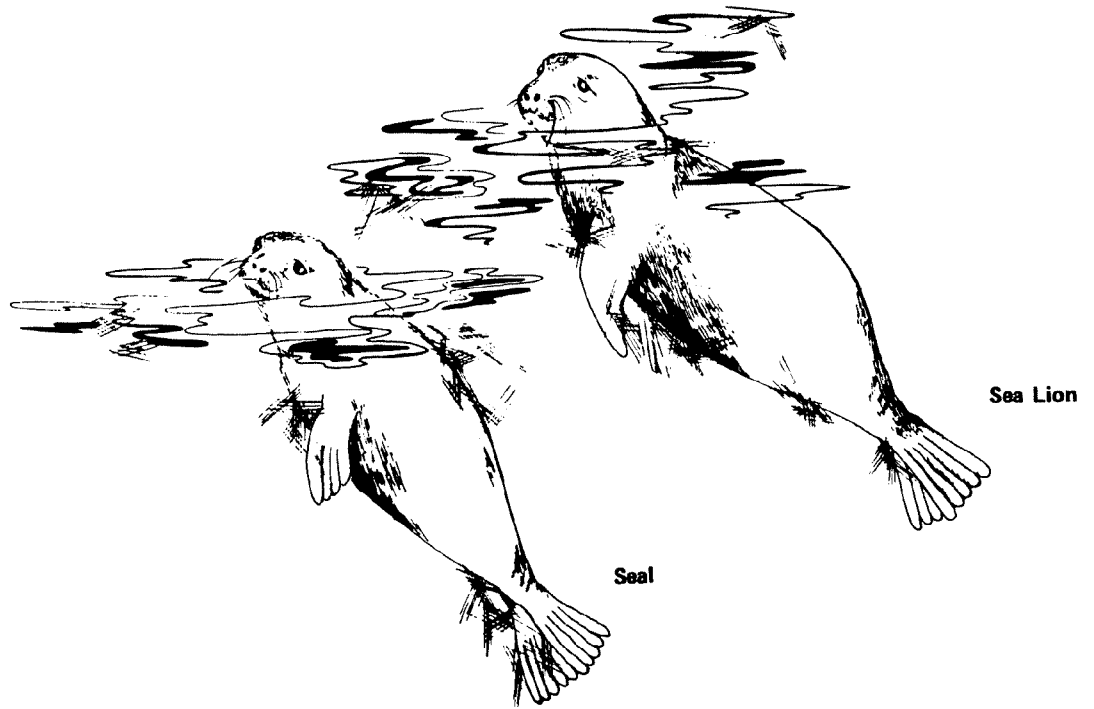
(3) _____

(4) _____

(5) _____

8. Who were some of the people you talked to about manatees?

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____



Seal and Sea Lion Questions

By reading seal and sea lion facts, reference books, magazines and by talking with scientists, answer the following questions:

1. How has the absence of ear flaps helped the seal in its environment?

2. In what ways does the layer of blubber under the skin of a seal help it?

3. Why have some seals and sea lions almost become extinct?

4. Why are seals and sea lions considered to be mammals?

5. Sea lions can rotate the hind flippers under their bodies, so they can “gallop” along on all four flippers. Seals “hump” along undulating their bodies like caterpillars and pushing with their front flippers. Which animal is better adapted to a marine environment and why?

6. Sea lions toss and catch pebbles in their mouths. How might this be useful in catching food in the sea?

7. Seal and sea lion pups play mock battles, jousting chest-to-chest, weaving their necks and nipping and barking. How will this behavior be used as adults?

8. During the breeding season and when sunning on the rocks, seals and sea lions group together. What are some of the advantages of this social behavior?

9. Seals and sea lions must return to land to rear their young. Why do you think this is necessary?

Seals and Sea Lion Observations and Exercises

By observing seals and sea lions in captivity or in the wild, if possible, complete the following exercises:

1. Where did you observe the seal and sea lion?

2. What kind of seal did you observe? _____

3. What kind of sea lion did you observe? _____

4. Watch the seal using its back flippers to swim. What does it do with its front flippers?

5. Watch the seal in the water. Try and determine how long it can hold its breath. How many minutes can it hold its breath? _____

6. Describe how the sea lion uses its front flippers to swim.

7. Watch the sea lion in a show. What does it do with its whiskers?

8. How does a sea lion use its front and back flippers to walk?

9. List the various books, articles and/or pamphlets you have read on seals and sea lions:

- (1) _____
- (2) _____
- (3) _____
- (4) _____

10. Who were some of the people you talked to about seals and sea lions?

- (1) _____
- (2) _____
- (3) _____
- (4) _____



Penguin Questions

By reading the penguin facts, answer the following questions:

1. Is the penguin more at home on land or in the water?

2. Where are penguins naturally found on the earth?

3. What two penguins are restricted to the Antarctic?

4. Are any penguins found naturally as far north as the equator? _____

If so, which one (ones)? _____

5. How do penguins stay warm? Match the left column with the right by placing the correct letters in the spaces:

(1)_____Tucking in neck & flippers

(a) Keeps penguins warm by huddling or grouping together.

(2)_____“Tripod” stance

(b) helps to keep the body temperature at 38°C.

(3)_____Warm blooded

(c) is a method used by the jackass penguin to keep warm.

(4)_____Overlapping feathers

(d) reduces the body’s surface area and helps conserve heat.

(5)_____Thick layer of fat

(e) is a stored food and water source as well as a layer of insulation.

(6)_____A rookery

(f) acts like shingles and helps keep out the cold, freezing water.

(7)_____Digging tunnels

(g) allows only a small part of the body to touch the cold ground.

6. If penguins are chased by predators on land what method do they use for getting away fast?

7. How do penguins breathe when they are swimming?

8. Why do some penguins make their nests out of rocks?

9. What are three kinds of food that penguins like to eat?

10. What are some natural enemies of penguins?

Penguin Observations and Exercises

By observing penguins in an oceanarium (Sea World, Marineland, Gulfarium, etc.) or in a zoo, complete the following exercises:

1. Where did you observe the penguin(s)?

What kind of penguin(s) did you see?

3. Describe their shape and color.

4. Is there any advantage, to the penguin, in being colored the way it is? You may need to do some research on this question. Read some things on penguins, talk to marine biologists, etc.

5. What part of the world did this penguin come from (where is its natural home)?

6. Watch the penguin as it swims. Describe its movements:

7. How does it use its flippers (wings) as it swims?

8. Watch the penguins breathe as they swim. Watch them surface after diving. Can you see the penguin take a breath? How fast can they empty and refill their lungs?

9. Where are the eyes located on the penguin's head (in front like humans or on the sides)?

10. Would there be any advantage to the penguin in having its eyes located where they are? —
If so, what advantage(s)?

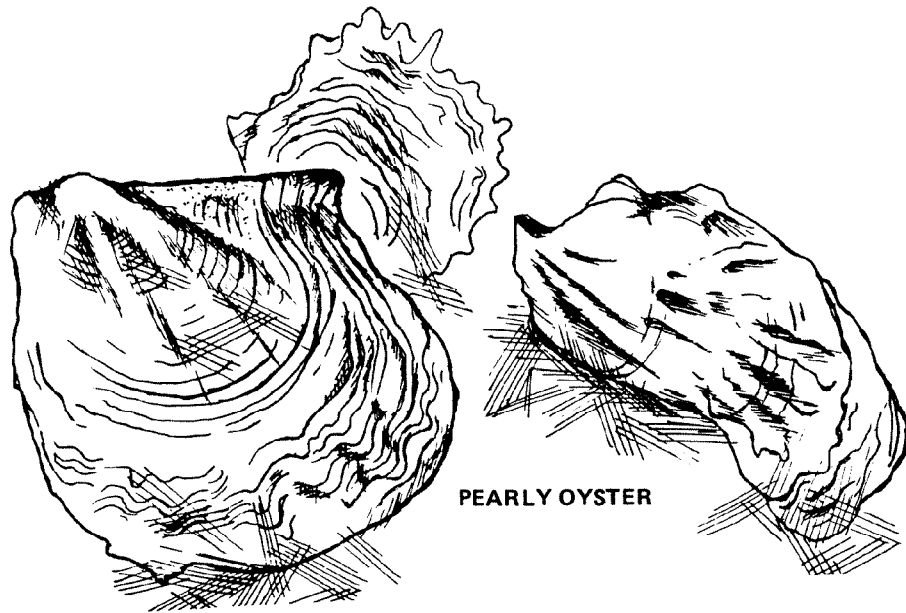
1. Describe other things that you have observed about the penguin.

12. List various books, articles and/or pamphlets you have read on penguins:

(1) -----
(2) -----
(3) -----
(4) -----
(5) -----

13. Who were some of the people you talked to about penguins?

(1) -----
(2) -----
(3) -----
(4) -----
(5) -----



Treasures from the Sea Questions, Observations and Exercises

By reading the information on Treasures From The Sea, other reference materials, by talking with marine scientists, and by visiting an oyster and pearl culture exhibit, answer the following questions and do the suggested exercises:

1. What is meant by the word "univalve"?, "bivalve"?

2. How are sea shells used commercially?

3. What is the difference between a natural and a cultured pearl?

4. What standards are used to value the pearl?

5. What forms the nucleus of the natural pearl? Cultured pearl?

6. What environmental changes are being brought on by man that are beginning to seriously affect the future of pearls and oyster farming?

7. How does a pearl form inside an oyster?

8. How are pearls used today in jewelry?

9. Why are oysters cultivated "vertically"? What advantages does this method have over "bottom" cultivation?

10. List the various books, articles and/or pamphlets you have read about mollusks, oysters, pearls, etc.

(1)

(2)

(3)

11. Who were some of the people you talked to about mollusks?

(1)

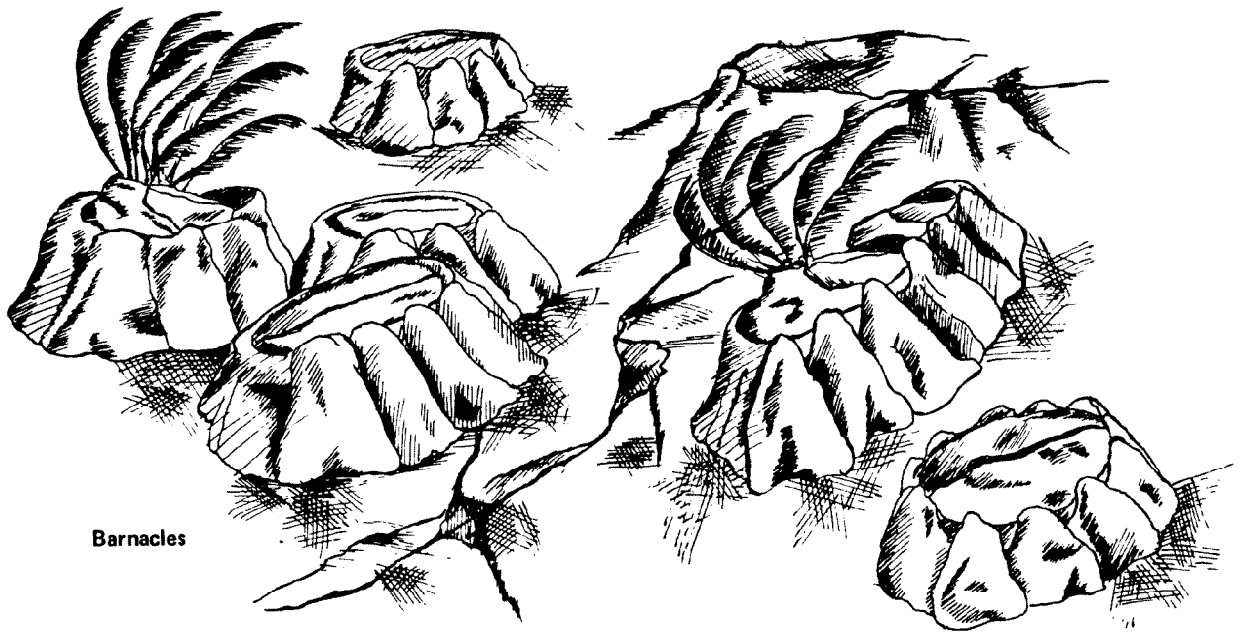
(2)

(3)

(4)

(5)

12. Make a shell collection consisting of at least 25 shells. Display the shells with each labeled according to its common name, scientific name, and where it is found. You could give a photograph of your shell collection below.



Barnacles

Caribbean Tide Pool Questions, Observations, and Exercises

By reading the information on Caribbean Tide Pools, other reference materials, and by talking with marine scientists, and by observing a Caribbean or Atlantic Coast Tide pool, answer the following questions and exercises:

1. How is the Caribbean or Atlantic coast tide pool formed and why is it one of the harshest habitats on earth?

2. Describe the action of the tube feet of the sea urchin and how they are used for locomotion. What is the sea urchin's primary method for defense? Describe how a fish such as the triggerfish might catch and eat a sea urchin.

3. California's Pacific Ocean beaches are cooled by the water flowing south from Alaska. Why do we find warm water (around 72°F) in the Atlantic coastal areas?

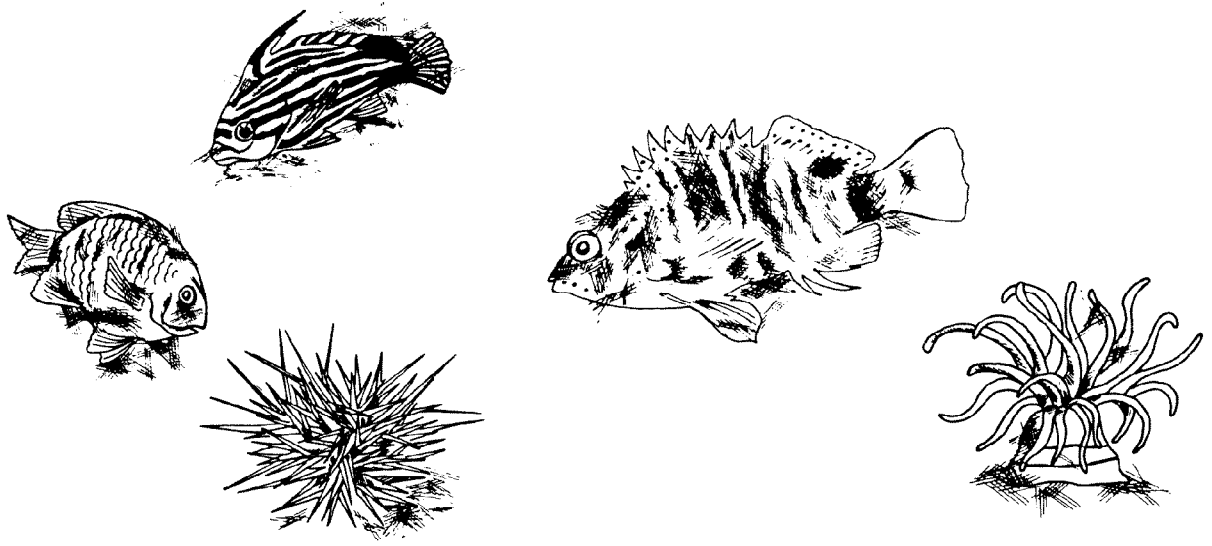
4. Where does the sea cucumber get its name and what is its primary method of defense?

5. Discuss how the croaker fish got its name.

6. Where does the hermit crab make its home?

7. Identify five organisms in the Caribbean or Atlantic Coast tide pool and tell how each is adapted for survival in the environment:

	Name	Adaptation
(a)	_____	_____
(b)	_____	_____
(c)	_____	_____
(d)	_____	_____
(e)	_____	_____



Coral Reef Questions

By reading the information on coral reefs, other reference materials and by talking to marine scientists, answer the following questions.

1. Where do we find coral reefs and what environmental factors are necessary for their formation and survival?

2. The coral reef has often been called a "living apartment complex". What animal is responsible for the coral formation and explain how this building process takes place.

3. Why is the coral reef considered to be one of the sea's greatest "nurseries"?

4. What factors threaten the future of the coral reef? How is man both helping the reef and damaging the reef?

Coral Reef Observations and Exercises

By observing a coral reef in an aquarium or in the wild, complete the following exercises:

1. Compare and identify ten different reef animals other than corals and explain each ones (1) feeding habits (2) form of defense and (3) method of locomotion.

	Name	Feeding Habits	Form of Defense	Locomotion
(1)	_____	_____	_____	_____
(2)	_____	_____	_____	_____
(3)	_____	_____	_____	_____
(4)	_____	_____	_____	_____
(5)	_____	_____	_____	_____
(6)	_____	_____	_____	_____
(7)	_____	_____	_____	_____
(8)	_____	_____	_____	_____
(9)	_____	_____	_____	_____
(10)	_____	_____	_____	_____

2. List the various books, articles and/or pamphlets you have read on coral reefs:

(1) _____

(2) _____

(3) _____

(4) _____

(5) _____

3. Who were some of the people you talked to about coral reefs?

(1) _____

(2) _____

(3) _____



1. This document is 4HMER02 of the Florida 4-H Youth Development Program, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Reprinted Oct. 1990; Reviewed January 2012. Please visit the EDIS website at <http://edis.ifas.ufl.edu>.
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