

# Science Discovery Series

1



*Lesson  
Plans for  
Grades  
3-6*



*Make science fun through hands-on learning*



- Whales • Recycling/Solid Waste
- Rocks & Minerals • Trees
- Water Quality & Conservation



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# Introduction

The New Jersey 4-H Science & Technology Committee developed a series of self-contained "**4-H Science Discovery Kits**" to help 4-H club leaders, other volunteers, and teachers provide science lessons to youth using a fun, learn-by-doing approach. Each kit contains a lesson plan and nearly all of the teaching materials needed to teach the lesson in a hands-on way. They are aimed at teaching youth in group settings such as 4-H clubs and school classrooms. This leader-teacher guide provides the lessons and activities to teach the topics offered. Self-contained kits can be replicated based on the list of materials needed to teach each lesson. Lessons in Volume 1 focus on science exploration activities which require inexpensive, readily available equipment and minimal consumable supplies.

**Topics offered.** These lessons, which include objectives relating to subject matter being taught, were developed by faculty and staff of Rutgers Cooperative Extension.

## Geology where You Live (Rocks & Minerals - best for grades 3-7)

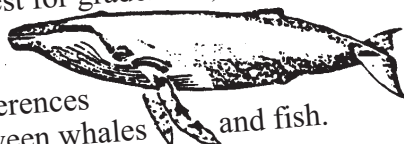


pp. 33-41

- ✕ What geology is.
- ✕ The difference between rocks and minerals.
- ✕ How rocks were formed.
- ✕ Methods to identify rocks and minerals.

## As Big As A Whale! (Whales - best for grades 4-8)

pp. 11-26



- ✿ The differences between whales and fish.
- ✿ About the Order of *Cetacea*.
- ✿ The wide variety of whales and their sizes.
- ✿ The size and shape of whales.
- ✿ The difference between baleen and toothed whales.
- ✿ The differences between whales, dolphins, and porpoises.
- ✿ Basic math skills (dimensions and scale).

## Good To The Last Drop

(Water Quality & Conservation - best for grades 3-6)

pp. 43-58

- 💧 The use and effect of water in our everyday lives.
- 💧 The movement of water in the water cycle.
- 💧 The importance of and methods for water conservation.
- 💧 The importance of and methods for maintaining water quality.

## Don't Trash The Planet!

(Recycling/Solid Waste - best for grades 3-6) pp. 27-32

- 🌐 A basic understanding of how the garbage they produce has an impact on the environment.
- 🌐 The basics of the 3R's - Reduce, Reuse and Recycle.
- 🌐 How they can make a difference by reducing the amount of garbage going into landfills.
- 🌐 How to make changes in the way they purchase and dispose of products in order to benefit wildlife and the environment.

## Tree-Mendous Fun (Trees - best for grades 2-3)

pp. 59-69

- ✿ How to tell a tree's age by counting its rings.
- ✿ The products that come from trees.
- ✿ How tree seeds travel.
- ✿ The parts of a tree and how they work together.

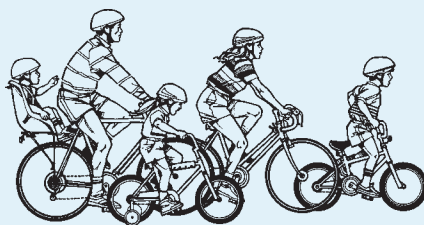


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


# The Learn-by-doing Approach of 4-H



The challenge for the adult leader is to help steer youth in the right direction without taking over the activity.

## Teaching Life Skills

4-H is recognized for making learning fun and for encouraging kids to try new things for themselves. 4-H curricula are just as focused on teaching youth important life skills as any specific subject matter. Even though the 4-H Science Discovery Series is about science, it is really more about youth learning to think and learn and apply what they have learned to their lives and surroundings. Life skills taught by 4-H are:

-  Understanding self
-  Problem solving and decision making
-  Managing resources
-  Workforce preparation
-  Communicating and relating with others
-  Acquiring, analyzing, and using information
-  Working with groups
-  Psychomotor skills



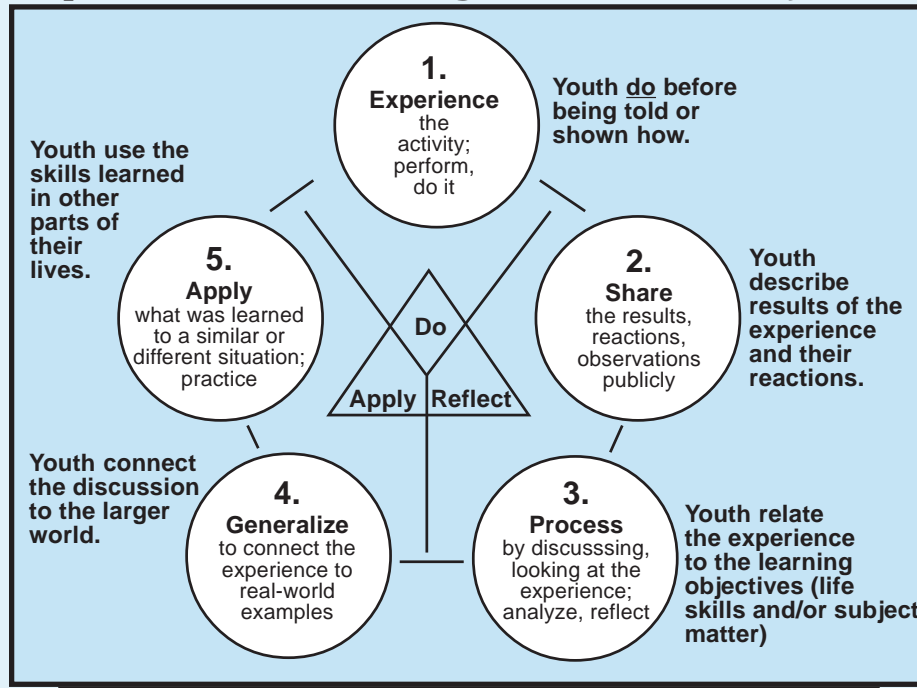
## The Experiential Learning Process

The “learn-by-doing” approach allows youth to experience something with very little guidance from an adult. Instead of being told “the answers,” they are presented with a problem, situation, or activity which they must make sense of for themselves. Learning by doing is called “experiential learning” because it is based on learning from experiences. The steps of the experiential learning process are:

- 1. Experience** the activity: perform, do it. Except for basic instructions on organization, safety, or time requirements, youth do before being told or shown how.
- 2. Share** the results, reactions, observations publicly. Youth describe the results of the experience and their reactions.
- 3. Process** by discussing, looking at the experience; analyzing, reflecting. Youth relate the experience to the targeted life skills being taught.
- 4. Generalize** to connect the experience to real-world examples. Youth connect the life skill discussion to the larger world.
- 5. Apply** what was learned to a similar or different situation; practice. Youth use the new life skill experiences in other parts of their lives.

# Experiential Learning Model

Here is a diagram of the **Experiential Learning Process** used by 4-H:



Below are the group leader's roles in each of the steps of the experiential learning process:

**1. Experience (Doing) -** Describe the experience or activity you will have learners do before they are told or shown how.

**2. Share (What happened?) -** Develop questions you will ask the learners about their experience and their reaction to it after they have completed the activity.

**3. Process (What's important?) -** Develop questions that you will ask the learners concerning something they felt was important about the experience.

**4. Generalize (So what?) -** Develop questions that will ask the learners how the experience related to their own lives.

**5. Apply (Now what?) -** Develop questions that ask the learners how they could apply what they learned to a similar or different situation.

## The Group Leader's Role in Experiential Learning

First, it is important to review the lesson and any accompanying materials, and practice the activities to be taught. As a group leader, the adult should never freely give "the answers" to a question or problem. Instead, the leader helps guide the youth in a process through which they can propose hypotheses and determine "solutions" for themselves. The experiential learning model contains five steps but can be summarized into three main processes: Do, Reflect, and Apply. Not every step of the process is done for every activity and sometimes steps within each of the three are combined. However, it is important to complete the three main processes of the learning cycle by the time the total lesson unit is completed. Although they are not explicitly labeled this way in the

Science Discovery Series, the processes are integral to the curriculum.



# How each lesson is organized

To make learn-by-doing easy and fun for the youth participants as well as the group leader, lessons are organized by the following categories:

## What Youth Will Learn

These are the outcomes that should result from the lesson/activity.

### *Subject matter objectives*

This is the subject matter knowledge or skills that should result from the lesson/activity.

### *Life skills taught*

The list of life skills to be learned by youth participating in this program.

## Audience

The grades of youth to whom the lesson/activity is most relevant. Sometimes the intended audience is different for different activities.

## Total Time Needed

The time needed if all activities of the lesson are offered. Each activity also has an estimate for the time needed so that individual activities can be selected. Teacher preparation time is sometimes included as applicable.

## Materials Needed

This is the master list of all the materials needed to conduct the activities in the lesson. It may be handy to gather all of these materials into a durable container so lessons are more readily available for teaching. Each activity includes an individual list of needed materials. Activities for the Science Discovery Series, especially Volume 1, were purposely selected for their minimal use of special equipment or materials, as well as the need for few consumable supplies.

## Activity Background/Did You Know?

This provides background information for the group leader to help with understanding the lesson and accompanying activities. This also provides a basis for “answers” to many of the questions the youth participants might have resulting from being involved in the activities.

Sometimes, youth questions form the basis for further study or self-directed learning. Background information is also sometimes included with each activity.

## Lesson Outline/What To Do

This provides detailed instructions for leading the activities.

It also includes time needed, intended audience, and materials needed for each lesson/activity.

This is where the steps of the experiential learning model are employed.

1. Experience (Doing)
2. Share (What happened?)
3. Process (What’s important?)
4. Generalize (So what?)
5. Apply (Now what?)

## Optional Activities

These are activities that allow the group or individuals to go beyond the basic content contained in the lesson. Usually, these activities help reinforce what has been learned and allow youth to demonstrate what they have learned, apply it to new surroundings, and exhibit enthusiasm for learning through individual study. Optional activities may be integrated into the outline for each of the main activities or listed under a separate heading.

## References & Resources

Besides a citation of references used, this contains sources of information if youth or the group leader are interested in learning more about a topic. For additional resources, be sure to visit the Science Discovery Series web site at [www.discoverscience.rutgers.edu](http://www.discoverscience.rutgers.edu)

## Evaluation

A copy of the “Science Discovery Series Vol. 1 Evaluation,” included on page 9, is used to help determine the value of each unit and its activities, and for reporting purposes. It is very brief and simple and intended to be completed each time a unit was taught. It can also be completed online at [www.discoverscience.rutgers.edu](http://www.discoverscience.rutgers.edu)



## NJ Core Curriculum Content Standards

To help NJ-based educators (whether in-school teachers, home-schooling parent-teachers, or others) meet learning objectives, effort has been made to connect Science Discovery Series educational activities with the NJ Core Curriculum Content Standards set by the NJ Department of Education. These standards may also be helpful for educators in other locations. To find which content standards are met by each SDS unit, visit the Science Discovery Series web site at [www.discoveryscience.rutgers.edu](http://www.discoveryscience.rutgers.edu).

## Credits

The Science Discovery Series Volume 1 was developed by faculty and staff of Cook College and Rutgers Cooperative Extension. The curriculum development team consisted of: Keith G. Diem, Ph.D., Project Director & Editor; Laura Bovitz; Mary Lou Mayfield; James Nichnadowicz; Jeannette Rea-Keywood; & Betty Jean Jesuncosky Webersinn. Partial funding was provided by a grant from the NJ 4-H Development Fund. This introduction was written by Keith G. Diem, based on national 4-H experiential learning guidelines. Photos by Keith G. Diem.

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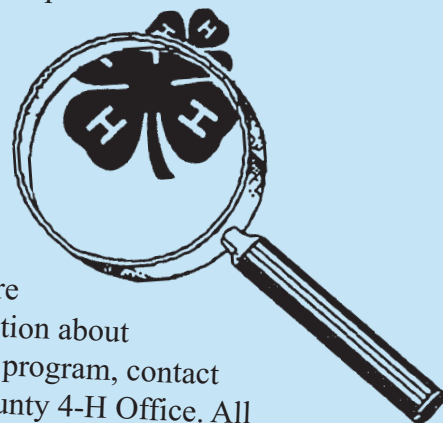
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## About 4-H

The 4-H Youth Development Program is part of the Cooperative Extension System in your county, an educational outreach program of the land grant university in partnership with federal and county governments and private sector support. Cooperative Extension programs are offered without regard to race, color, national origin, sex, age, disability or handicap.



For more information about the 4-H program, contact your county 4-H Office. All youth, throughout their school years, are always welcome to join 4-H. In addition, 4-H staff are ready to provide orientation and training for any adults interested in serving as 4-H volunteers.

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*Science Discovery Series Volume 1*





Give every child a role to play.







## Evaluation

To help determine the value and impact of lessons and activities contained in each unit of the Science Discovery Series, please complete this evaluation each time a unit was taught. Your feedback is helpful in improving this curriculum and for future development efforts. (Your response will be kept confidential and not used for any other purpose.) Please use this form, or better yet, **complete it online at [www.discoverscience.rutgers.edu](http://www.discoverscience.rutgers.edu)**

1. **Date unit was taught:** \_\_\_\_/\_\_\_\_/\_\_\_\_

2. **Which unit was used on this occasion?** (Please check one)

- ☐ Geology Where You Live (geology)
- ☐ Don't Trash the Planet! (recycling/solid waste)
- ☐ Tree-Mendous Fun (trees)
- ☐ As Big as a Whale! (whales)
- ☐ Good to the Last Drop (water quality & conservation)

3. **How effective was the unit in meeting its objectives?** (Please check one)

- ☐ Very Effective
- ☐ Effective
- ☐ Somewhat Ineffective
- ☐ Very Ineffective

4. **How easy was the unit and its activities to learn, understand, and teach?** (Please check one)

- ☐ Very Easy
- ☐ Easy
- ☐ Somewhat Difficult
- ☐ Very Difficult

5. **Overall, how effective was the unit in helping youth develop science/math literacy and life skills?**

(Please check one)

- ☐ Very Effective
- ☐ Effective
- ☐ Somewhat Ineffective
- ☐ Very Ineffective

6. **Would you recommend this unit to others for teaching science to youth?** (Please check one)

- ☐ Yes
- ☐ No

7. **Who taught the unit?** (Please check one)

- ☐ School Teacher
- ☐ 4-H Staff
- ☐ 4-H Club Leader/Other Volunteer
- ☐ Other?

If Other, please list: \_\_\_\_\_



**8. Name and title of person teaching the unit & completing this survey:** (Your response will be kept confidential)

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**9. Where was the unit taught on this occasion?** (Please check one)

- ☐ School Enrichment (during school)  
☐ After School Program/School- aged Child Care Site  
☐ 4-H Club  
☐ 4-H Camp  
☐ 4-H Special Interest/Short Term Program  
☐ Other? If Other, please name:

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**10. Please share some of the most important points youth learned from this unit:**

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**11. Number of youth and hours taught on this occasion:**

**11A.** # Of Boys \_\_\_\_\_ # Of Girls \_\_\_\_\_

**11B.** # Of Youth By Grade:

3rd \_\_\_\_\_ 4th \_\_\_\_\_ 5th \_\_\_\_\_ 6th \_\_\_\_\_ 7th \_\_\_\_\_ 8th \_\_\_\_\_ 9th \_\_\_\_\_ 10th \_\_\_\_\_

**11C.** # Of Youth By Race:

White \_\_\_\_\_ Black \_\_\_\_\_ Hispanic \_\_\_\_\_ Asian/Pacific Islander \_\_\_\_\_ American Indian \_\_\_\_\_

**11D.** Number of hours of instruction provided (ie. 0.75hrs, 2.5hrs.): \_\_\_\_\_

**12. How useful was the 4-H Science Discovery Series Web Site ([www.discoveryscience.rutgers.edu](http://www.discoveryscience.rutgers.edu)) in providing resources for teaching science?** (Please check one)

- ☐ Very Useful                      ☐ Not Useful  
☐ Useful                              ☐ Did Not Use It

**13. Please list any helpful comments about the specific activities in the unit that were used to teach on this occasion:**

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**14. Please list any other ideas, comments, or suggestions for improvements. Thanks!**

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Please return your completed form, or submit it online at [www.discoveryscience.rutgers.edu](http://www.discoveryscience.rutgers.edu).



## As BIG As A



### What Youth Will Learn

- ✿ The differences between whales and fish.
- ✿ About the Order of *Cetacea*.
- ✿ The wide variety of whales and their sizes.
- ✿ The size and shape of whales.
- ✿ The difference between *baleen* and *toothed* whales.
- ✿ The differences between *whales*, *dolphins*, and *porpoises*.
- ✿ Basic math skills (dimensions and scale).

### Targeted Life Skill(s)

- ✿ Problem solving and decision making
- ✿ Acquiring, analyzing, and using information
- ✿ Working with groups
- ✿ Psychomotor skills

### Audience

Best for grades 4–8.

### Total Time Needed

20–100 minutes.



Youth learn that careful measurements usually achieve better results.



### Did You Know?

- ✿ Whales look somewhat like fish, but they are not. Whales are warm-blooded marine mammals that breathe air and give birth to live babies. Unlike whales, fish are cold blooded, breathe oxygen dissolved in the water through their gills, and usually lay eggs. Another interesting difference is that a whale's tail will move up and down while a fish moves its tail from side to side.
- ✿ Scientists who study plants and animals put them into groups called Orders. Whales, porpoises and dolphins belong to the Order *Cetacea* (pronounced seh-TA-shee-ah). Scientists don't always agree on the number of species or the size of the whales but most sources report that there are 78 known species of *Cetacea* at this time. They come in different shapes and sizes and have a wide variety of habits that help them adapt to their environment. They range in size from the *Harbor Porpoise*, about 6 feet long and 150 pounds, to the largest which is the *Blue Whale* which is 100 feet long and weighing almost 200 tons.
- ✿ Cetaceans (pronounced seh-TA-shens) are divided into two big families: *toothed* whales and *baleen* whales. Baleen whales have plates in their mouth that strain the water to remove the food.

# As BIG As A WHALE!



## Did You Know?



Toothed whales have teeth in their mouths and hunt for fish.

The primary difference between

whales, porpoises, and dolphins is their size, but there are so many variations it is easy to get confused. There are some dolphins that are smaller than the largest porpoises, and there are some whales that are smaller than the largest dolphins. Basically, however, the whales are the larger marine mammals.

☛ Whales have adaptations which enable them to survive cold temperatures, to dive to great depths, and generally to make survival easier in the water. They are streamlined and swim using up and down movements of their horizontal tail for propulsion. Their flippers are used for steering and stabilization. Whales travel in groups called pods. When swimming they sometimes launch themselves up and out of the water and then fall back with a tremendous splash. This is known as “breaching” and is common among all whales. Layers of blubber under the skin insulate the whale and store energy. The whale’s nose (known as a blowhole) is located at the top of its head so it is exposed to get air as soon as the whale surfaces above the water. By beaming sound waves through the water, whales can navigate using a sonar-like process called echolocation. They are able to make noise and communicate through forcing air through their closed nasal passages.

## What To Do



*Time Needed:* 20–30 minutes.

*Goal:* Participants will map out and compare various types of whales

*Materials Needed:*

- ☛ Copies of the handout “*The Order of Cetacea*” and/or “*New Jersey’s Whales*” and/or “*Marine Mammal Chart*.”
- ☛ Whale measure (100 ft. of rope marked in 5 foot intervals)
- ☛ Sidewalk chalk or masking tape
- ☛ A large room (cafeteria, gym, hallway, etc.) or playground. Before beginning this activity discuss the handouts. Focus on each of the whales, their characteristics and sizes.

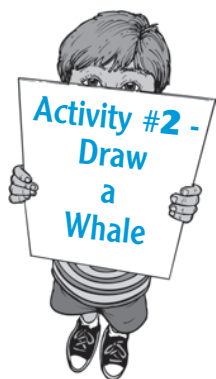
### *Directions:*

Select a starting point and mark it with chalk or tape. With the handout as a guide, use the whale measure to plot out the length of each of the whales. Use the chalk or masking tape to mark each spot with the name of the whale. Discuss the differences in sizes of whales, dolphins, and porpoises. Discuss the size differences in toothed or baleen whales. Discuss how scientific data on whale size might be collected. Are there differences in the information reported? Why? How can we determine the validity of scientific information?

# AS BIG As A WHALE!







*Time Needed:* 20–30 minutes.

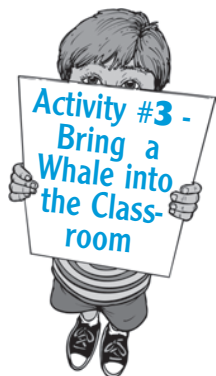
*Goal:* Students will use creativity and math skills to gain appreciation of the shape of whales.

*Materials Needed:*

- ✿ Pencils
- ✿ “Draw a Whale” handout
- ✿ 24”x34” flip chart paper

*Directions:*

Have students use the grid to duplicate the drawing of the whale. Once they have completed the drawing have them make a grid on a much larger piece of paper (flip chart paper). On this larger grid have the squares be 3” or 4” on a side. Once they have a larger grid made, have them transfer their drawing of the whale on to the larger paper. (It will help to number the squares on both of the papers. Matching the numbers of the squares on the two papers helps to transfer the drawing.)



*Time Needed:* 30–40 minutes

*Goal:* Participants will use measuring skills to gain an understanding of the size of whales.

*Materials Needed:*

- ✿ Large field or playground
- ✿ Whale Measure (100 ft. of rope marked in 5 ft. intervals)
- ✿ Sidewalk Chalk
- ✿ The Blue whale diagram



*Directions:*

Using the diagram attached which has the actual measurement of a Blue Whale, reproduce the whale on the ground. Begin by making a mark for the head. Using the rope, measure down the back bone. Using the measurements given, mark out all of the important parts of the whale such as, the end of the mouth, eyes, ears, flippers, blowholes, dorsal fin, and flukes. When you have made all of the marks, connect them with a chalk line.

*Explore your whale:*

- ✿ The eyes of the whale are only twice as big as a cow’s eye, but imagine how many cows could crowd into a whale’s mouth. They would be safe though, because the blue whale’s throat is only about the size of a grapefruit.
- ✿ Put your head near the whale’s eye. Can you see down to the tail? Maybe, but the real blue whale could not see the flukes when lying flat because the body and flippers are in the way.
- ✿ Find the flippers. How many people can fit into the flippers? They are used for stability in the water.
- ✿ Find the flukes. How many people can fit in the flukes? What are they used for?
- ✿ If all of the people in your group lie head to toe, how many are needed to reach the length of the whale?

## Sum It Up

To sum it up, go around the group and have each child either ask a question or share a fact about whales. How do they compare to fish? Which are the largest? The smallest? What is the difference between baleen and toothed whales? Which are larger? Discuss the differences in scientific information available about whales. How do different sources differ? Why do you think they have different information? What are the limits of scientific data?





## Evaluation

Your feedback is helpful in improving this curriculum and for future development efforts. Please complete the brief evaluation of this unit online at [www.discoveryscience.rutgers.edu](http://www.discoveryscience.rutgers.edu)

## Optional Activities

- ✿ Have participants bring in pictures of whales and make a class collage.
- ✿ Do research to find out about echolocation.
- ✿ Discuss some of the issues related to whales (ie. Save the Whales).
- ✿ Complete the worksheet, “*A Whale of a Tale*”
- ✿ See Appendix for additional activities.

## Materials Needed

- ✿ Lesson Plan
- ✿ Whale measure (100 ft. rope marked at 5 foot intervals.)
- ✿ Sidewalk chalk
- ✿ Tape
- ✿ Whale poster
- ✿ Masters of handout sheets

## Credits

Written by Betty Jean Jesuncosky Webersinn, Cape May County 4-H Agent, May 1995. Revised April 2003.

This unit is part of the NJ 4-H Science Discovery Series Volume 1, which was developed by faculty and staff of Cook College and Rutgers Coopera-

tive Extension. The curriculum development team consisted of: Keith G. Diem, Ph.D., Project Director & Editor; Laura Bovitz; Mary Lou Mayfield; James Nichnadowicz; Jeannette Rea-Keywood; & Betty Jean Jesuncosky Webersinn. Partial funding was provided by a grant from the NJ 4-H Development Fund.

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## References & Resources

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# The Order Called Cetacea

Which whales are bigger than your school bus? Take the information from this page and do some drawings of whales. On a large flat surface, such as playground, draw whales the correct size. Use a measuring tape and bright blue or white chalk. People who study plants and animals put them into

big groups because they have certain things in common. These big groups are called *Orders*. All whales and dolphins belong to the Order *Cetacea*. The Order is divided into two big families — *toothed whales* and *baleen whales*. Here is a chart that shows these big families.

## Baleen Whales

Baleen whales have baleen plates in their mouth that strain the water. They eat the tiny fish and shrimp that get caught in the baleen. They are the biggest animals on the planet and travel enormous distances each year to find their food. A baleen whale's mouth looks like this:



Blue Whales 100 Ft.



Fin Whales 80 Ft.



Right Whales 60 Ft.



Sei Whales 60 Ft.



Humpback Whales 50 Ft.



Brydes Whales 50 Ft.



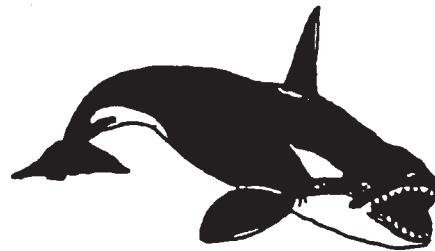
Grey Whales 45 Ft.



Minke Whales 30 Ft.

## Toothed Whales

Toothed whales have teeth in their mouths and hunt for fish and squid. Some toothed whales have very large brains for their body size. They may use their big brains for communication or for hunting and working together. A toothed whale's mouth looks like this:



Sperm Whales 60 Ft.



Killer Whales 30 Ft.



Bottlenosed Whales 15-30 Ft.



Pilot Whales 22 Ft.



White Whales 18 Ft.



Narwhals 15 Ft.



Dolphins 8 Ft.



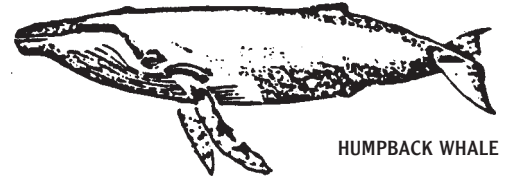
Porpoises 8 Ft.



Courtesy of the University of Southern California Sea Grant Program

"Thar she blows!" That was a call that rang out along the Jersey Shore in the late 1600's and early 1700's as coastal whalers sought whales for their blubber and baleen. Whales still come to our waters throughout the year, and we can see several species, with a little luck.

**Humpback whales** are the most common large whale in our area. Most humpbacks in our area are between 30 and 40 feet long. They are black on the dorsal side, with long, black and white flippers. They often arch (or hump) their backs before diving, which is how they get their name. Humpbacks are often seen from New Jersey's beaches in the summer.



HUMPBACK WHALE

**Fin whales** are the largest whale normally seen in our area. Most fin whales in our area are between 40 and 60 feet long. They are the only whale with a white right jaw and baleen, and a dark left jaw and baleen. Fin whales have a light chevron pattern stretching from the right side of their mouth across their back.



FIN WHALE

**Minke** (sounds like minkee) whales are the smallest of the baleen whales, ranging from 15 to 30 feet long. They are cold water whales, so we normally see them in the winter. Minkes have white bands across their flippers. All of their baleen is white. The easiest way to distinguish minkes from other baleen whales is by their habit of lifting their pointed snout out of the water when they surface.



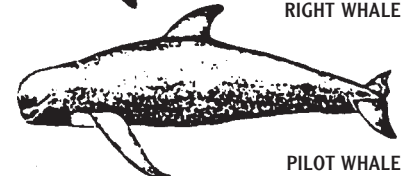
MINKE WHALE

**Right whales** are the most endangered of the large whales. They range from 20 to 50 feet long. They are black on the dorsal side, with yellowish bumps, called callosities on their heads. These callosities are different on each whale, and serve as identification for individual right whales. Right whales migrate from the Arctic to the waters off of Georgia each year, so we may see them passing through in the spring and fall.



RIGHT WHALE

**Pilot whales** are more like dolphins than our other large whales. They are black, with large dorsal fins, and range from 10 to 20 feet long. Pilot whales usually travel in pods (schools), and normally come into New Jersey waters in the spring.



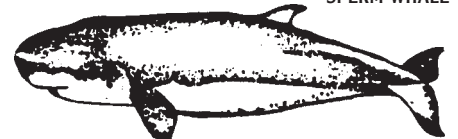
PILOT WHALE

**Sperm whales**, of the Moby Dick variety, are in all of the offshore waters of the world, except the polar ice fields. Sperm whales' heads are up to one third of their body length. As with all toothed whales, they have one blowhole, but unlike others, it is on the front and left side of the head. Sperm whales' skin is dark and wrinkled.



SPERM WHALE

**Pygmy sperm whales** are much smaller than their larger relatives. They only reach about 13 feet in length. Like the larger sperm whales, pygmy sperm whales have teeth only in the bottom jaw, which is small and set back on the underside of the head. These small whales are dark on the dorsal side and white to cream colored on the ventral side. We normally see pygmy sperm whales in New Jersey waters in the fall and spring.



PYGMY WHALE

At least 15 species of **beaked whale** exist in offshore waters of all oceans. Generally, they are between 15 and 20 feet long in our area. Most beaked whales have 2 teeth, although females may not have any visible teeth. They have long, obvious beaks, small flippers, small dorsal fins set far back on their bodies, and may have gill-like slits on their throats. Species of beaked whale that have stranded in New Jersey include: Blaineville's, Antillean, True's and Goose beaked.



BEAKED WHALE

**If you see a stranded whale, do not try to get it back into the water. Stranded whales have serious medical problems that need attention.** Call the Marine Mammal Stranding Center at (609) 266-0538, or call the local Police, Marine Police, or the Coast Guard.

