

# DISTANCE LEARNING

New Jersey Academy for Aquatic Sciences • [www.njaas.org](http://www.njaas.org)



## The Survival of Sharks

*Grades 3-6*

Thank you for your interest in the New Jersey Academy for Aquatic Sciences Distance Learning Program!

We can conduct our videoconference programs via ISDN lines up to 384 Kbps. High speed Internet Protocol (IP) connections are also available at 768 Kbps.

**Our Videoconferencing #: (856) 365-0485**

We would like to provide you with the enclosed activity ideas to add to the content you've already planned and to help make your time with us a memorable learning experience full of wonder, excitement and curiosity! The section titled "**Exploration Activities**" includes activities and worksheets that are needed during the videoconference. Please follow the guidelines included in this section to ensure that your students are well prepared. We look forward to meeting you!

---

### Pre-Videoconference Activities



As a class, list all the things that come to mind when one hears the word "shark".



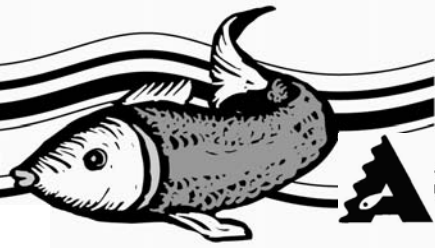
Discuss fish characteristics with students - fish have gills, fins and a backbone. A fish must possess these three things in order to be called a "fish". Discuss the difference between bony and cartilaginous fish.



Divide the students into groups of 3-4 and instruct each group to discuss what they already know about sharks and what they would like to find out. The group should decide on 4 shark questions that they would like to ask during the videoconference.

# DISTANCE LEARNING

New Jersey Academy for Aquatic Sciences • [www.njaas.org](http://www.njaas.org)



Divide your class into small groups (this may also be done individually) and give each group the following materials:

- sand paper (or sand and a glue stick) to replicate shark skin
- scissors and paper
- markers
- beans or other material for eyes.

Encourage the students to get creative and make a shark using these items. *Use the shark list created in the first activity to help prompt the students about what to include in their artwork (i.e. teeth, fins, etc.)*

## Exploration Activities



Instruct the students to have their shark questions (prepared during the Pre-Videoconference Activity) ready to ask during the videoconference. Time will be set aside at the conclusion of the program to answer these questions.

---

## Post-Videoconference Activities



Have the students complete the "Shark Word Scramble" activity.



Have the students complete the graphing activity using the data tables 1.1 and 1.2.



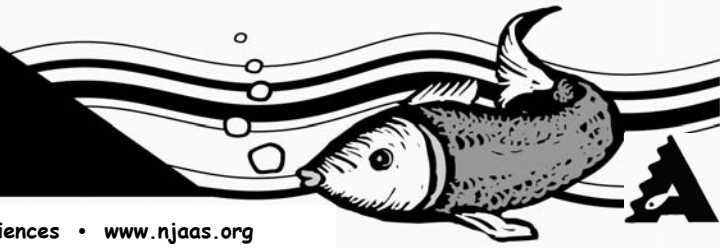
Refer to the shark list from the pre-videoconference activity and ask the students if they would like to add or delete any words.



As a class or in small groups, discuss the choices people make everyday and describe how our choices can affect the marine environment and its inhabitants. Also discuss ways in which people can help protect shark populations and ways in which we can increase awareness.



Have the students complete the "Share Your Thoughts!" activity.



## Shark Word Scramble

Sharks have some amazing characteristics that make them top predators in any ocean! See how much you know about sharks and how they use their senses to hunt their prey! Use the clues to help unscramble the words.

1. This animal hunts and kills millions of sharks every year.

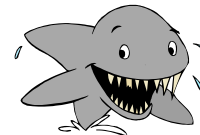
U S H M N A                    \_ \_ \_ \_ \_

2. Over the *past decade*, there have been \_\_\_\_\_ human deaths from shark attacks in the United States.

I S X                            \_ \_ \_

3. Sharks use a sixth sense to detect the \_\_\_\_\_ created by a prey animal's heartbeat.

L R I E C T C Y E I T  
\_ \_ \_ \_ \_

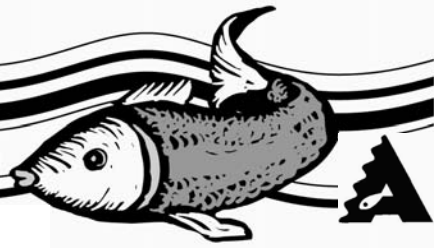


4. Sharks target weak or \_\_\_\_\_ animals for food.

D I J U N R E  
\_ \_ \_ \_ \_

5. At over 40 feet long, the largest shark in the ocean is the \_\_\_\_\_.

A H E W L            R A K H S  
\_ \_ \_ \_ \_            \_ \_ \_ \_ \_



## Shark Word Scramble Answer Key

Sharks have some amazing characteristics that make them top predators in any ocean! See how much you know about sharks and how they use their senses to hunt their prey! Use the clues to help unscramble the words.

6. This animal hunts and kills millions of sharks every year.

U S H M N A

H U M A N S

7. Over the *past decade*, there have been \_\_\_\_\_ human deaths from shark attacks in the United States.

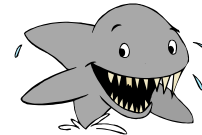
I S X

S I X

8. Sharks use a sixth sense to detect the \_\_\_\_\_ created by a prey animal's heartbeat.

L R I E C T C Y E I T

E L E C T R I C I T Y



9. Sharks target weak or \_\_\_\_\_ animals for food.

D I J U N R E

I N J U R E D

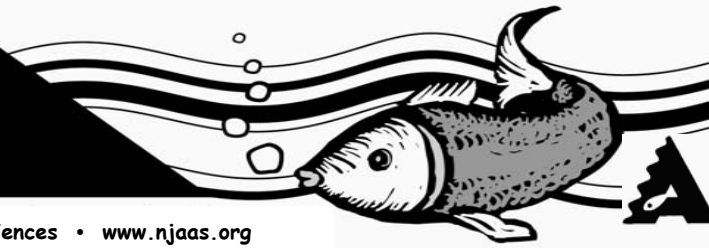
10. At over 40 feet long, the largest shark in the ocean is the \_\_\_\_\_.

A H E W L      R A K H S

W H A L E    S H A R K

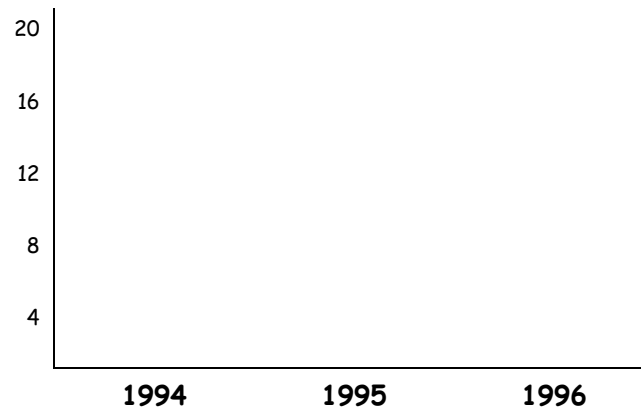
# DISTANCE LEARNING

New Jersey Academy for Aquatic Sciences • [www.njaas.org](http://www.njaas.org)



Use Table 1.1 and Table 1.2 to complete the activities on this page.

Create a bar graph comparing the number of *worldwide fatal shark attacks* for the years 1994, 1995 and 1996.



What is the average number of worldwide fatal attacks for the years 1994, 1995 and 1996?

\_\_\_\_\_

How many *non-fatal shark attacks* occurred in Australia during the year 1996? \_\_\_\_\_

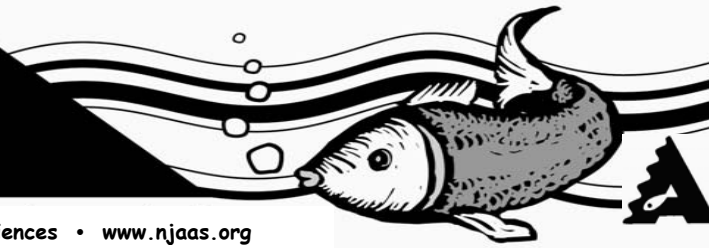
How many *fatal shark attacks* occurred in Japan during the year 1995? \_\_\_\_\_

Why do you think there are so few fatal shark attacks throughout the world, even though sharks are very successful predators?

---

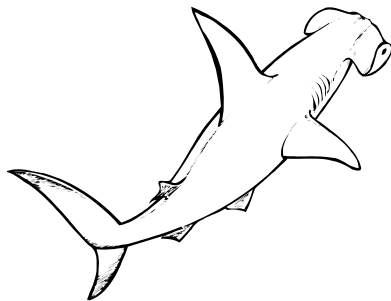
# DISTANCE LEARNING

New Jersey Academy for Aquatic Sciences • www.njaas.org



Create a bar graph comparing the number of 1994 United States fatalities due to the following causes:

**Lightning, Shark Attack, Flash Flood and Thunderstorm Wind.**

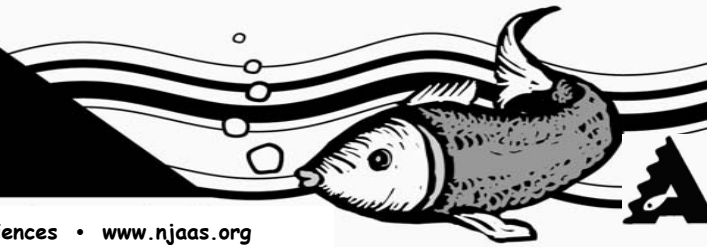


Refer to Table 1.1 to calculate the average number of fatal shark attacks in the following locations during the years 1994, 1995 and 1996:

In **Brazil**: \_\_\_\_\_

In the **United States**: \_\_\_\_\_

# DISTANCE LEARNING



New Jersey Academy for Aquatic Sciences • www.njaas.org

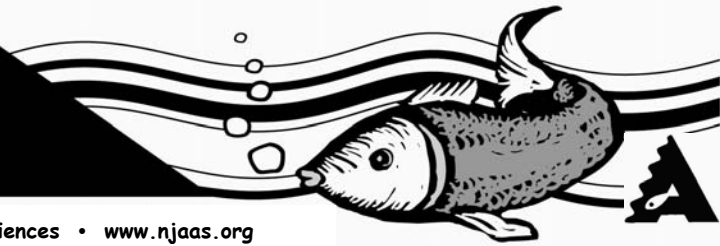
Table 1.1

<i>Location</i>	<i>Fatal Attacks 1994</i>	<i>Non-Fatal Attacks 1994</i>	<i>Fatal Attacks 1995</i>	<i>Non-Fatal Attacks 1995</i>	<i>Fatal Attacks 1996</i>	<i>Non-Fatal Attacks 1996</i>
World	7	51	10	57	3	40
Australia	0	0	1	3	0	4
Brazil	3	12	2	4	0	2
Japan	0	1	0	0	1	0
New Zealand	0	0	0	1	0	5
South Africa	1	6	1	3	0	4
United States	1	30	0	42	0	20

Table does not include all worldwide shark attack locations.

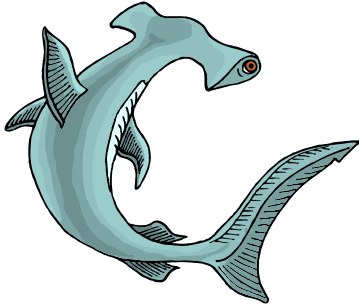
Only locations with high activity are represented.

# DISTANCE LEARNING



New Jersey Academy for Aquatic Sciences • www.njaas.org

Few people know that fatal shark attacks are actually very rare - *WORLDWIDE*, an average of only 8 people are killed by sharks every year! Compare this number to the number of fatalities due to other causes and you may be surprised!

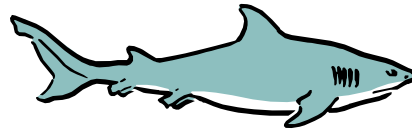


Learn about sharks and their natural behaviors! You'll discover that this intriguing animal should be respected, not feared!

Death by...	1994 U.S. Fatalities
Flash Flood	59
Carbon Monoxide Poisoning	223
Lightening	69
All-Terrain Vehicles	198
Thunderstorm Wind	17

Table 1.2

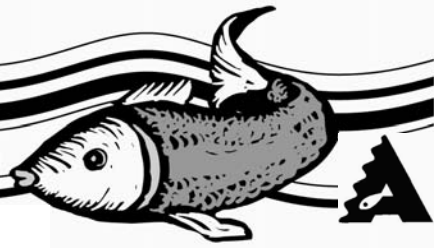
Unfortunately, the number one predator of sharks is killing this beautiful beast at an alarming rate. Up to 100 million sharks are killed every year by this ruthless predator! Can you guess what animal it is?



Sharks are unique animals in that they have a very slow reproduction rate compared to other fish, so their populations cannot recover from heavy fishing.

The best thing people can do to help shark populations recover is to *learn about sharks*, their behaviors and the threats these creatures face.

*Information obtained from U.S. Consumer Product Safety Commission and The National Oceanic and Atmospheric Administration Technical Memorandum NWS SR-193.*



## Share Your Thoughts!

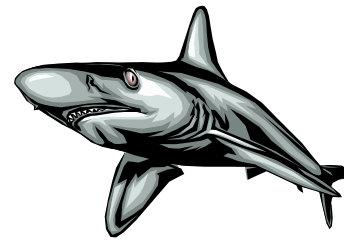
It can sometimes be overwhelming when we think about the problems the oceans and its inhabitants face every day. We may want to do something to help, but don't even know where to begin.

Many times, the simplest and most effective way to help sea life is simply by learning about an animal and telling others how we feel!

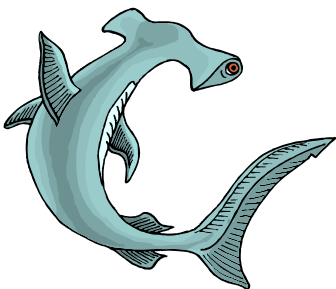
Using a separate sheet of paper, follow the guidelines below and write a letter to a friend telling them how you feel about sharks and the threats they face in our oceans.

---

**First Paragraph:** State the fact that you are very concerned about sharks.



**Second Paragraph:** Summarize the problems sharks face and why you think these problems may be bad for sharks.



**Third Paragraph:** Summarize what you think people can do to help sharks in their ocean environment.

**Fourth Paragraph:** State something that you love about sharks and why you want to have them around.

**Fifth Paragraph:** Thank the person to whom you are writing.



New Jersey Academy for Aquatic Sciences • www.njaas.org

## Videoconference Evaluation

We hope you found this program to be both educational and fun! Please take a moment to complete this evaluation and return it to us at your convenience. Your comments are valuable to us, as we use this input to improve existing programs and to develop new educational programs at the Academy.

**Program Title:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Instructor(s):** \_\_\_\_\_

<b>PROGRAM</b>	<b>Excellent.....Poor</b>				
Content: program covers subject adequately	5	4	3	2	1
Teacher's Packet materials and activities	5	4	3	2	1
Interest level and student involvement	5	4	3	2	1
Appropriate for age level	5	4	3	2	1

### **INSTRUCTOR(S)**

Prepared: knows and conveys information well	5	4	3	2	1
Enthusiastic and professional	5	4	3	2	1
Encourages student participation	5	4	3	2	1
Responds to questions appropriately	5	4	3	2	1

The best part about this program was: \_\_\_\_\_

This program would be better if: \_\_\_\_\_

Why did you choose this program? \_\_\_\_\_

What program topic would interest you most in the future? \_\_\_\_\_

Did you use the worksheets and activity ideas that were included in the teacher's packet? \_\_\_\_\_

Comments or suggestions: \_\_\_\_\_

\_\_\_\_\_

Thank you for your time,

Maggie Kain  
 Academic Programs Coordinator  
[mkain@njaas.org](mailto:mkain@njaas.org)  
 Ph: 856/365-0352 x7025