TAMPA BAY WATCH

Kids' pages

Are you ready to learn about the bay?

News for the kids of Tampa Bay!

Summer 2017

TAMPA BAY WATCH
Restoring the Bay Every Day

In This Issue:

Mark your Calendars!

Help Clean our Shorelines!

Saturday September 23, 9 am - Noon

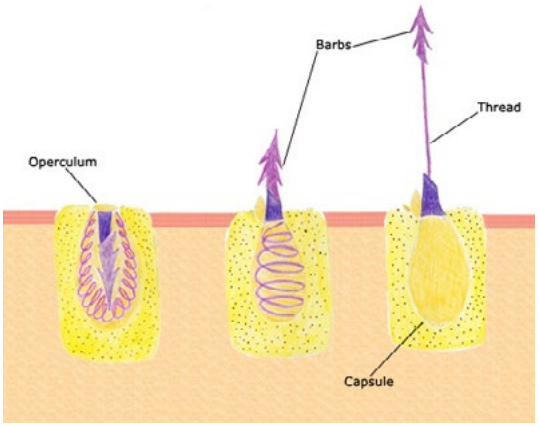
Calling all volunteers for our fall cleanup. The most help for the cleanup is needed at the Skyway fishing piers. Visit tampabaywatch.org/volunteer to sign up.

Got a Question? Ask a Scientist!

Q *Are Jellyfish made of jelly? How can they sting me?*

A No, jellyfish are not made of jelly; at least not the kind of jelly you would want to eat on a peanut butter and jelly sandwich! Jellyfish are mostly made of water. They are about 95% water, to be exact! Jellyfish are very simple animals appearing about 600 million years ago. That's before the dinosaurs! Unlike true fish, jellyfish are invertebrates, meaning they lack a backbone. They also lack hearts, blood, and even a brain! Jellyfish belong to the group of animals called Cnidarians *("nahy-dair-ee-uh n")*, which include our true jellyfish as well as corals, hydroids, box jellyfish, and anemones. These Cnidarians have the common characteristics of radial symmetry (can be split into equal pieces like a pizza), stinging cells, and being either bell- or cup-shaped. The true jellyfish's body is shaped like a bell and is made up of three layers: an outer layer, the gel-like middle layer, and an inner layer. They have a simple nerve system that allows them to respond to their surrounding environment and catch their food.

Practically all jellyfish are carnivores, meaning they eat other animals. They have developed an amazing adaptation to catch their prey. On the border of their bell-like body are special appendages called tentacles. These tentacles contain



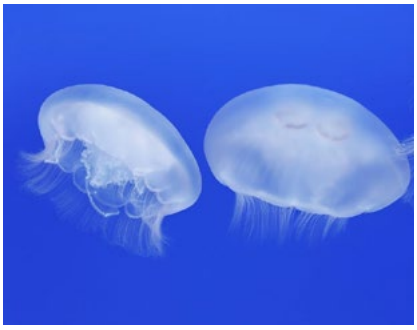
the jellyfish's special survival weapon: thousands of microscopic spears. These spears are inside a structure called the nematocyst. The nematocyst allow the jellyfish to capture its food. The nematocysts release their little spears upon contact with its prey or, unfortunately, if they come in contact with an unsuspecting swimmer. The spears also release venom. The strength of the venom depends on the species of jellyfish.

Some jellyfish stings can have little to no effect on humans, while others can be very painful. These nematocysts and their harpoons are the reason jellyfish sting.

Sources:
Castro, Peter, and Michael E. Huber. Marine Biology. New York, NY: McGraw-Hill Education, 2013. Print; Cousteau, Fabien. Ocean. Ed. Peter Frances and Angeles G. Guerrero. New York: DK Pub., 2008. Print; oceanservice.noaa.gov; smithsonianmag.com; seafriends.org

Expand Your Mind!

Meet & Greet: The Jellyfish of Tampa Bay



MOON JELLYFISH

Aurelia aurita

The moon jellyfish gets its name from its circular moon-like shape. Along its circular bell it has small skinny tentacles that are used to mainly catch plankton. The moon jellyfish is found around the world and is one of the most widespread of all jellies. It can be found in the open ocean and along the coast at the surface of the water. Its color can range from clear to pink, purple, and even orange depending on what type of food it is eating.

Sources: Cousteau, Fabien. Ocean. Ed. Peter Frances and Angeles G. Guerrero. New York: DK Pub., 2008. Print; montereybayaquarium.org; montereybayaquarium.org

PORTUGUESE MAN'O WAR

Physalia physalis

The Portuguese man o' war is actually not a true jellyfish; even though it is often mistaken as one. It is a closely related animal called a siphonophore. The Portuguese man'o war is actually not one animal but a colony of specialized "clones" called zooids. These individual zooids found that they can survive better if they work as a team. Some zooids act for defense, feeding, reproduction, and as a float. The float is what gives the animal its name resembling a sailing warship. The Portuguese man' o war float can reach up to 12 inches with tentacles that may reach as long as 100 feet. The long nematocyst-rich tentacles used normally for feeding can provide an excruciatingly painful sting to humans.

Sources: oceanservice.noaa.gov; animals.nationalgeographic.com; thesun.co.uk

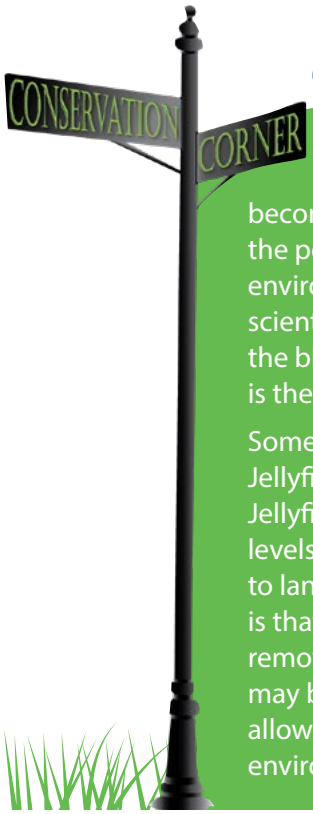
ATLANTIC SEA NETTLE

Chrysaora quinquecirrha

The Atlantic sea nettle gets its name from the stinging nettle plant. It has a painful sting, especially to those who are sensitive. The Atlantic sea nettle can be found on the East Coast of the United States as well as in the Gulf of Mexico. It is usually found in the open ocean, but has the ability to live in lower salinity waters, like estuaries. Estuaries are a special area where freshwater and saltwater meets and mixes. Tampa Bay is an example of an estuary.

Sources: aqua.org; aquariumofpacific.org

Our education programs get kids into the bay!



Jellyfish Blooms

A couple of jellyfish can be considered a pest, but hundreds of jellyfish—a bloom—can become a great concern. Jellyfish blooms have the potential to cause a lot of damage to our environment. A large part of the problem is that scientists have not been able to identify the root of the blooms. There are many different ideas for what is the cause.

Some believe the blooms are due to warmer climate. Jellyfish multiply at a faster rate in warmer waters. Jellyfish also reproduce faster in waters with high levels of nutrients. High nutrient levels can be due to land pollution and runoff. Another hypothesis is that the blooms may be due to overfishing. The removal of jellyfish predators like fish and turtles may be transforming the environment into one that allows the jellyfish to thrive. These changes to their environment may lead to overpopulation of jellyfish.

The leading issue surrounding jellyfish blooms is what they eat. Jellyfish mainly feed on baitfish and plankton. This is a problem because the jellies are eating food that other organisms depend on. Plankton includes many juvenile animals—for example, fish eggs. The jellyfish consuming juvenile animals before they have a chance to grow can reduce population's numbers.

These jellyfish blooms not only throw off the balance of our delicate marine environment, but also can make for an unpleasant swimming experience!

Sources: www.ncbi.nlm.nih.gov; coastalscience.noaa.gov; ocean.si.edu; seagrant.uaf.edu; cbc.ca

Fun Facts about Jellies!

- The lion's mane jellyfish can rival the size of a blue whale! Its main body can get up to seven feet with tentacles up to 150 feet!
- Moon jellyfish can be found in every ocean on Earth!
- If a moon jellyfish is starved, it can shrink to a tenth of its original size!
- Most jellyfish have algae in their bodies called zooxanthellae that photosynthesize.
- A group of jellyfish can be called a bloom, but also a smack!

Sources: aqua.org; tnaqua.org; ocean.si.edu; seagrant.uaf.edu; oceana.org

Did You Know...

Jellyfish are not actually fish. They are invertebrates!

source: kids.nationalgeographic.com

Fun Activity:

Dancing Jellyfish Craft

Supplies:

Paper plate, cardboard, paint, paintbrush, yarn, googly eyes, and glue

Instructions

1. Draw the shape of a jellyfish body (a bell) on a small piece of cardboard and cut it out. Paint the piece of cardboard with your color choice of paint. Set it aside to dry.
2. Paint the top of a paper plate (the side you eat on) and a large craft popsicle stick with blue paint. Set them aside to dry.

3. When your paper plate is dry, have an adult use a craft knife or scissors to cut a slit in the paper plate about 2/3 down. This is the slit for your jellyfish.
4. Turn your painted jellyfish body over (to the unpainted side) and add a line of glue to the bottom of your jelly. Cut several strands of yarn and place them on the tacky glue to make jellyfish tentacles. After your tentacles are in place, glue the top of your popsicle stick to the center of your jellyfish. Make sure the painted blue side of your popsicle stick is facing forward. Turn your swimming jellyfish craft over and glue two googly eyes on the front (can also be drawn on).
5. Slide your jellyfish popsicle stick into the slit in your paper plate. Your painted jellyfish should be facing forward on the blue side of the paper plate.
6. To make your jellyfish swim, hold the stick from behind the paper plate with one hand while stabilizing the paper plate with your other hand. When you move around the craft stick behind the paper plate, your jellyfish swims around!

Source: iheartcraftythings.com

TAMPA BAY WATCH
Restoring the Bay Every Day

Kids' Pages is a quarterly newsletter supplement to the Tampa Bay Watch Log.

Please get your kids involved and sign them up to be a member today! eMail **membership@tampabaywatch.org** or visit TAMPABAYWATCH.ORG.

Cover masthead artwork drawn by Sarah Kelly, one of Tampa Bay's talented youth artists.

Estuary EDventures

TAMPA BAY WATCH

Kids' pages Investigations

Topic: Jellyfish

Summer 2017 edition

Instructions: Read through the appropriate *Kids' Pages* edition and answer the questions below. Once all the questions have been completed, refer to the Answer Key to check your work.

Multiple Choice (choose one):

1. Jellyfish appeared in the historic record how many millions of years ago?
   - (a.) 800
   - (b.) 600
   - (c.) 400
   - (d.) 200

2. Which of the following anatomical features does the jellyfish have?
   - (a.) Simple nerve system
   - (b.) Blood
   - (c.) Backbone
   - (d.) Heart

3. To which group of animals do jellyfish belong?
   - (a.) Cnidarians
   - (b.) Cenozoans
   - (c.) Cetaceans
   - (d.) Cephalopods

4. Which jellyfish can be found in every ocean on Earth?
   - (a.) Lion's Mane jellyfish
   - (b.) Atlantic Sea Nettle
   - (c.) Prtuguese Man o'War
   - (d.) Moon jellyfish

5. Jellyfish are not actually fish; they are a type of what?
   - (a.) Echinoderm
   - (b.) Chordate
   - (c.) Invertebrate
   - (d.) Mollusk

Fill in the Blank:

6. Just about all jellyfish are _____, meaning they eat other animals.

7. The structure known as a _____ contains the microscopic spears used to capture food and sometimes release venom.

8. The names for a group of jellyfish include a _____ or a _____.

9. A Portuguese Man o'War is not a true jelly, but a _____ which is a colony of cloned organisms called "zooids."

Short Response:

10. Using the information provided in the Conservation Corner of *Kids' Pages,* discuss some of the reasons jellyfish overabundance may be harmful to the ecosystem. Provide at least two reasons why jellyfish populations could increase and predict what may occur to other organisms if their population growth rapidly continues.

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Kids' pages Investigations
Topic: Jellyfish
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ANSWER KEY

1. B. They are older than dinosaurs!

2. A. This system helps them respond to their environment.

3. A. They are closely related to corals and anemones.

4. D. Their body color changes with what they're eating.

5. C. This means they have no bones!

6. Just about all jellyfish are **carnivores,** meaning they eat other animals.

7. The structure known as a **nematocyst** contains the microscopic spears used to capture food and sometimes release venom.

8. The names for a group of jellyfish include a **bloom** or a **smack.**

9. A Portuguese Man o' War is not a true jelly, but a **siphonophore,** which is a colony of cloned organisms called "zooids."

10. Answers will vary. *Example answer: The marine ecosystem, like all ecosystems, is a delicate balance of life. An overabundance of jellyfish could upset that balance, which could cause lasting effects on the surrounding organisms, especially other planktivores. Jellyfish feed primarily on plankton, so more jellyfish equals less plankton as a food source for other animals that feed mainly on plankton, as well. Though scientists are unsure of what causes these massive population blooms, they hypothesize that warmer waters and increased nutrients encourage the growth of the population. If the issues of climate change and coastal pollution from run-off continue, we could see larger numbers of jellies and less of other animals into the future, which may be devastating to the current balance as we know it.*