SAVE THE BAY®

NARRAGANSETT BAY

EXPLORE THE BAY

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Virtual Education Programming Brochure

EXPLORE THE BAY WITH US... VIRTUALLY!

About Save The Bay's Virtual Programs

- All programs in this guide can be taught virtually (for a classroom or in an individual setting). While the programs are organized by theme, the individual lessons can be paired as needed.
- · Any program labeled with an asterisk(*) can also be taught outside on school campuses.
- Programs are expected to be 45 minutes. If teachers and students are not familiar with Zoom. programs can be extended to one hour to account for a basic Zoom introduction. We are happy to present our lessons through other video conferencing platforms as well.
- All of our programs are linked to national science standards and Rhode Island's grade span expectations and grade learning expectations.

To book a program, discuss options, inquire about modifications, or learn more about Save The Bay's education programs, contact the Education Program manager by calling 401-272-3540 x133 or emailing education@savebay.org.

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ADAPTATIONS

Join Save The Bay for six lessons learning all about the adaptations of animals that live in Narragansett Bay! Each lesson will focus on an animal, or group of animals, and how they are able to survive the rough and tumble climate of Narragansett Bay.



Crustaceans*

Jump into the world of adaptations by learning about everyone's favorite subphylum: crustaceans! Students will be able to define the word "adaptation" and learn all about the adaptations that crabs, shrimp, barnacles, and lobsters have to help them survive!

Next Generation Science Standards:

Grade K- LSI, ESS3 Grade I- LSI, LS3 Grade 2- LS4 Grade 3- LS2, LS4 Grade 4- LSI Grade 5- LSI Middle School- LSI, LS2,

Horseshoe Crabs*

Horseshoe crabs have been crawling around our waterways for hundreds of millions of years! In this lesson, students will learn how horseshoe crabs are the "ultimate survivors" and how these creatures have managed to survive for so long on Earth!

Seals of Narragansett Bay*

In Narragansett Bay, we have some large and furry friends that come to visit every year: harbor seals! With our life-size seal model, Sealia, learn all about the amazing physical and behavioral adaptations that make harbor seals so special.

Echinoderms

Some of the prettiest and most baffling creatures in the world live right here in Narragansett Bay: echinoderms! Echinoderms, meaning organisms with "spiny skin," are sea stars, sea urchins, sea cucumbers, and sand dollars. Learn all about how echinoderms survive and why scientists are so fascinated by them.

Squid Dissection*

Students will get to take part in a real life squid dissection hosted by a Save The Bay educator. By learning about the anatomy of a squid, students will learn how they are uniquely adapted to survive in the Bay and ocean!

Sharks and Skates

Did you know that we have sharks and skates in Narragansett Bay? With some truly amazing adaptations, these animals are able to thrive on the bottom of the Bay. Join us in meeting these wonderful and often misunderstood creatures!

Next Generation Science Standards:

Grade K- LSI, LS2, ESS3, Animals two by two Grade I- LSI, LS3, Plants & Animals Grade 2- LS4 Grade 3- LS2, LS4, Structures of life Grade 4- LSI, ESS3, Environments Grade 5-ESS3, Living systems Middle School- ESS2, ESS3

CLASSIFICATIONS

Did you know that scientists love to classify things? In this series, learn about all the different kinds of animals that live in Narragansett Bay and why scientists love to group organisms together.



Next Generation Science Standards:

Grade K- LSI, ESS3 Grade I- LSI, LS3 Grade 2- LS4 Grade 3- LS2, LS4 Grade 4- LS1 Grade 5- LS1

Echinoderms

Some of the prettiest and most baffling creatures in the world live right here in Narragansett Bay: echinoderms! Echinoderms, meaning organisms with "spiny skin," are sea stars, sea urchins, sea cucumbers, and sand dollars. Learn all about the unique features of echinoderms, and why they have been puzzling scientists for years!

Birds of Narragansett Bay

Birds: our fine and feathered friends that live on and around Narragansett Bay! Birds have some of the most unique

characteristics of any classification. In this lesson, learn about the unifying features that connect all birds, along with the unique characteristics that help some species survive in Narragansett Bay!

Crustaceans*

What do a lobster, barnacle, crab, and shrimp all have in common? They are all crustaceans that live in Narragansett Bay! In this lesson, learn about all the crazy characteristics of crustaceans and why they are some of the most beloved (and feared) creatures in our waters!

Fish*

Flat fish, bony fish, and sharks, oh my! In this lesson, investigate the varying characteristics and classifications of fish that live in Narragansett Bay.

Mollusks*

Mollusks have soft bodies, muscular feet, and toothed tongues - but they're not all looks! This phylum of animals is the second largest in the world, right after Arthropods, consisting of snails, slugs, bivalves, and squid! Meet some of these overlooked critters and learn what makes them so fascinating!

Horseshoe Crabs*

Horseshoe crabs have been around for millions of years - and they haven't aged a day! Learn about the history of horseshoe crabs and why these fascinating animals are more closely related to spiders and ticks than they are to crabs!

Turtles

Everyone loves turtles, but who knew there was a difference between freshwater turtles, sea turtles, and tortoises? Spend some time with local Rhode Island turtles and find out how they survive in different habitats around Narragansett Bay!



HABITATS & BIODIVERSITY

Take a guided tour of Narragansett Bay! Each week we will explore one of the unique habitats that make up our bay, learn what makes that habitat special, and discover the number of different species that live there.



Watersheds*

How are you linked to Narragansett Bay? Using a watershed model we will connect where we live and how our actions on land affect our rivers and the Bay. Discover how water moves from the land to the sea and how various pollutants can impact our bay animals and their habitat.

Next Generation Science Standards:

Grade K- ESS3 Grade 2- ESS2, Solids & Liquids Grade 3- Water & Climate Grade 4- ESS1, Environments Grade 5- ESS2, Living systems Middle School- LS1, ESS3 High School- LS1

Sandy Beach & Beachcombing*

The sandy beach is one the most popular habitats to explore in Narragansett Bay and a great place to collect shells, but did you know those shells were once living sea creatures? Discover the different organisms that call this habitat home and learn what else the beach has to offer these shoreline species.

Next Generation Science Standards:

Grade K- LSI, ESS2, ESS3 Grade I- LSI, LS3 Grade 2- LS4 Grade 3- LS2, LS4, ESS3 Grade 4- LS1, ESS2, ESS3 Grade 5- LS2, ESS3 Middle School- LS2, ESS3 MS- LS2, ESS3 High School- LS2, ESS3

Rocky Shore

As waves crash and splash against the rocks, the Rocky Shore is a constantly changing ecosystem. In this lesson, we zoom into each tidal zone, explore what makes this habitat hard to hold onto, and discover the different sea creatures that are clinging onto the rocks for survival!

Salt Marsh

Salt Marshes are Narragansett Bay's most productive ecosystem: they act as a food factory, giant sponge, and even a bird hotel. Learn why so many species, near and far, call this habitat home and discover how this habitat benefits humans, as well!

Eelgrass

Dive into Narragansett Bays biggest underwater flower bed: eelgrass.That's right, eelgrass is actually a flowering plant! Learn what these important plants need in order to grow...and what they should avoid to support the animals that take shelter in these beds!



Micro Habitats (Wrack Lines, Dunes, Tidepools, Fouling Communities)

Who wants to learn about skate eggs, snail egg cases, piping plover nests, and tunicates (that are related to humans)? When we take a closer look at these organisms, we discover a whole other world: microhabitats! Let's zoom into some of our favorite ecosystems to discover what microhabitats we didn't even know existed!

Plankton*

Life in Narragansett Bay starts at the top! Let's shrink down to the size of a grain of sand and observe how those tiny creatures called plankton play an important role in our food webs. We might even discover how plankton can be linked to a diverse aquatic ecosystem and why humans' lives depend on them!

Next Generation Science Standards:

Grade 2- LS2 Grade 3- LS4, Structures of life Grade 4- LS1, ESS3, Energy, Environments Grade 5- LS1, LS2, Living systems Middle School- LS2, ESS2 High School- LS1, LS2, ESS3

Bottom of the Bay Species

Predators, scavengers, and decomposers can all be found at the bottom of our bay. Learn how these benthic creatures create a complex community and discover how all these organisms cohabitate below the surface.

Trawl

Have you ever wondered what's swimming, crawling, or living in our bay? Find out as we cast out a large net from our educational vessel to collect some of our favorite sea creatures. Together, we will identify and observe the species we collected to determine the health of our Narragansett Bay habitat.

Next Generation Science Standards:

Grade 2- LS4, ESS2 Grade 3- LS2, LS4, ESS2, ESS3, Water & Climate, Structure of life Grade 4-LS1, ESS3, Environments Grade 5- LS1, LS2, ESS2, ESS3, Living systems Middle School- LS1, LS2, ESS3 High School- LS1, LS2, ESS3





SAVE THE BAY

GO GREEN!

There are some amazing creatures and habitats all around Narragansett Bay that are facing some very real challenges! In this programming series, become acquainted with all the enchanting features of Narragansett Bay, along with ways to help protect and preserve the natural environment.



Watershed*

Everything that humans do on land has an impact on waterways: good and bad! In this lesson, a watershed is shrunk down to model size to demonstrate the negative effects of pollution on Narragansett Bay.

Next Generation Science Standards:

Grade K- ESS3 Grade 2- ESS2, Solids & Liquids Grade 3- Water & Climate Grade 4- ESS1, Environments Grade 5- ESS2, Living systems Middle School- LS1, ESS3 High School- LS1, LS4

Food Webs*

In a food web, every organism plays a role: from the tiniest plankton to the biggest shark. So, what happens when a link in a food web is disturbed? In this lesson, investigate the importance of healthy food webs and how humans have been disrupting the natural balance.

Next Generation Science Standards:

Grade 2- LS2 Grade 3- LS4, Structures of life Grade 4- LS1, ESS3, Energy, Environments Grade 5- LS1, LS2, Living systems Middle School- LS2, ESS2 High School- LS1, LS2, ESS3, LS4

Invasive Species*

In Narragansett Bay, there may not be aliens beaming down from space, but there is another threat: invasive species! Learn all about creatures that are accidently brought from lands far, far away that try to take over the delicate ecosystem of Narragansett Bay.

Next Generation Science Standards:

Middle School- ESS3 High School-LS2, LS4, ESS2, ESS3

Trash Timeline*

A piece of trash goes into a trash can and is never thought about again...but there's more to the story! Join Save The Bay educators to learn about the long life of trash and how to reduce its impact on Narragansett Bay.

Climate Change, Ocean Acidification, and Shellfish*

Climate change is a very real concern that is changing the face of the earth and, in turn, making the ocean more acidic. Every single organism on the planet is affected by climate change, but in Rhode Island, there's a group of animals that especially stands out: shellfish. In this lesson, learn all about climate change and how this huge issue is affecting one of the Bay's smallest organisms.

Next Generation Science Standards:

Grade 2- ESSI Grade 3- LS4, ESS2, Water & Climate Grade 4- LS1, ESS3, Environments Grade 5- ESS2, ESS3, Living systems Middle School- LS1, LS2, ESS2, ESS3 High School- LS4, ESS2, ESS3

Tropical Strays

Oliver, Annie, Batman...the spotfin butterflyfish? In Narragansett Bay, there exists a medley of animals known as the "Gulf Stream Orphans," also known as tropical strays. These animals are tropical species that were swept up in the Gulf Stream current and had a one-way ticket to Narragansett Bay. Learn all about these creatures and how they could potentially be the future of Rhode Island waters!

Sea Level Rise & Diamondback Terrapins

It is expected that sea levels will rise a minimum of 12 inches by the year 2100. What does this mean for creatures that depend on the coastline around Narragansett Bay? With Save The Bay educators, take a dive into the world of diamondback terrapins, the only turtle in the world that prefers brackish water. Learn how sea level rise will impact the lifestyle and habitat of diamondback terrapins, and what can be done to help!

Species of Concern & Shark Hatcheries

Chained catsharks are one of the many animals in Narragansett Bay whose population sizes are concerning. At Save The Bay, a hatchery program has been established in the Exploration Center and Aquarium to breed these magnificent sharks! In this lesson, learn about endangered species and all the animals in Narragansett Bay that need our special attention!





SCIENTIFIC SKILLS

At Save The Bay, scientific skills are a lifestyle! The classic image of a scientist might be in a lab, but there are plenty of other ways to flex those science muscles. Join Save The Bay staff in honing those observation, identification, and field abilities - all skills that can be applied to everyday learning and exploring!



Water Quality*

Can our rivers and bay support living creatures? Let's find out! Learn what aquatic animals need to survive and lead scientific tests such as temperature, salinity, dissolved oxygen, and pH to find out if our water can support life in Narragansett Bay!

Next Generation Science Standards:

Grade 2- ESS2, ESS3 Grade 4- ESS3 Grade 5- LS1, LS2, ESS2, ESS3 Middle School- LS1, LS2, ESS2, ESS3 High School- LS2, ESS3

Plankton*

What's floating in our water? Learn all about plankton and the important role they play in Narragansett Bay. Students will get the chance to practice examining these tiny organisms through a

microscope and see if they can identify any juvenile sea creatures floating in our water!

Next Generation Science Standards:

Grade 2- LS2 Grade 3- LS4, Structures of life Grade 4- LS1, ESS3, Energy, Environments Grade 5- LS1, LS2, Living systems Middle School- LS2, ESS2 High School- LS1, LS2, ESS3

Observation*

Have you ever wanted to be more like Sherlock Holmes? What made him a great detective was his ability to observe. Learn how to closely notice the world around you and ask questions like a scientist. We will peak students' curiosity as they become more engaged with the world around them.

Next Generation Science Standards:

Middle School- LS1, LS2, ESS3 High School- LS1, LS2, ESS3

Identification*

So many species, so little time! A day out in nature can lead to a number of different species collected. Learning to use a field guide can be a great tool to help students identify and learn fun facts about common species living in our local ecosystems!

Biodiversity

Would you rather find 1,000 snails or 1,000 different fish? Learn about biodiversity and count the number of different species that live in Narragansett Bay and along our shorelines. It will be up to the students to determine how healthy our bay is.

Field Sampling Techniques

Can you count every piece of sand at the beach? How about crabs, fish, or plants? Neither can scientists, that's why they use different sampling methods to help them answer these questions. Learn different ways scientists measure, collect, and analyze data to help them learn more about individual species or entire ecosystems.

Navigation*

Want to be more like an ant, fish, or bird? Use your compass! Compasses are one of the most important instruments for navigating. Learn how to use this instrument and become one of the greatest orienteers in Narragansett Bay.

Squid Dissection*

Did my squid just ink? Only you can answer this question with Save The Bay's hands-on squid dissection! Learn the internal and external anatomy of a squid, explore different adaptations, and infer how your squid used these special adaptations to survive. At the end determine if your squid just inked and where that ink came from!

Next Generation Science Standards:

Middle School- LS1, LS2 High School - LS1, LS3, LS4



