

## **LIST OF PROGRAM SUGGESTIONS**

### **Curriculum Linked Programs**

Section I

History  
Language Arts  
Science  
Technology & Engineering  
Math  
Environmental Studies

### **Themed programs**

Section II

Propulsion Engineering  
Navigation  
Sail Training  
Piloting, Seamanship and Small Boat Handling  
Disaster Readiness Training  
Marine Careers  
Maritime Credentials

### **Students Activities**

Section III

Mind-set, Skill-Set & Tool-set  
Building Project Boats and Vehicles  
Learning from the Commercial Vessels of the Bay  
Programs aboard the Wickford Harbor Launch  
Programs Exploring Narragansett Bay  
Marine Environments  
Outings by Boat  
Vacation Weeks & Summer Camps

## **Curriculum Linked Programs**

## **Section I**

### **History**

History of the Narragansett Bay  
Forts of the Bay  
Lighthouses of the Bay  
Battleship Cove – Fall River  
Ida Lewis  
Paul Cuffee  
John Paul Jones  
Roger Williams

Safe harbor, deep water  
Colonial Rhode Island  
Rhode Island natives  
Triangle Trade  
Age of Steam  
Navy in Rhode Island- Quonset and Newport  
Small boat voyages

### **Language Arts**

Sea stories and the classics:  
Perfect Storm, Moby Dick,  
Sailing Alone Around the World  
20,000 Leagues Under the Sea

Lighthouses for Literacy  
Log keeping and journaling

### **Math**

Navigation Geometry  
Construction measurements, weights,  
Conversion tables  
Speed, time, distance

KidWind® -swept area calculations, Betz limits  
calculation, coefficient of energy, units  
and conversions

### **Science**

Robotics  
Seaperch® robotics – buoyance, stability,  
electrical circuitry, forces in motion,  
propulsion, measurements and data  
collection

KidWind® Wind Generators – electricity, energy  
sources and concepts, wind and wind  
power, energy efficiency, motors and  
generators and turbine technology  
Experiments in Physics

### **Environmental Studies**

Meteorology  
Storms and waves  
Tides and currents  
Solar power and photo-voltaics  
Wind power  
Alternative energy

Land use at the shore  
Storms and storm surges  
Storm runoff  
Estuarine ecology  
Beaches and beach erosion  
Rivers and watersheds

## **Themed Programs**

## **Section II**

### **Propulsion Engineering**

Mechanics  
Plumbing  
Electricity  
Gas and Diesel Engine technology

Generators  
Hydraulics  
Instruments and Electronics  
Marine System

### **Navigation**

Dead reckoning  
Electronic navigation  
Set and drift

Charts and tables  
Navigation tools

### **Piloting Seamanship and Small Boat Handling**

Drills and training  
Watch standing & vessel operations  
Marlin spike seamanship

Boating Safety Certification\*  
Fire Fighting and Safety  
"Small Boats to Boston"

### **Disaster Readiness Training**

Hurricane Preparedness  
First Aid CPR\*  
Oil Spill Education  
Pollution Response and Clean up  
Booms and Skimmers

Beach Clean up  
Health & Safety Training  
Floods and flood preparedness  
Flood damage mitigation

### **Sail Training**

Sailing Principles  
Marlin spike seamanship  
Teamwork and Leadership

Rigs and Rigging  
Kite Sailing & Surfing

### **Marine Careers**

Transportation: Boson, Deckhands, Stewards,  
Mates, Captains, Navigators, Submersible Pilots

Oceanographer, Research Scientist, Natural  
Products Biologist

Science: Marine Biologist, Engineering Scientist,  
Fish Ecologist, Geophysicist, Marine Mammal  
Biologist, Marine Taxonomist, Micro Biologist,

Credentials: Sea time; OSHA training, CPR/First  
Aid; Boating Safety Training; Firefighting; TWIC  
card; and Merchant Mariner documentation

## **Student Activities**

## **Section III**

### **Mind-set, Skill-Set & Tool-set**

Model boats

Green machines

Simple Machines

Amazing Machines

How things work

Tinkering and Taking it apart

Reverse Engineering

Make it and break it

Tools that Teach

A Reverence for Tools

Blades and Sharpening

### **Building Project Boats & Vehicles**

Quick Boats

5 Boats on the Bay

Boat in a Box – Boat Building Program

Project boats & vehicles

### **Learning from the commercial vessels of the bay**

Vessels of the Bay –

Tugboats and barges; car carriers;

Fishing boats; navy vessels;

Okeanos Explorer (NOAA);

Research vessels, launches and ferries

Ship Tracking Vessels Underway

New Build Launchings

Terminals and Shore Facilities

Passenger Transportation

### **Programs aboard the Wickford Harbor Launch**

Fishing for Adventure

Pirates of the Bay

Shipwrecks and Sea monsters

Island Castaways

Boats and Harbors

Beach Bonanza

Soaring vs. sailing

Kite propulsion

Games Crafts & Hobbies

### **Narragansett Bay Exploration**

What a Difference a Bay Makes

Creatures of the Bay

Otter Trawl – Net Tow

Cameras below

Understanding RI fisheries

Shellfish and Shell Fishermen

Aquaculture

Meteorology



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### **History of the Narragansett Bay**

Forts of the Bay

Roger Williams

Lighthouses of the Bay

Safe harbor, deep water

Battleship Cove – Fall River

Colonial Rhode Island

Significance of the Bay in Shaping

Rhode Island natives

RI history and society

Triangle Trade

Ida Lewis

Age of Steam

Paul Cuffee

Navy in Rhode Island- Quonset and Newport

John Paul Jones

Small boat voyages

### **Marine Environments**

Salt Marshes

Coastal Buffers

Wetlands

Estuaries

Rocky shores

Watersheds

Beaches

### **Outings by Boat**

Bird watching

Classroom afloat

Seal watching

Marine Trades Exploration

Lighthouse tours

Prudence Island Adventures

Nautical night skies – meteor showers,  
constellations, lunar observations

Prudence Island – NERR research laboratory

### **Camps**

Week-end Camps

Leadership

Vacation Camps

Teambuilding

Summer Camps – Day Camps, Overnights

Self-esteem building

Class trips

## Samples of program descriptions

Our mission is to empower, engage and enrich the lives of students with hands-on activities and a reverence for tools, where students learn new skills, see new things and experience real world situations. Programs that encourage self-esteem, communication, and teamwork represent our core values.

All of our programs feature unique mentors and staff from a collaboration of professional mariners and educators who are eager to share their vast knowledge and experience. Please note that all of our vessels are fully Coast Guard inspected and certified. Program pricing can be expressed by the person or by the group, based on duration, number of participants and frequency.

### **Model Boats and Projects**

This is a fun, interactive program that promotes manual dexterity and skill as well as the joy of completing a project you build yourself. A variety of boat models and other small projects captures the interest of young people and introduces them to the values of planning, completing, and enjoying things that they make with their own two hands. A reverence for tools, attention to safety, a connection to the trades and the personal interactions that promote them are additional values of this program.



**Simple Machines and How Things Work** is a hands-on opportunity to connect a reverence for tools, techniques and the principals of how things work. From marine engines to outboard motors, bicycles to lawnmowers, and a variety of machines will be explored. We will learn first-hand about plumbing, electricity and the basic functions of common every day technology.

**Health and Safety** is derived from our US Navy Sea Cadet program on disaster readiness training. Here young people will learn about their bodies, good health and fitness, and about ways to live healthy lives. We will learn about the connection between an accident and those who respond to them. A cut, a slip and fall, an auto accident, the police, fire department, an ambulance; how do all these things fit together? Presented by our expert in this field, kids will become thoughtful, decisive and be empowered to take correct action both before and when an emergency arises.

Outreach programs visit your school and field trip programs take place at our facilities. These programs are similar to our after school programs but focus and connect more closely to curriculum standards and goals.

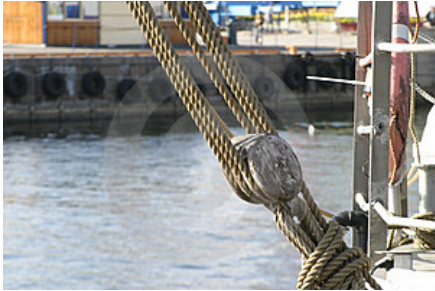
### **Green Building – “WIND TURBINE”**

Offshore wind turbines are planned off RI's coast – Do you know how to build one? What is wind energy? How does wind make



electricity? Students will build a working wind turbine perform hands-on experiments that help students understand current energy issues. Students have fun while being introduced to various hand tools, power tools, and basic concepts in mechanics and electricity.

### **Amazing Machines**



This hands-on program invites students to explore the science and art of machines, connecting tools, techniques and the principals of how things work. We will explore the universal components that make up machines, investigate the different principles of control, and then put it all together discussing how machines convert and transform energy into mechanical motion.

### **Seaperch**

An underwater robotics program in which students build and operate an underwater ROV (remotely operated vehicle). Designed to stimulate and encourage interest in multiple aspects of science, technology, engineering and mathematics (STEM). The SeaPerch program, developed by MIT, allows students a hands-on experience suitable for in-classroom or after-school learning. This program can be tied together with local, regional and national events.



### **Tools That Teach**

The goal of this program is to use the building of small projects as a way of demonstrating educational goals and standards. Math, science and communication skills will be connected with the satisfaction of completion. The projects themselves represent fun hands on expression of student's interests and that allows curriculum subjects to com to bring these subjects to life.



### **Five Boats on the Bay**

This program is often used to accommodate large groups or teams of students and takes place at our town beach or other waterside facilities. This is a day long educational workshop that shows students the practical applications of academic disciplines. Math, science, history and the hands-on skills are combined in the building of these seaworthy vessels. Students will get to build 5

different types of boats. They represent both a historical and technological line of development. We will build a coracle, raft, dugout canoe, tri-maran, and a skiff.

Principles of flotation, buoyancy and simple machines are examples of curriculum links. This is a wonderful team building exercise were kids actually sail the boats they build.

### **Narragansett Bay Exploration**

This is an educational adventure program aboard the motor vessel Sea Princess. Our curriculum links include math, science and history, with a particular focus on the marine environment. Students experience the world of the marine biologists as they “haul back” a net full of creatures from the bottom of the Bay. Plankton net tow, water quality testing and the vessel’s navigation are all used hand-on learning experience.



### **What a Difference a Bay Makes**



The purpose of this cruise is to create an opportunity for students to learn about the rich diversity of daily work on Narragansett Bay. Tug boats, tankers, cargo vessels, fishermen, research vessels and more; these are just a few of the ships that operate on the Bay. We will learn how our waters and its shore have affected the history, economy, and growth of the Ocean State. We will meet the people

who work on the Bay and explore their jobs and the skills they need. Curriculum links include geography, history, social studies and economics.

### **A Wickford Seal Watch**

The annual migration of seals to Narragansett Bay every winter affords us the opportunity to observe these important marine mammals in their natural environment. Aboard our safe and comfortable vessels students will be able to learn and identify the seals that call this bay their winter home. This is an excellent opportunity for students to hone their skills as marine biologists, and collect data and census information valuable in understanding this protected species. This is an annual favorite for students of all ages.





## Wickford Waterfront Adventures:

### Island Castaway, Marooned on a Deserted Shore

Have you ever read or seen *Robinson Crusoe*? Ever wondered how you would survive if you were marooned like him? Join us to explore the skills of wilderness survival. We will build confidence and self-reliance through the study of island survival techniques like scavenging for food, designing shelters, creating tools from raw materials and more. There will be plenty of fun hands-on activities.



### Where in the World Are We

This is an outing out onto Narragansett Bay aboard our modern, safe and comfortable motor vessel. Our goal is to use the art and science of navigation to bring to life many of the principles of math and science that we learn about in the classroom. The direct curriculum links include an understanding of latitude, longitude, bearings, angles, and the compass and how it works. Reading a chart,

plotting your course and an introduction to state of the art navigation equipment; all of these activities are designed to give students a sense of their place in this world. Our view from the bay gives us new insights into the geography and geology of our Ocean State home.

## **Brandaris Model Boat Club**

This after school activities program, based on the building of model boats, introduces young students to:

- Use of basic hand tools;
- Use and interpreting of plans, prints, and instructions;
- Layout and completion of projects;
- Interrelationship of parts, subassemblies, end products,
- Preparation, primers and coatings, innovation and customization
- final completion and sailing of our boats

## **Boat In A Box**

This program combines the vocational skills and techniques of small boat building with opportunities to demonstrate standard based curriculum lessons in a hands-on experiential setting.

The Boat In A Box program employs the use of a 20 foot standard shipping container as a traveling boat shop. This container, altered to specification, allows for the delivery to any school yard a complete, self-contained, and completely secure boat shop. Fitted with heat, light and electrical utilities needing only a power cord connection, and including a swing out wall panel with soft enclosure ( canvass and isinglass), this module contains all the elements necessary for the completion of a 12 to 18 foot rowing or sailing boat. Internal components consist of work bench, hand tools, power tools, safety equipment and demonstration aids. The strong back and support structures necessary to assemble components of the boat under construction will slide out so as to be accessible to students participating in the program. Step by step components of the project are made ready by the instructor by prefabrication or built on site with students as outlined in the lesson/building plan. Student participation is maximized, matching students' skill sets, curriculum goals, and safe and practical building techniques. The result is a boatbuilding program, pre-engineered in all aspects to meet the time, budget, skills and curriculum goals identified by the school.

The power and value of this construction project has many successful models from which to demonstrate efficacy. This creative packaging concept provides a practical and safe means of bringing these assets to a school on a temporary basis avoiding the cost and other obstacles faced by more permanent facilities. It does, however, bring ownership, and neighborhood spirit by allowing the "we built it here" spirit to flourish. The value and future use of the finished boat can lead in many directions from fund raising sales and auctions to summer and after school programs with the boat or fleet of boats created by the program.

Opportunities for guest demonstrations, speakers, mentors, trade representatives and others to visit and compliment the program are endless. Students are empowered to show and demonstrate their skills and accomplishments in a real way.

Not only in its real form, but as metaphor for life learning, this program has numerous links to history, math, language arts and sciences as well as advocacy for vocational training and career path identification.

A full range of educational and logistical support can be provided before, during and after The Boat In A Box programs resides at the school.

The Boat In The Box Program is also available to a range of other youth development programs, such as after school programs, intergenerational learning programs and social organizations, near and far. It represents an ambassadorial opportunity for participating marine trades partners as well as export for and beyond the Ocean State.

## In Conclusion:

Included herein is our best effort to list and categorize the many ways we wish to add our resources to your tools and techniques to teach. Our value is best realized in a partnership approach. We wish to understand the needs and wishes of students and teachers, and create hands on, real world, experiences that can expand and enrich the process of learning.

Allow us to meet with you and plot a course together...