

Ocean and You

marine and environmental education brought to your school

<http://OceanAndYou.com>
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2009 Reaves Dr
Raleigh, NC, 27608

Classes Aligned with NC Science Competency Standards

The classes listed here will help your students meet the North Carolina Science Competency goals. As described below, the programs last between 45 and 90 minutes, at a cost of \$6/child/hour. We will gladly lengthen or shorten the programs on request.

Kindergarten Goal 1: similarities and differences in animals

Curious Critters (45 min): What kinds of critters are in the ocean? How do they move?

- Dancing-hand story about a lovesick sea serpent
- Hands-on: globe catch – how often do we touch the ocean?
- Stations
 - Mammals (how are they similar and different? What makes a mammal?)
 - Fish (ditto)
 - Birds & Reptiles (ditto)
 - Invertebrates (ditto)
 - Globe: can you trace a line around the world without touching land?
- Critter parade – choose an animal and show how it moves

First Grade Goal 3: properties and relationships of objects

Kitchen Ocean: What makes things sink or float? We will experiment with water, oil, salt and balloons, and make an “ocean in a bottle”.

Second Grade Goal 2: changes in weather

The Water Cycle: Round and round and round it goes. Where does it stop? It never does! Let's explore the water cycle, and our place in it.

- Water cycle dance
- We are part of the water cycle
- Sewage treatment & storm drains
- Explore our watershed

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Second Grade Goal 4: understanding sound

Sound in the Ocean (90 min): What kinds of sounds can you hear in the ocean? How does sound travel through different materials?

- Review of pitch and volume
- Active listening to whale sound (show pitch and volume with hands)
- Hold up your picture if you think the thing shown made this sound
- Stations
 - Sound transmission through different materials
 - Tin can phones
 - Space phones
 - Sound tubes
 - Slinky as model for sound wave
- Discussion: what did we learn from stations?
- Discussion: SOFAR channel in the ocean; use in climate science; ethics questions

Third Grade, Goal 3: earth/moon/ sun system

Joy, Fun, Seasons and the Sun: How does the sun rise and set each day? And why does it set so early in fall and winter? Why does its apparent motion change with the seasons? Come to this session prepared to be the earth or sun. We will orbit, rotate and experiment with globes and light bulbs.

Fourth Grade Goal 1: animal behavior and adaptation

Animals in the Ocean(90 min): How are marine animals different from those on land? How are they similar? Can we figure out what animals are related to each other by studying their shapes, or the way they move?

- Discussion with animal models: how is a predator different from a grazer?
- Hands-on with models: why do marine animals have pale bellies and dark backs?
- Hands-on: draw a marine animal, showing the adaptations we've discussed
- Discussion: what is marine debris and how does it affect animals?
- Hands-on: sort the trash by how long you think it will last in the ocean
- Discussion: some trash lasts hundreds of years – how long is that?

Fifth Grade Goal 2: landforms

Barrier Island Processes: What is so special about the Outer Banks? How is the ecosystem unique, and why are the islands especially fragile? What could people do to protect them?

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Fun and Messy Programs for After-School or Daycare

Sandy Stuff: I bring in small sand trays to simulate a beach visit.

- Sort through the things found on the beach – what categories do you find?
- Look closer with magnifying glasses – are there any surprises?
- Build a sand castle
- Build a model of the ocean floor
- Build a model of a barrier island
- Can include a “beach in a bottle” take-home craft

Wet & Wild: I bring in large tubs for water, to explore streamlining and buoyancy.

- Wave your hand in the water, fingers open and closed – how does it feel?
- Make a model of a sea animal – can you make it move through the water easily?
- Make a model phytoplankton – can you make it so it neither floats nor sinks?
- Make a boat or submarine
- Explore density with balloons, oil, water and salt
- Can include an “ocean in a bottle” take-home craft

Pre-School Programs

Hermit Crab Decoration This popular program is built around Eric Carle’s book, *A House for Hermit Crab*. We start by examining different toy crustaceans and trying out their different ways of moving. Children act out the book as we read it, and make their own decorated hermit crab.

Curious Critters Let’s play with all the animals that live in the ocean! Can you tell me how two animals are the same and different? Do you know which animals eat which other ones? Can we move like the animals move? This program works especially well with a fast internet connection and a big screen, but is fine in a low-tech environment too.

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