

# Coastal Distance Kit

## Disclaimers and Guidance:

- Check with an adult before doing any of the activities below.
- You'll need 2 glass jars for the "Estuary in a Jar", "Walking Water", and "Wave Bottle" activities, do these with an adult and use the jars with caution. Mason jars or baby food jars work well!
- Do not use the bowl from the Stormwater Solutions activity to eat or drink out of.
- Be cautious when using any oyster shells, they have sharp edges.

## We'd love to hear from you on social media!

- Use the hashtag **#CoastalDistanceKit** in any posts you make with the kit and the North Carolina Coastal Federation (@nccoastalfed) might reshare it on our Facebook or Instagram pages!

## Want more activities?

If you have access to the internet, check out our Distance Learning Lab ([www.nccoast.org/distance-learning-lab](http://www.nccoast.org/distance-learning-lab)).

- Facebook: North Carolina Coastal Federation
- Instagram, Twitter: @nccoastalfed

## Activity Instructions:

### Stormwater Solutions

- **Supplies:** *White bowl with blue "creek" drawn down middle OR sink, Food Coloring, Sponges, Water*
  - Find a small white bowl and paint or use a marker to make a blue "creek" through the middle (make sure you ask an adult if it's ok to do this first! Also, don't reuse this bowl for eating out of). \*If you don't have a white bowl and such, you can use the sink to do this activity. The creek can be the drain in the sink. See if you can look on a map to find a creek near your house that this can represent.
  - The rest of the bowl is the land around the creek. Think about types of pollution that might be on the land. Some examples include: oil and gas from cars, litter, pet waste, excess soil, fertilizers and pesticides.
  - Use food coloring to place 1 drop for each pollution source you can think of along the inside edges of your bowl (don't drop directly into the creek).
  - *What do you think will happen to those pollutants when a rainstorm comes?*
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- Pour a small amount of water along the edges of the bowl and watch what happens.

- Do the pollutants flow to the local creek (blue section of your bowl)? \_\_\_\_\_
- When rain carries pollutants into local waterways it is called **Stormwater Runoff**. There are many ways to keep waters clean by using Stormwater **Best Management Practices** (BMPs).
- Empty the bowl and repeat the same steps as before, but this time add some Stormwater BMPs before the rainstorm.
  - Use sponges to represent different BMP examples. You can learn about the different types of Stormwater BMPs in the [Smart Yards](#) booklet.
- Pretend that the sponges are a rain garden, a living shoreline, and a backyard wetland which will soak up stormwater runoff.
- When you add water this time, do the rain garden, living shoreline and backyard wetland sponges help keep the local waterway clean? \_\_\_\_\_
- We can help keep waters clean by doing simple things on land which soak up and filter rainwater before it can carry pollution to our waterways.

### Pelican Pete Craft



**Supplies:** Toilet Paper Roll, Crayons, Scissors, Tape, Pelican Pete Outline

- Color the [Pelican Pete Outline](#).
- Cut out the different sections using scissors.
- Use tape to attach onto the toilet paper roll.
- Name your Pelican! \_\_\_\_\_
- Optional: Go to [www.nccoast.org/distance-learning-lab](http://www.nccoast.org/distance-learning-lab) to watch a story about Pelican Pete and marine debris (see Coastal Explorations section of the Distance Learning Lab webpage).

## Oyster Activities

### Egg Carton Oyster



**Supplies:** Scissors, Tape, Pink felt, Egg carton, Pom-pom, Googly eyes

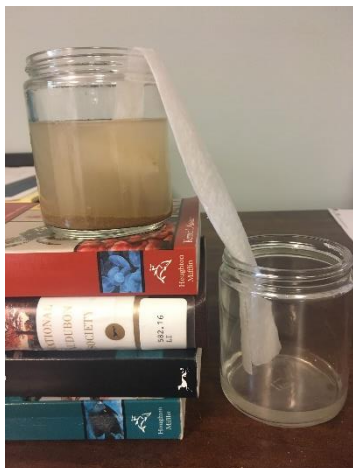
- Cut out two sections of an egg carton.
- Set one egg carton cup on top of the other. Place a piece of tape on the back edge of the egg carton cups to hold them together.
- Tape a small, circular piece of pink felt to the inside of the oyster.
- Place a small white pom-pom or bead on top of the pink felt. This is your pearl.

- Oysters make pearls when a sand grain or other particle gets stuck inside the oyster's shell. This is irritating, so the oyster covers the sand grain with a smooth substance called **nacre**, which is similar to the material covering the inside of the shell. After several layers of nacre the sand grain eventually becomes a pearl!
- Tape or glue two googly eyes to the outside of the oyster.
- Name your oyster! \_\_\_\_\_
- Oysters are important for **food, filtration, and fish habitat!** (the 3 Fs!)

### Oyster Shell Clay Print

- **Supplies:** Air Dry Clay or Playdough, Oyster shells
- \*Be careful with the shells as they can be sharp! You can use another seashell if you do not have any oyster shells.
- Roll out air dry clay or playdough and use oyster shells to create a clay print. Press the oyster shells into the clay, and then allow the clay to dry with the imprint of the shells.
- Fun fact: 1 oyster can filter up to 50 gallons of water each day. That's about a bathtub size of water! Healthy oysters help keep our estuaries clean.

## Water Filter Experiment



**Supplies:** 2 glass jars (mason jars work!), Paper towel, Scissors, Water, Sand

- Put water and a little bit of sand/dirt into one of the jars.
- Stack this jar on top of several books so that it is above the level of the other jar.
- Cut a paper towel in half, and then in half again. Using only one paper towel piece, fold it, and place half of it in the jar with dirty water, and the other half into the empty jar. Pretend that the paper towel is an oyster in the estuary.
- Observe what happens to the water in the jars.
- Over time, the water moves through the paper towel and clean water enters the empty jar!

- How is an oyster like the paper towel in the experiment? \_\_\_\_\_
- Oysters are **filter feeders** and clean and filter the water in our estuaries while they eat. One oyster can filter up to 50 gallons of water each day!

## Oyster Coloring Sheet

[Oyster Coloring Sheet](#): This coloring sheet shows you the inside of an oyster and their life cycle! See if you can correctly unscramble the oyster anatomy words.

## Living Shorelines & Estuary Activities

### Estuary in a Jar



- **Supplies:** Two glass jars, food coloring (red & blue), Salt packets, Laminated paper or something to place on top of jar so when you flip it with water inside, the water doesn't spill, Water, Spoon

- Find a spot to do the experiment outside or inside where it's ok to spill water (sink or bathtub).
- Add tap water to both of the jars. Fill them ALL the way to the top.
- Add 3 drops of red food coloring to one of the jars and stir. This will be the River Jar. Can you think of a river near where you live?
- *When rivers begin, do they have fresh or salt water in them?* \_\_\_\_\_
- Rivers have fresh water when they begin, the beginning of a river is called its **headwaters**.
- Add 3 drops of blue food coloring to the other jar and stir. This will be the Ocean Jar.
- *What kind of water is in the Ocean?* \_\_\_\_\_
- The ocean water is salty.
- Add 1 tablespoon of salt to this jar and stir it in (if using a baby food jar). If you are using a mason jar, add 2 tablespoons of salt and mix.
- *What do you think will happen when you place the fresh water River jar on top of the salty water Ocean jar? Make a hypothesis (an educated guess).* \_\_\_\_\_  
\_\_\_\_\_
- Place a piece of laminated paper on top of the River Jar with red food coloring.
- Flip the River Jar over while holding the laminated paper on top of it so that the water doesn't spill out. Place this jar and the laminated paper on top of the Ocean jar with blue food coloring, so the laminated paper is in-between the two jars. Carefully slide the laminated paper out from in-between the jars so that now the River jar is on top of the Ocean jar with nothing in between. This may take a few tries! It's ok if you mess up and have to start over.
- *What happened to the water in the different jars?* \_\_\_\_\_  
\_\_\_\_\_
- The River water should have stayed on top of the Ocean water, and there should be a small area of mixing in-between the two, where the water looks purple.
- *What kind of water does the purple represent?* \_\_\_\_\_
- The purple water is an **estuary**, where fresh and saltwater mix and create **brackish** water. Taylors Creek, Core Sound, and Gallants Channel are all examples of estuaries.
- *Can you think of any animals that live in the estuary?* \_\_\_\_\_  
\_\_\_\_\_
- Estuaries are home to fish, crabs, shrimp, and many other types of marine life! We build **living shorelines** along our estuary shorelines to help keep the sand in place and prevent erosion.

### Estuary Kid's Page

[Estuaries 101 Kid's Page](#): Check out this paper in your kit to learn more about estuaries!

## Wave Bottle



**Supplies:** 1 glass jar with lid, baby oil, water, food coloring

- Fill a glass jar a little over half the way up with water.
- Add 3 drops of blue food coloring.
- Pour baby oil on top of the blue water.
- Secure the jar lid, and make sure it is tight so you don't spill any!
- Tilt the jar back and forth and watch the waves move. If you shake the jar bubbles will also form.
- Water is more **dense** (heavier) than oil so they don't mix. This is why the oil floats above the water.
- Waves in the estuary and ocean can cause **erosion**, such as the weathering away of sand on a beach. Living Shorelines are one way to help prevent erosion and keep habitat whenever waves approach.

## Build a Living Shoreline



**Supplies:** Container that can hold water, Sand, Fake aquarium grasses, Popsicle sticks, Tape, Water, Oyster shells

- Pour sand onto one side of your container.
  - Place the fake marsh grass along the edge of the sand and place two oyster shells in front of the grass. Pretend that you planted these grasses and used recycled oyster shells to make a home for new baby oysters (called **spat**) to grow on top of. This will be your **living shoreline**.
  - Tape together popsicle sticks to create a seawall/bulkhead. Place this on the other side of the living shoreline. (see picture above)
  - Add about an inch or two of water into the side of your tub that doesn't have any sand.
  - Use your hand or a small paddle to make waves.
  - Observe what happens to the sand in front of the shoreline or beach.
  - *Which do you think creates more habitat for plants and animals, the Living Shoreline with marsh grasses and oyster reef or the seawall/bulkhead?*
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- *Why do you think we call the planted grasses and oyster shell reef a "living" shoreline?* \_\_\_\_\_
  - Living shorelines create habitats for many plants and animals in the estuary. We call them living shorelines because they work with nature to protect from erosion and provide a home for living plants and animals too.
  - Did you know that a healthy oyster reef can be home to up to 300 different species in the estuary?

## Marine Debris Activities

### Rubber Band Game

- **Supplies:** Rubber band, timer
- Pretend that your hand is a fish. Make your best fish face!
- Your fish has become **entangled** in **marine debris** while swimming. Your job is to try and free yourself from the litter.
- Marine debris is trash that is found in our coastal waterways and habitats.
- Rules: You can only use your fish hand (the hand with the rubber band on it) to free yourself from the litter (rubber band). You cannot use your other hand, a table, or anything else to help you. You can only use the fingers on your “fish hand”.
- Place one end of the rubber band around your pinky finger.
- Take the rest of the rubber band and twist it across the back of your palm (making an X shape) then hook the other side of the rubber band onto your thumb.



- Set a timer for 20 seconds. If you don't have a timer, have someone help you to countdown.
- Using only your “fish” hand, try to remove the rubber band and free your fish from the marine debris.
- Were you able to free yourself from the marine debris litter? \_\_\_\_\_
- Do you think that your fish may still have been harmed by the litter, even if you were able to free yourself? \_\_\_\_ How? \_\_\_\_\_

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- Fish and other animals can still be injured from marine debris litter even if they escape. They may not be able to swim as well, have enough energy to hide from predators or search for prey (their food).
- What are some ways that you can help reduce marine debris? \_\_\_\_\_

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- Shoreline cleanups, using reusable items and educating friends and family about marine debris are great ways to help reduce marine debris.

## Solo Cleanup

Solo Cleanup \*Ask an adult before doing a cleanup

- **Supplies:** *Gloves, Trash Bag, “[Talking Trash & Taking Action Cleanup Data Form](#)”, Pencil/Pen*
- Optional: Using the supplies listed above, do a solo-cleanup in your yard, park or beach nearby and collect and throw away litter you may see. \*Do not pick up any sharp objects and be careful of broken glass.
- If you have a phone or tablet, you can download the “Marine Debris Tracker App” (<http://marinedebris.engr.uga.edu/>) to record data on what you find. You can also use the data form provided instead.
- *Be sure to practice safe social distancing and stay at least 6 feet away from others and stay away from roads.*
- Tag us in any cleanup photos using #CoastalDistanceKit and @nccoastalfed

## Marine Debris Workbook

[National Oceanic and Atmospheric Administration Workbook:](#)

- Learn more about marine debris with this fun educational booklet.