Pre-field Trip Activities

What do scientists study at SERC?
Unscramble the words to list some of the topics studied.

RATEW
SIFH
IAR
SLDTEWAN
STAPLN
RETEPONACY
EGALA
SIVEN
THEREW
BRACS
TROSSEF

Take the bold and underlined letters on the left and make a word that sums it up!

___ ___ ___ ___ ___ ___ ___ ___
SERC Word Splash

Estuary

Plankton

Salinity

Watershed

Oyster

Photosynthesis

Invertebrates

Fish

Clam

CRAB

Temperature

Runoff

Water Quality
Field Trip Scavenger Hunt for the Bus

As you ride the bus today, look out the window and see if you can find and check off the following items on your trip.
When there is an * write the name, place or number if you can.

Hay bale _____
Sign that is red _____
Mailbox _____
Airplane _____
Motorcycle _____
Flowering tree _____
Dog _____
Sailboat _____
License plate from Canada ____*
Double tandem truck _____
Hotel ____*
Barn ____
Cow ____
Sign that is green ____*
Weather vane _____
Bridge ____*
Fast food place ____*
School bus _____
Person riding a mower _____
House being built _____

Men working sign _____
Bank _____
Doghouse _____
Seafood restaurant ____*
Camper/RV _____
River ____*
Moving truck ____*
Coke or Pepsi truck _____
Ruins of an old house ____
Firehouse or fire truck _____
License plate for a state west of the Mississippi ____*
Tanker truck _____
Church, synagogue, temple, or mosque _____
Sheep _____
Grocery store _____
Gas station _____
SERC sign _____
Post-field Trip Activities

PLANKTON REVIEW

List below the plankton you saw under a microscope in the Investigating Plankton Station.

_________________________________________  _______________________________________

_________________________________________  _______________________________________

_________________________________________  _______________________________________

Name three plankton that remain microscopic their entire lives:

_________________________________________

_________________________________________

_________________________________________

Draw one of the three you listed above
WATER TESTING REVIEW

Now you can answer some questions about the quality of water in the Rhode River on the day you visited SERC.

1. How salty was the water? Give your answer in ppt. ____________________

2. What causes salinity to change?
   ________________________________________________________________
   ________________________________________________________________

3. What was the pH reading? ____________________

4. Can acid rain that falls on the watershed change the pH in the Rhode River? ____________________

5. How deep was the river? ____________________

6. Will the depth of the river change throughout the day? ____________________

7. You measured the turbidity or how far down light can travel.
   What measuring device did you use? ____________________

8. What was your reading when you used this tool? ____________________

9. Did any light go down to the bottom where you were standing on the dock? ____________________

10. What was the temperature of the water? ____________________

11. Explain why you think the Rhode River is a healthy place for plants and animals to live.
   ________________________________________________________________
   ________________________________________________________________
FISH REVIEW

The depth in the Rhode River is fairly shallow, around 5-12 feet. The shallow depth makes the river a nice place for fish and other aquatic organisms to seek shelter when they are small.

Draw some of the fish you saw in the Rhode River during seining at the Going Fishing station or the Oyster Bar Community Station. Underneath each fish write its common name. Explain what you learned about the food chain.
FISH HEADS AND TAILS

Try to match the heads and tails of these fish with the names listed below. Some names have more than one answer.

A

B

C

D

E

F

G

H

I

J

K

________ Anchovy
________ Menhaden
________ Spot
________ Hogchoker
________ Silverside
________ Mummichog
________ Killifish
Draw as many different invertebrates as you can from the Oyster Bar Community Station. Use these “petri dishes” to contain your animals. Label each specimen.
**BLUE CRAB REVIEW**

**Identify parts of the crab**

- Claws
- Eye stalks
- Crustaceans
- Shell
- Outer covering of crab
- Person who crabs for a living
- Group of animals having an exoskeleton
- First larval stage of blue crabs
- Eyesight structure in blue crabs
- Second stage in blue crab life cycle
- Equivalent to “growing” for crabs
- Means “ten-legged”
- One that feeds on dead or decaying material
- Used by crabs for catching prey

**Draw my abdomen**

- Male
- Immature female
- Mature female

---

<table>
<thead>
<tr>
<th>Claws</th>
<th>Megalopa</th>
<th>Scavenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye stalks</td>
<td>Zoea</td>
<td>Molting</td>
</tr>
<tr>
<td>Crustaceans</td>
<td>Waterman</td>
<td>Decapod</td>
</tr>
</tbody>
</table>

---

Smithsonian Environmental Research Center
ACROSS
1. Temperature, pH, turbidity and salinity, will tell you about the ______ _______ (2 words).
6. Describes a body of water with salinity of zero ppt.
9. “Parts per thousand” abbreviated.
10. Disk used to measure turbidity.
11. Phytoplankton that may cause blooms.
12. Land surrounding a lake, river, pond, or bay.
14. Has a salinity of 34 ppt.
15. Neutral on the pH scale.
18. Parts per ________.
21. Describes a substance with a pH greater than 8.
22. What you use to determine the acidity of a liquid (2 words).
23. Highest point on the pH scale.

DOWN
2. Celsius scale is used to measure this.
3. A liquid very low on the pH scale.
4. Measured by a Secchi disk.
5. A mixture of saltwater and freshwater.
7. Initials of the Smithsonian Center.
8. Either ebb or flood.
14. When this is stirred up, light cannot penetrate to the bottom of the Bay.
16. Where scientists conduct aquatic research at SERC (2 words).
17. This can be made by humans or nature. Either way, it can destroy the water, land, or air.
19. Source of saltwater for the Chesapeake Bay.
20. A list of numbers measuring something.
Name that Animal!

Using the hints provided, can you name the animal described? Your choices are: blue crab, oyster, egret, bluefish, winter flounder, hooked mussel, periwinkle, menhaden, blue heron, seagull, and snapping turtle.

Across:
1. Crawl along rocks and seaweed, scraping off algae with their file-like tongues.
2. Bury themselves in bottom mud or sand.
3. Crustacean like its cousins, the shrimp and crayfish; has ten legs.
5. Once harvested in millions of bushels.
6. Found eating algae in large schools near water’s surface.

Down:
2. Found almost all over the world nesting, hovering, and flying along shorelines.
3. Predator with a jaw full of piranha-like teeth.
7. Found attached to rocks.
8. Blue with wingspan over six feet.
9. Flat with two eyes on one side.
Test your Bay I.Q.!
Circle your best guess.

1. The Bay is home to more than (1,700 or 2,700) plant and animal species.
2. The Bay is also home to more than (100 or 600) toxic substances.
3. Approximately (100,000 or 500,000) Canada geese spend winter by the Bay.
4. (More or less) coal is shipped from harbors in the Bay than is shipped from any other harbor in the U.S.
5. The average depth in the Bay is about (25 or 75) feet.

(Answers on the back cover)
Oyster Bar Community

Circle and label at least ten organisms you see in this oyster bar community.
**Answers**

1. 2700. This is due to the many different habitats within the Bay, the length of its shoreline, and the abundance of nutrients flowing into the Bay.

2. 600. People have historically dumped waste products into the Bay. Many species of waterfowl winter on the Bay. Many more use the Bay for resting, nesting, and feeding at various times of the year.

3. 500,000. Many species of waterfowl winter on the Bay. Many more use the Bay for resting, nesting, and feeding at various times of the year.

4. More. The ports of Baltimore, MD and Hampton Roads, VA are important to commercial shipping.

5. 25. One of the important characteristics of the Bay is that it is very shallow.