

Our ^{section B} Water

DO THE FIRST OR SECOND ACTIVITY IN THIS SECTION AND ONE OTHER ACTIVITY OF YOUR CHOICE. AFTER COMPLETING OUR **WATER** ACTIVITIES YOU WILL BE ABLE TO:

- >> **KNOW** and appreciate the species and ecosystems in your area that depend on water
- >> **TAKE** action to help raise awareness or to protect water-related biodiversity



SOME ACTIVITIES IN THIS SECTION REQUIRE PARTICIPANTS TO GO NEAR PONDS, LAKES, BEACHES, OCEANS OR OTHER WATER BODIES. BE SURE TO TAKE WATER SAFETY PRECAUTIONS AND TO DO THE ACTIVITIES UNDER QUALIFIED SUPERVISION.

LEVEL 1 2 3

**ACTIVITY
B.01**

Learn about your local watershed - an area of land that catches rain and snow, and drains into a larger body of water such as a marsh, stream, river, lake, ocean or groundwater. Make a model using soil, bark, rocks, papier-mâché or recycled materials of your watershed.

Don't forget to include all the inputs to the water including natural streams and runoff from farms or industrial areas. How do plants and trees on land fit into the watershed? How do land and water-based animals fit into the watershed? Explain how your model works to your leader, family, friends or group.

GROUP ACTIVITY

LEVEL 1 2 3

**ACTIVITY
B.02**

Learn about your local watershed - an area of land that catches rain and snow, and drains into a larger body of water such as a marsh, stream, river, lake, ocean or groundwater. Create a guided tour of your watershed.

Invite your family, friends or group to participate in the tour. Point out all the inputs to the water including natural streams and runoff from farms or industrial areas. Explain how plants and trees on land fit into the watershed. Explain how land and water-based animals fit into the watershed.

GROUP ACTIVITY

Our Air



Our Water



Our Land



Our World



Protect your watershed

LEVEL 1 2

ACTIVITY B.03

Draw a picture or take photos of two plants: one that lives on land and one that lives in water. Label the different parts of each plant (e.g. flower, stem, blade, holdfast). How are the plants similar? How are they different?

LEVEL 1 2

ACTIVITY B.04

Animals living in water have evolved different body adaptations (traits that help an animal survive and/or reproduce) to help them move in their environment. Compare different animals such as coral, zooplankton, flying fish, tuna, sharks, seals, orcas, sea horses, manatees, jellyfish and sea stars. What are some of their adaptations? How do these animals move? What are some examples of human inventions that copy sea animal movement? If possible, visit an aquarium to see sea creatures in action. Share your finding with your group.

LEVEL 1 2 3

ACTIVITY B.05

Make some puppets. Invent a puppet show that teaches people about the importance of healthy watershed and what they can do. Look outside to see how water runs in your environment and get your puppets to explain the differences between water running in a built environment (gutters, parking lots, etc.) and in natural systems. Make sure you observe the differences during rain and a few hours afterwards. Invite your family and friends to watch your puppet show. Older participants can perform their show for younger children.

GROUP ACTIVITY

LEVEL

2 3

ACTIVITY
B.06

Organize or participate in a beach clean-up. Monitor the progress of recovery. What can be done to make sure the area stays clean? If the beaches in your area are already clean, visit a beach once after a storm, then again at another time after the beach has 'cleaned' itself. What are the changes in the diversity of life along the beach and the shore? Discuss your findings with your group. **BE CAREFUL OF SHARP OR TOXIC ITEMS, USE APPROPRIATE PROTECTIVE EQUIPMENT, SUCH AS GLOVES.**

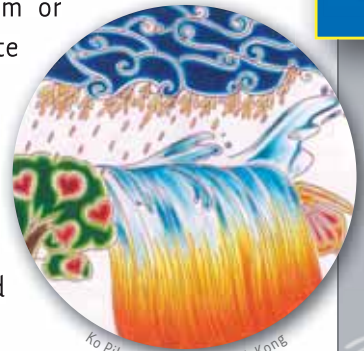
GROUP ACTIVITY

LEVEL

1 2 3

ACTIVITY
B.07

Explore a stream or pond. Examine the life inside. Take a water sample and examine it under a magnifying glass or microscope. Record what you see. Return the water and the creatures back to the stream or pond. Different species can tolerate different amounts of pollution. (If possible ask your local wildlife experts which species you would expect to find in clean water sources and polluted water sources in your area). How polluted is your stream or pond?



Ko Pik Sum, aged 17, Honk Kong

LEVEL

1 2 3

ACTIVITY
B.08

Build a hibernaculum (a place where animals hibernate) for amphibians. Don't forget that amphibians require humid environments, so the hibernaculum should be near water. Observe the animals that come.

www.rspb.org.uk/advice/gardening/reptiles_amphibians/hibernacula.asp

Our Air



Our Water



Our Land



Our World



LEVEL

2

3

ACTIVITY
B.09

Build a pond to create a new habitat for insects, amphibians, plants and others. Make sure you plant only native species. **PONDS CAN BE BREEDING GROUNDS FOR MOSQUITOES OR OTHER DISEASE-CARRYING INSECTS. IF THIS IS A PROBLEM IN YOUR AREA, BE SURE TO STOCK THE POND WITH FISH SPECIES THAT EAT INSECT LARVAE.**

GROUP ACTIVITY

LEVEL

2

3

ACTIVITY
B.10

Some species are important for cleaning water and making it available to other species living in the ecosystem. These filtering species can remove bacteria, viruses, heavy metals, toxins and/or debris. Compare the methods used by different species, such as oysters, mosses and trees, to filter water. Make your own water filter using natural or recycled materials. For ideas on making water filters visit www.ewb.ca/en/whatwedo/canada/projects/hso/teachers/w4w/workshop.html or library.thinkquest.org/04apr/00222/filter.htm

LEVEL

2

3

ACTIVITY
B.11

Meet with a local government or local conservation agency responsible for a stream or river. Invite them to make signs that will encourage people to protect these areas. Volunteer to paint and to help put up those signs.



Yae Sung Park, aged 15, Republic of Korea

Aulia Syaifitri, aged 15, Indonesia



Think downstream

LEVEL   ▲

ACTIVITY B.12

Make a rain barrel out of clean recycled material. List all the possible uses for the collected water. Use the water for some of the examples on your list.

LEVEL   ▲

ACTIVITY B.13

Pollution can hurt biodiversity. Do an experiment to find out how an oil spill can damage a bird's feathers. Take two feathers. Use a cotton ball to rub one feather with a few drops of cooking, bike or lubricating oil. Pour some water onto each of the feathers. What happens? How do you think an oil spill would affect birds? Share your answers with your group.

LEVEL    ▲

ACTIVITY B.14

The sea and sea life appear in many folk tales, novels, poetry, songs and works of art. Find some examples. Which aspects are real and which ones are make believe? Where do you think the make believe aspects come from? Create your own artistic work of the sea or sea life.

LEVEL    ▲

ACTIVITY B.15



The biodiversity in oceans provide humans with various nutritious foods, including plant-based foods. Make a poster or drawing of all the different uses that humans use marine biodiversity.

LEVEL    ▲



ACTIVITY B.16

Marine ecosystems can help protect coastal regions from damage from storms. What would happen to these regions if the marine ecosystems that protect them are destroyed? Create a poster, comic, play or other suitable medium to teach people about the value of these marine ecosystems.





LEVEL   Learn how bacteria in sea water and marine mammals help to breakdown and remove waste and pollution. Share your findings with your group.



ACTIVITY B.17

LEVEL   Did you know that, in the case of fresh wild-caught fish, it is better to buy certain species in certain months? This ensures the fish aren't caught during their spawning season. Prepare a calendar showing when it's okay to eat different fish species. For each month, draw images of that fish species that can be eaten without harming wild populations. Hang the calendar at your school or community centre.

ACTIVITY B.18

LEVEL   Visit a grocery store and inspect the fish counter and canned fish aisle. Record the brands and fish species that carry a logo indicating they are harvested or farmed sustainably (such as the Marine Stewardship Council logo). Make a poster encouraging people to buy these brands and species. Ask the store manager if you can hang the poster in the store.



LEVEL   Investigate grey water recycling. Invite a representative from your local government water department to talk with your group. What is grey water recycling? When and where is it appropriate? What regulations does your area have for grey water recycling? Design the ideal grey water recycling system for your home or school. Present your findings to your friends, class or group.

ACTIVITY B.20



Robin Boar-Low, aged 16, Italy

All species need water

LEVEL 1 2 ▲

ACTIVITY B.21

Visit a wetland near your home. Observe different species of birds that catch their food in the water. How do they hunt - by wading, by diving from the air, by dappling? What are the shape and size of their beaks? What are the shape and size of their legs? Which traits are best suited for different ways of hunting? Draw three birds and point out how their beaks and legs are suited to their way of catching food.

LEVEL 1 2 ▲

ACTIVITY B.22

Learn about unusual modifications that plants and animals have evolved to adapt to environments where water is difficult to find. Find five examples for plants, and five examples for animals. Present these examples to your group.



Seung Min Ryu, aged 9, Republic of Korea



Sahda Samiya, aged 10, Indonesia



LEVEL 1 2 3

ACTIVITY
B.23

Do an experiment to test the effects of acid rain on plants. Grow three plants in three separate pots under identical conditions except for the watering. Water the first plant with 100 percent water. Water the second plant with a mixture of 90 percent water and 10 percent lemon juice or vinegar. Water the third plant with a mixture of 50 percent water and 50 percent lemon juice or vinegar. What happens? How do you think acid rain affects plants and trees? Share your finding with your group.

LEVEL 1 2 3

ACTIVITY
B.24

Organize a masquerade party. Have everyone come wearing a mask of an animal that lives in the sea. Ask each person to learn three facts about their chosen species. Play water-themed games. Older participants can design and lead these games.

GROUP ACTIVITY

Atalanta Shi, aged 14, Canada





LEVEL 1 2 3

**ACTIVITY
B.25**

Go out in a boat. Observe all the plants (seaweed) and animals (birds, fish, shellfish, etc.) you see, hear and smell. Create a short report summarising your findings.

PRACTICE SAFE BOATING. TAKE WATER SAFETY PRECAUTIONS AND MAKE SURE THERE'S QUALIFIED SUPERVISION.

LEVEL 1 2 3

**ACTIVITY
B.26**

Go rock pooling in tidal pools. Build an underwater viewer to get a fish's eye (or crab or sea cucumber or ...) view. Draw the beach and where you find the different species. Which species are closest to and furthest from the shore? What special features do the species have that allow them to live in intertidal zones? Share your findings with your group. www.rspb.org.uk/Images/rock_pooling_tcm9-193626.pdf

LEVEL 1 2 3

**ACTIVITY
B.27**

Make yourself a hide (a camouflaged shelter where you can observe animals without disturbing them) next to a lake, pond or stream. The hide will keep you hidden from wildlife. Spend a day in your hide recording the insects, mammals, birds, reptiles and amphibians that come to the water.

LEVEL 1 2 3

**ACTIVITY
B.28**

Visit a water body at least once a season over the course of a year. Photograph or draw a picture of the plant and animal life present in each season. Record the temperature and describe the weather conditions. How do the seasonal conditions affect plant and animal life over the year?

GROUP ACTIVITY

LEVEL 1 2 3

Do any other activity approved by your teacher or leader.