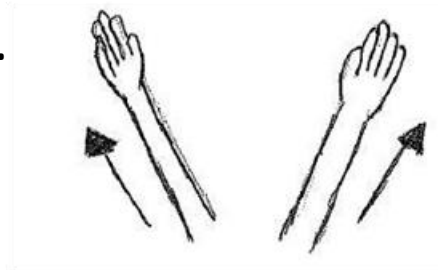


SUPPLEMENT B: Watershed Dance

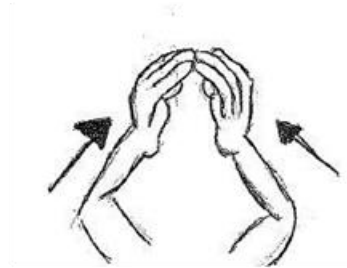
The Chesapeake Bay Watershed Dance

The Chesapeake Bay Watershed is...



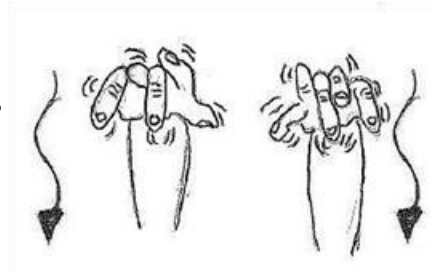
Hooray!

An area of land...



Make a House

Where all the rivers and streams...



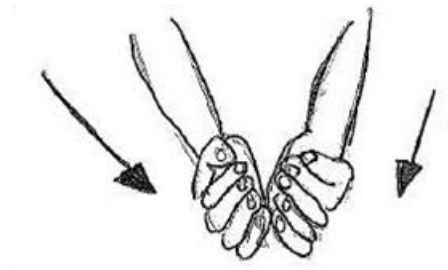
Spirit Fingers

Flow...



Swimming Fish

Into the Chesapeake Bay!



Bring a 'V'

SUPPLEMENT C: Watershed Game

Location: outside resource lab

Materials:

- Discs: blue=water; colored=land

Before students arrive, set up the two large orange cones 20-30 feet apart from each other depending on group sizes. Create a line in between the two cones with the colored dots. Place blue discs in a wavy line down toward the benches by the flagpole, perpendicular to the colored discs. Create boundaries with the small colored cones and the remaining colored dots, forming a large rectangular playing field.

When students arrive:

Welcome to Land's Wonders and Worries

Here, we are going to learn how stormwater affects our Chesapeake Bay watershed. Does anyone know what stormwater is? *Stormwater is any precipitation from a major storm event.*

Rain, snow and ice flows into and over something called a watershed. Does anyone know what a watershed is? A watershed is an area of land where all the streams, creeks and rivers flow into a large body of water.

Do you know which large body of water we all live near? *The Chesapeake Bay.* So, we call the area we all live in the Chesapeake Bay Watershed. That means, when it rains at your house, or at your school, that water will eventually end up in the Chesapeake Bay!

Perform the watershed dance with the students to help them remember the definition of the Chesapeake Bay Watershed (**WATERSHED DANCE SUPPLEMENT B**).

Now that we know what a watershed is, we are going to play a game that can give us an idea of what it is like to be a rain drop, moving through the Chesapeake Bay Watershed.

Imagine it is 400 years ago and Captain John Smith is exploring the Chesapeake Bay. What do you think he would see? *FORESTS all around.*

Divide students into two groups.

Group one – you will be my trees. Pick a spot on either side of the “river” (blue discs) anywhere inside the watershed boundaries. Do not stand in the river! Encourage the trees to position themselves so that the “raindrops” will have a difficult time getting to the opposite end without being tagged.

All my trees, plant your roots! This means you cannot move your feet but, like a tree, your arms are branches and move in the wind, reaching out as far as possible to tag “rain drops.”

Group two – you are the rain drops making your way down through the trees in the watershed. If you get tagged, you have to walk around the tree 3 times saying “slow it down, soak it in.” Remember raindrops, you cannot go out of bounds! Demonstrate by having a tree tag you and circle tree.

Practice saying this, because that is what trees do with rainwater; they slow down the water and soak it in. Once you go around 3 times, you should flow down the river and into our bay. When the rain drops finish, ask the students if the raindrops moved quickly or slowly. *They moved slowly because there were a lot of trees in the watershed to tag them. The trees slowed down the water, and did something else. Has anyone seen a filter before? In a pool, in a Brita pitcher, in a fish tank, etc. What do those filters do to the water? They clean the water. Trees are natural filters, cleaning water as it passes through their roots.*

Have all students stand on the line as raindrops. Hand the pollution cards to students. Ask the students to listen carefully because the game has changed. *We are now going to think about the last 200 years. In that time, what have we, as humans, done to change the environment in the Chesapeake Bay Watershed? Cut down trees, paved roads, built homes, schools and other buildings, added pollution like erosion, fertilizer and pet waste. So now look at our watershed. Are there any trees? No. Is the area more impervious or pervious surfaces? Impervious. What do you see all over the land? Different types of pollution. Lets see what would happen if there was a lot of rain. You are all raindrops in a big thunderstorm. Rain picks up and carries pollutants, so as you run through the watershed, try to pick up the pollution cards.*

Were you able to move fast or slow on your way to the Bay? Fast. How does the water of the Bay look? Polluted, most or all of the raindrops picked up a pollutant. Collect the pollution cards and have students return to the top of the watershed.

Tell students that during their next 2 activities they should think about how we might correct this problem so not as much pollution is carried into the Bay by runoff.

Debrief for Land's Wonders and Worries

Location: outside resource lab

Materials: discs blue=water; colored=land, pollution cards

Ask the students to think about the last round of our intro game. *In the last 200 years, what have we, as humans, done to change the environment in the Chesapeake Bay Watershed? Cut down trees, paved roads, built homes, schools and other buildings, added pollution like erosion, fertilizer and pet waste.*

As raindrops, were you able to move fast or slow on your way to the Bay? Fast. How does the water of the Bay look? Polluted, most or all of the raindrops picked up a pollutant. Collect the pollution cards and have students return to the top of the watershed.

What are some ways you learned how to control the flow of stormwater in the Pollution Solution and Thrive to Survive activities? Plant new trees and native plants, plant a rain garden, use rain barrels, use sandstone rocks, and create a bog.

Choose a little less than half of the students at random to be pervious surfaces. These students should pick a spot in the watershed and act like the trees in the first game: stationary feet and moving arms so they can still tag “raindrops.” Pass out pollution cards to the remaining students. Tell the “raindrops” they must circle the “native plants” if they are tagged, saying “slow it down, soak it in.” They must also drop their pollution card by the feet of the person who tagged them and then continue on to the Bay.

Play the game. Once all raindrops have reached the Bay, ask them to hold up a pollution card if they still have one. *Does the Bay look better or worse after we put in pervious surfaces? Better! But some pollution still made it to the bay which means there is still more we can do to help.* Ask the students for ways we can put less pollutants into the environment.

- Pick up pet waste
- Control erosion by planting trees and other plants
- Don’t use fertilizer on the yard
- Buy organic pesticide free produce.

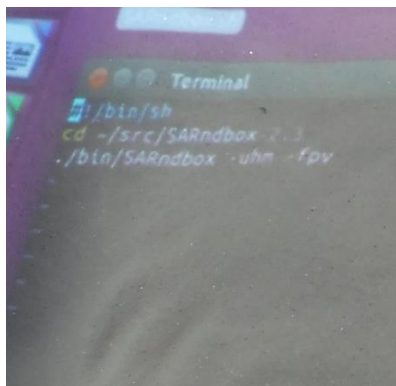
Collect the pollution cards and send students to their next location.

Supplement D: AR Sandbox Set up

1. Turn on computer and projector
2. Login
Username: arlington
Password: echo
3. Open the two desktop shortcuts :SARndbox.sh and Terminal



4. Copy the two lines of text and paste into the terminal one line at a time.
5. The first line starts with **cd** and the second line starts with **./bin**



6. Once the display appears, the colors will change as you move the sand into mountains or valleys.
7. To make a rainstorm, hold your hand over the sand and spread your fingers wide.
8. You can also use the keyboard to make a rainstorm by pressing 1. To remove all the water on the display, press 2 on the keyboard.

