

## **WATER WONDERS**

This show is an amalgam of Billy's other shows. It draws on the many water related songs and routines Billy does in his shows " **Romp in the Swamp** ", " **The Ways of the Bay** ", " **Recyclemania** ", and " **Biodiversity** ". It is preferable for Billy to talk with the school representative to find out what approach the school is taking with it's water education ( salt water oceans and their ecosystems, river and stream ecosystems, conservation, water quality and how it is effected by human behavior, etc. ) so he can then taylor his show to that schools particular curriculum

### **What are your learning goals for the students?**

I want them to understand that they themselves are made mostly of water, salt water, and that they live on the " Salt Water Planet ", and that every plant and animal is also made mostly of water. I want them to understand that they, and all living things, are part of the water cycle and what the water cycle is. I also want them to understand how plants and photosynthesis, working with evaporation and the physical properties of the water molecule ( this part is for the upper elementary ), allow us to inhale the oxygen that comes from water , H<sub>2</sub>O. And finally I want them to understand the importance of some of the watery ecosystems, wetlands, rivers, coral reefs., etc

### **What background information would you like to provide the teacher and students about your program before they meet with you?**

70% of the Earth is covered in Salt Water.

3% percent of the Earth's water is fresh water. All the water in the air is "freshwater" or some people call it " sweet water ". This is because salt does not evaporate. Therefore all the rain and the rivers are freshwater.

Much of sea life depends on estuaries or coral reefs.

Estuaries are shallow areas of water that are filled with underwater grasses.

All the water from the streets that flows into the sewer or rain ditch flows from there to the closet creek or river.

The more pollution free the water is the more life it supports.

Human trash is dangerous for water based wildlife.

### **What new vocabulary words do you plan to introduce to the students?**

- Primary Elementary -

Water Cycle, H<sub>2</sub>O, evaporation, condensation, precipitation, runoff, erosion, absorb, larva, pupa, food chain

- Upper Elementary ( all the above plus..... ) -

Photosynthesis, cohesion, biological, biological indicator, decomposition, habitat, ecosystem

### **What activities could the teacher do with the children before you arrive?**

- Primary Elementary -

In front of the class, pour a class of water, then drink from it, then pour some salt into the water ( 12 ounce glass, one tablespoon of salt ) . Stir it up and then ask the students " Should I drink this water ? " . Listen to their response and then explain that if you do drink the water it eventually will just make you thirstier because that's how the salt will effect your body. Then notice the salt that has settled to the bottom . Explain that the fresh water can only mix with a certain amount of salt, the rest of the salt will sink to the bottom. Then show a map , or use a globe , of the world and point out that most of the world

is covered with salt water.

- Upper Elementary -

The above activity is helpful, also...

Fill two gallon jugs full of water. Have a volunteer come up to the front of the class, squat while grabbing a gallon in each hand ( extending the arms out makes it more challenging ) then and lifting the gallons while standing up continuing to lift the water as high as they can. If they say it's easy have them do it five times. Explain that at this moment untold billions of gallons of water are moving up through the plants of the world. Point out there is no pump in a plant ( unlike our heart ) . As just demonstrated, water is heavy ( approximately 8 pounds a gallon ) . The tallest trees are in California, the Coastal Redwoods, a few of which are over 350 feet. How can water ascend to that height without a pump ? Billy B will answer this during his show. ( the answer is evaporation combined with the water molecules propensity for a quality called cohesion )

**Songs Billy could present and sing during the show ( the lyrics of which are available for downloading from his website , [www.billybproductions.com](http://www.billybproductions.com) )**

Water cycle  
Photosynthesis  
Coral reef  
Estuary  
Wild wetlands  
Flies in Black  
That's Runoff Man  
Romp in the Swamp  
Do the Dragonfly  
The Coral Reef  
The Alligator  
Water Planet

**What books, reading materials or dvds do you recommend in addition to the links on your website?**

**Billy B CDs**

Ways of the Bay  
Biodiversity and Billy B  
Energy and Me  
Romp in the Swamp  
Nature in the City

**Billy B DVD**

Energy and Me ( water cycle dance is presented as well as dance instructions for the students )

**Books**

For Primary Elementary  
Water ( Early Childhood Educational Series ) by Frost  
For Upper Elementary  
The Way Life Works - by Mahlon Hoagland - Bert Dodson  
Water, An Environmental Quiz Deck - Sierra Club