



Dear Teachers and Administrators,

As you know WaterVentures, Florida's Learning Lab is coming to your school. We are looking forward to our visit and will do everything we can to make it an amazing educational experience for you and your students.





Aquifer Cave

As guests enter WaterVentures they will be immersed into a sculpted cross section of the Floridan Aquifer.

General inquiry questions:

1. How are the layers similar/different?
2. How can pollution in one place effect the whole aquifer?
3. How can humans impact (positive or negative) the aquifer?

This learning station's Big Ideas:

This is a model. Scientists use models to help them study large formations like the aquifer. This is a 3D model. Other aquifer models allow water to flow through them. SC.3.N.3.3, SC.3.N.3.2, SC.4.N.3.1

Water is a precious natural resource. The aquifer is tasked with filtering, cleaning, and recycling water. The Floridan aquifer is the source of most fresh water in Northern and Central Florida. SC.4.E.6.6

The aquifer depends on open green spaces. The water that recharges the aquifer seeps into the ground in fields, sand hill habitat, and other upland spaces. As more people move to Florida and build houses and parking lots, they cover up these recharge areas. This will have a negative impact on the aquifer. SS.4.C.2.1

The Aquifer has layers, as described on the learning station.

Humans get water out of the aquifer through wells. Nature gets water out of aquifers through springs, geysers and natural artesian wells.

Limestone is made from the shells and bones of dead animals that have been compressed over thousands of years. It is slightly basic so slightly acidic rainwater that has dissolved CO₂ in it will slowly dissolve the limestone. This slow dissolving is what causes springs to form.

The roots hanging from the ceiling of aquifer caves also help clean the water.



Every drop counts

Another learning station just beyond H2O on the Go is Every Drop Counts. This quiz based learning station will challenge visitors to make choices about water conservation.

General inquiry questions:

1. What are other ways that you can conserve water in and around your home? School? Business?
2. Where around your house do you have similar handles? How can you save water in those places?
3. How can you encourage others to conserve water?
4. Why does “every drop count”?

This learning station’s Big Ideas:

Every living thing on the planet uses water in one way or another. The use of water impacts the environment that that organism lives in. It may be argued that humans have the biggest impact on their environment, but humans maybe the only organisms that can choose how much they impact their environment. SC.4.L.17.4

Water is a non-renewable resource. The planet will never have ‘new’ water. The water we have now can be recycled and clean through the water cycle. SC.4.E.6.3

Based on your answers to the questions at this learning station, what can you say about your personal water use? What can you do to reduce the amount of water you use? SC.3.N.1.6

Drought is a word that is often heard on the news in Florida. Conserving water is a way of life for our residents. SS.4.C.2.1



H2O On The Go!

This is an interactive learning station is where guests will be challenged to match the vocabulary of the water cycle with an image.

General inquiry questions

1. How can humans influence the water cycle?
2. How would a bumblebee affect the water cycle?
3. Why is it called the water “cycle”?
4. Why is the sun always pictured with the water cycle?
Can the water cycle ever stop?
5. Is the water cycle different in different places on the Earth?

This learning station’s Big Ideas:

Radiant heat energy from the Sun is the driving force behind the water cycle. SC.3.E.6.1

Water can be found in all 3 states in the water cycle. It changes from liquid to gas during evaporation, gas to liquid during condensation. SC.3.P.9.1

Although this picture is specific to Florida, you can infer that the water cycle works the same way all over the world. You can also infer that the plants and water ways shown are not the only ones involved in the water cycle. SC.3.N.1.6

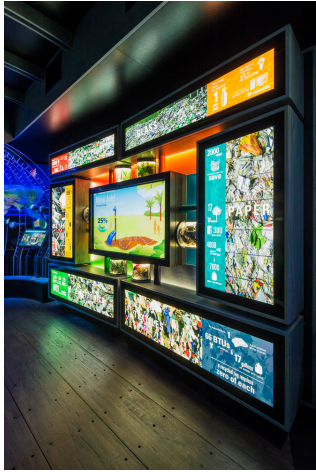
This is a computer model of the water cycle. It allows for easy explanation of all the processes involved in the water cycle. SC.3.N.3.3, SC.3.N.3.2, SC.4.N.3.1

Plants use the energy of the sun to make food. During that process, the plant transpires (breathes). During transpiration, some water escapes to the atmosphere. SC.3.L.17.2

Once water vapor condenses into clouds, it’s not over. Wind will push those clouds to other locations. So water that evaporates from one location will most likely fall as rain in a completely different place. SC.4.P.10.4, SC.5.P.10.2

The physical change of water from state to state depends on the amount of radiant energy from the sun, or heat. SC.5.P.9.1, SC.5.P.10.2

Although only a small piece is pictured here, the ocean is a huge part of the water cycle. About 97% of the water on Earth is contained in the Ocean’s so it is little wonder that it plays such a big role in the water cycle. SC.5.E.7.2



Pitch In – Help Close the Loop

This learning station will ask visitors to sort their recyclable items into the proper bin, then see what those recycled products can become.

General inquiry questions:

1. Why is this learning station called 'Closing the Loop'?
2. How can you recycle food scraps?
3. If humans recycled everything they could, every day, what impact would that have on the Earth?
4. How can you increase recycling at your home? School? Business?
5. If an item can't be recycled at the curb or drop off spot, how can you keep it out of a landfill?

This learning station's Big Ideas:

The color and shape of an object is not an indicator as to whether or not it can be recycled. When sorting your recyclables, first sort by material (plastic, metal, paper, etc.), then by type (aluminum, steel, tin etc.). For plastics sort by the number on the bottom, some plastics need to be recycled in special places.

SC.3.P.8.3

Based on what you achieved in this game, what do you think (infer) about the name of the game 'closing the loop'? (Recycling is only effective if we use/buy the products made from the recycled material. Buy, Recycle, Buy is the loop.) What other products could be made from these recycled materials? SC.3.N.1.6

Florida doesn't have many resources that can be recycled. But we do have resources that can help power recycling industries like solar, wind, and hydroelectric energy. SC.4.E.6.6

A renewable resource is one that we can get more of, like paper. To get more paper we can plant more trees. It is still important to recycle renewable resources to reduce the amount of waste in landfills. Non-renewable resources are one that we cannot get more of like aluminum. Aluminum is made from bauxite; once all the bauxite is mined from the earth there will no way to get more. Recycling products made from non-renewable resources is the only way we can 'get more' of that material. SC.4.E.6.3

Any living organism impacts its environment, humans more than any other organism. Recycling is one way we can reduce our impact on the environment. The more we recycle the less waste that goes into landfills. SC.4.L.17.4

Recycling is not something you should do once in a while; it should be a way of life. Florida being a peninsula, our trash is more likely to wash into the oceans or seep into our ground water. The best way to reduce the amount of trash we create is to recycle. SS.4.C.2.1



The Globe

This learning station will allow guests to move from the Florida water story to the World water story. It should help make the connection that our water is shared worldwide. Also, it should help the guest to leave with a positive outlook about what people around the world are doing to help protect the world's water.

General inquiry questions:

1. How does water on another part of the planet affect you?
2. How can you take what you have learned today and make a change in the world?
3. What is the most important lesson you will take away with you today?
4. Is water more important in one part of the world than another? Why?

This learning station's Big Ideas:

As you have/will see inside, fresh water springs and rivers play a big role in the water cycle. Most people over look an even bigger part of the water cycle, the ocean. As you can see most fresh water drains in to the ocean or gulf, and 97% of the water on Earth is in the ocean so it is clearly a part of the water cycle.
SC.5.E.7.2



The Diorama

This learning station will take visitors on a “choose your own” water drop adventure. Guests will follow a water drop through spring, river, and coastal habitats as the drop moves through the water cycle.

Guests should leave this learning station with an understanding that water unites all habitats.

General inquiry questions:

1. Water doesn't have to flow only through these 3 habitats. What other ways can water flow?
2. Which habitat is the most important for water quality?
3. Where in your water adventure would your water drop spend the most time? Why?
4. What would be the “best” path for a water drop to take through the water cycle?

This learning station's Big Ideas:

In our mural you only see a little of ocean, but it is a huge part of the water cycle. SC.5.E.7.2

You can see three distinct Florida habitats in this mural. They are all wetland habitats, but they are very different. The amount of water, the types of plants, and the proximity to the coast make the temperature and humidity in each habitat different. SC.5.E.7.5

Energy from the sun powers the water cycle. As the sun heats the air and the water, they move. Air becomes wind, and water will change state and move through the water cycle. Water in rivers can move sediment, oceans can move sand, and air can distribute O₂ and CO₂. SC.4.L.17.4

Florida's wetlands are full of resources. Saw palmetto berry is harvested and sold as a vitamin supplement. Cypress trees have been harvested from wetland since the first settlers came to Florida. Animals that live in the wetlands have been hunted for their skin like alligators and otters. Birds were hunted for their feathers. But the main resource that wetlands provide is water. Spring water is the cleanest water you can find. It is bottled and sold. It is used recreationally for boating, swimming, scuba diving, snorkeling, etc. SC.4.E.6.6

This mural is a model of different Florida wetland habitats. We use a model because it would be impossible to bring these different habitats to your school. This mural is both 2D and 3D. SC.4.N.3.1

After exploring the mural and interacting with the water drop adventure, what can you infer about the water cycle? Is it more than evaporating, condensing and precipitating? How important are Florida wetlands in terms of water? Habitat? SC.3.N.1.6

No matter which wetland habitat you are talking about, they all have plants in them. The plants are adapted for the habitat it lives in. Cypress trees and mangroves are great examples of specialized root systems that allow them to grow in their respective habitat. Eel grass and tape grass grow under the water. They do not have ridged stalk or stem structures because they don't need to hold themselves up. The adaptations and specialized structures are endless. SC.3.L.14



Exterior Educational Experience:

Awesome Aquifers

This station is a contoured table where an AquaVentures Educator will lead students through building a watershed.

General inquiry questions:

1. Where does water flow in your neighborhood/city? Where does it collect?
2. What can you change in this model to reduce the impact of humans on the water?
3. What changes can you make in real life to reduce the impact that humans have on the water?
4. Does every watershed have a river running through it?
5. What do all watersheds have in common?

This learning station's Big Ideas:

What would you infer about Florida's coast if sea levels rise? SC.3.N.1.6

Based on what we just did, how can you apply it to your neighborhood/city? SC.3.N.1.6

This can raise some questions that you can investigate after today. Do watershed work the same way all over the planet? Are there habitats that make a watershed better for water? What is something that humans can do to support their watershed? SC.3.N.1.1

This is a model of a wetland. We use a model because we can learn more by seeing how all of these places interact with each other and how they can all influence the river. Scientist will use more accurate models to determine who is creating the most pollution. SC.3.N.3.3, SC.3.N.3.2

This activity can be viewed as a science experiment; we are testing if the placement of human development has an impact on a wetland system. Real science doesn't have to follow the scientific method. SC.4.N.1.3

Water is precious resource all over the world, including here in Florida. SC.4.E.6.6

How would our watershed be different if we had snow in Florida? SC.5.P.8.1

You do not need to follow the scientific method to make observations and draw conclusions from this model. Good science doesn't have to follow a strict method. SC.4.N.1.4, SC.5.E.7.2



Wonders of the Water Molecule

This will be a 4-station table. Each station will have an experiment that students perform that will focus on water. There will be rotating experiments so AquaVentures Educators can choose which to use each day.

General inquiry questions:

These will vary by experiment

This learning station's Big Ideas:

Will vary by experiment

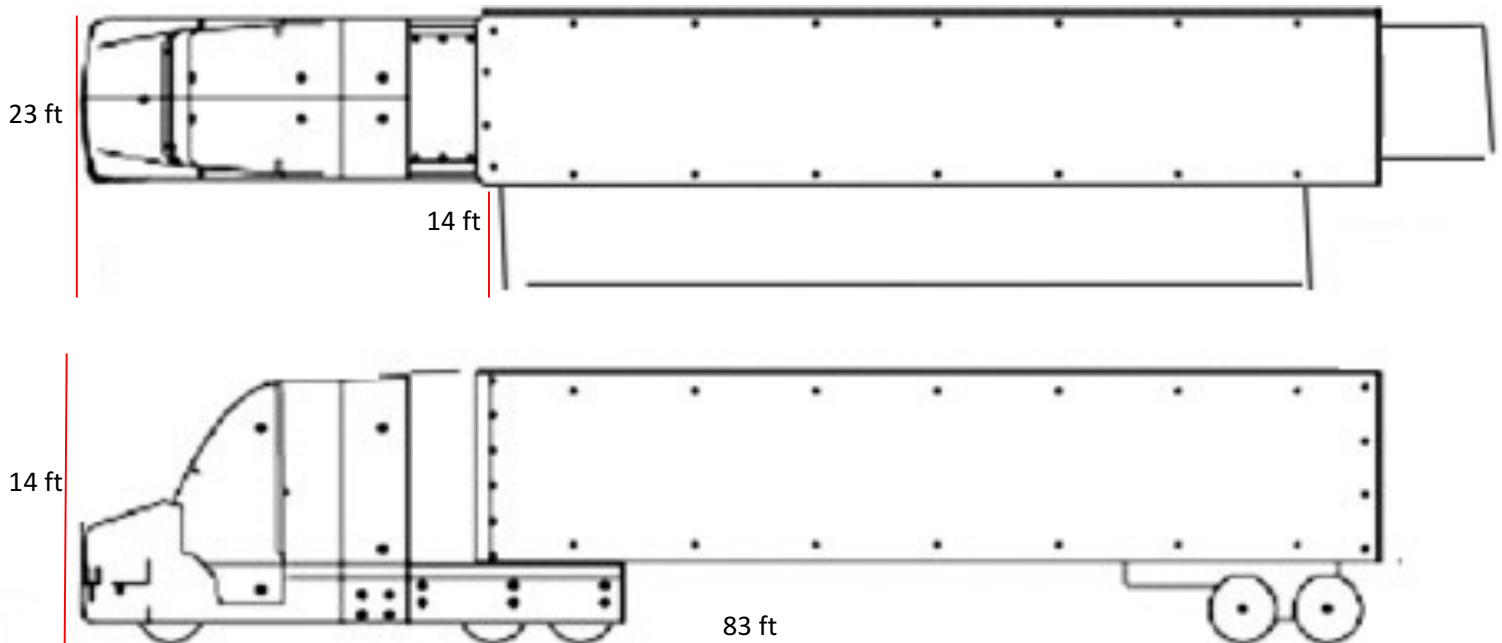
WaterVentures Outreach Vehicle Dimensions

The WaterVentures Outreach Truck is a full size tractor trailer rig. To ensure the safety of your students and our staff, please check for sufficient clearance in the area you plan to have our vehicle park. This includes building overhangs, turning radius, low hanging branches and other obstructions.

The dimensions when set up are as follows:

- Tractor, trailer and rear stairs are 83 feet long (trailer and stairs are 65 feet)
- Tractor and trailer are 14 ft. tall
- Trailer and side awning are 23 ft. wide
- Trailer alone is 9 ft. wide

Our staff can work with you to find a sufficient location on your campus.



Weight (with 1/2 tank of gas) – 54,640 pounds

Electricity – 50 AMP, 220/110 Volt (4 prong plug) or Generator