



# Let's Talk



about...



**Water is Remarkable!** Water is one of the most amazing substances on our planet.

Did you know that every single living thing needs water? It is in each cell in our bodies and in the bodies of all plants, animals and other creatures.

Water can be polluted easily because so many different substances will dissolve in it. Can you think of any things that seem to disappear when you mix them with water?

Water is special because it can mix with many different liquids and solids. Its ability to stay warm for a long time helps keep the temperature inside our bodies around 98° Fahrenheit. It also prevents the temperature in

oceans, lakes and rivers from changing very quickly.

**Where Does Our Drinking Water Come From?** Each of us uses water every day.

Have you ever thought about where the water you use comes from? Most of us get our water from faucets, but that is only the end of its journey.



About half of the drinking water used in the United States comes

from lakes and rivers. The other half comes from springs and wells that reach water reserves located deep underground. Most water has to be treated to make it safe to drink. Chlorine, for example, is added to water to kill germs that can make us sick.

**Each One of Us Can Do Something.**

Sometimes, without knowing, we do things that harm our water supplies. If we use too much fertilizer or pesticide on lawns, gardens or fields, some of it can end up being washed into rivers and lakes.



Once there, it can hurt fish and other animals. It also can make water unsafe for us to drink. Harmful chemicals can soak deep into the ground and pollute the water reserves there. Things like old paint or motor oil can be harmful if you dump them down the drain or pour them onto the ground. These chemicals end up back in our water supplies.

In an emergency, you can make most water safe to drink by boiling it for at least 10 minutes in a shallow pan.

**The solid form of water, known as ice, floats.**

Have you ever thought about what would happen to fish and water plants if ice formed on the bottom of lakes and streams, instead of floating on the top?





# Water and Health



**Why is Clean Water Important?** Water has many uses. We need drinking water to stay healthy. Farms need water to produce crops and livestock, which we also need to live. Factories require water to make many products. Water is used in power plants that make electricity. Since we all use water in so many ways, we should remember to take care of our water sources.



## Falling Water

Drops on dogs,  
On frogs and logs.  
Drip-Drip-Drip,  
They turn and flip.

They roll and patter,  
Slip and splatter.

Drops on dogs  
And frogs and logs.

Drip-Drip-Drip,  
They turn and flip.  
Drops on noses,  
Heads and toeses.

Drops on dogs,  
On frogs and logs,  
And even on  
The polywogs.

Rain is coming  
Down on me,  
And all the world  
That I can see!



## Tips for Healthy Living

You can help save water and keep our water supplies clean!

- Use very little chemical fertilizer in your yard or garden—or even better, learn to build a compost pile and make your own fertilizer.
- Don't waste water. Take short showers and don't leave the water running while you brush your teeth or wash your hands.
- Take used motor oil to a gas station for recycling.
- Repair water leaks and dripping faucets.
- Recycle paper, plastics, aluminum and glass products. Reusing these materials helps save water and reduce water pollution.
- Plant grass and other plants on hills to prevent erosion and help water sink into the soil.

If you think your water is polluted, call your city, county or state health department. For additional information, call the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.



# The Great Dissolver

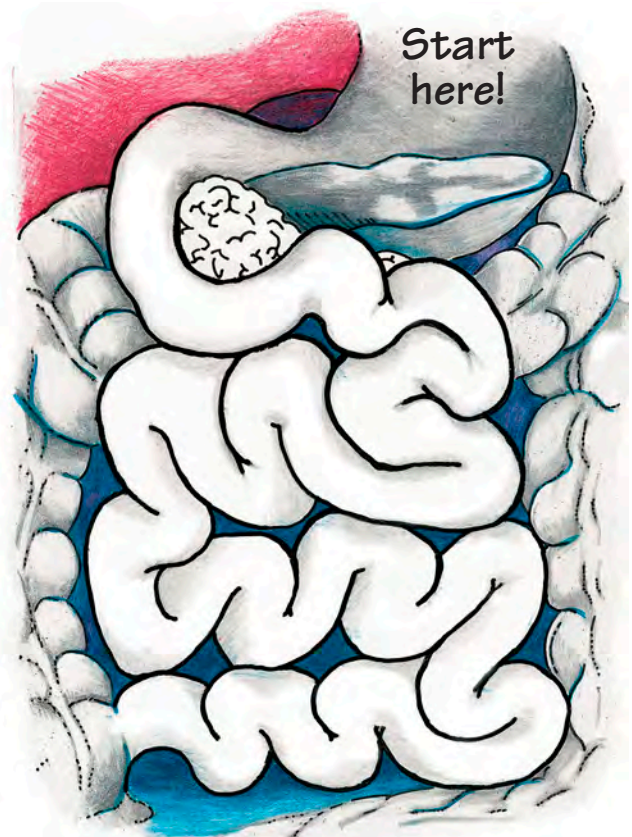
**W**ater makes up 67% of the human body. It is the largest part of all living material. Water is needed to break down and move food in whole organisms and in each tiny cell. Most substances needed inside the body are carried in water. Let's see how water helps things move throughout the body . . . .

## Try this!

1. Fold a round, pleated coffee filter in half. Open it up and sprinkle about a teaspoon of soft drink mix along the fold, stopping 5 cm from the edge of the paper on each side.
2. Fold the filter in half once again. Roll it to form a tube with the soft drink mix inside.
3. Make a circle with the tube. Clip the ends of the tube together.
4. Place the paper circle in an empty glass and observe. What happened?
5. Now place the paper circle in a half cup of water and observe. What happened?



Most food is absorbed into the body through the small intestine, which is about 23 feet long. Can you find the path through this small intestine?



## Try it with something else!

Place several dried beans in another paper filter tube. Without water, what happens? Place the tube of beans in a half cup of water. What do you predict will happen?

Most water is absorbed into the body through the large intestine. Trace this shape on a piece of blank paper. Fold the paper in half along the straight edge (dotted line below). Cut out the shape. Then cut out nine more and tape all the pieces together. Look how long your large intestine really is!

Fold paper and align the fold with a straight edge before cutting.





# WHAT AM I?

## Solve this double puzzle!

1. Read the riddle on the left and fill in the answer in the box beneath the riddle.
2. Then, match each line of the riddle to a word from the list on the right. Draw a line to the word that best matches each phrase. The first one has been done for you.

I run down hill and turn around.

I bubble up from underground.

I fall through air as rain or snow,

Then disappear in warm sun's glow.

I'm home for birds and plants and fish.

I rise above a boiling dish.

I wave and crash upon the shore.

I move the riverbank, and more.

I hang in air close to the seas,

And I get bigger when I freeze.

*You'll find me in each living cell.*

*I must be clean, so you'll stay well!*

steam

ice

river

fog

precipitation

marsh

evaporation

spring

erosion

ocean

WHAT AM I?



## Not Such A New Issue . . .

In 1855, Dr. John Snow, an Englishman, figured out that water can carry germs that make people sick. Eventually, people learned that sewage and waste waters had to be cleaned before they could be put back into rivers and lakes.

Cities always have needed a lot of water. About 2,000 years ago, the Romans solved this problem by building a system of large pipes, called aqueducts. The aqueducts



carried water underground and over valleys into the city of Rome.

Vetruvius, a builder in ancient Rome, thought that pipes and dishes made out of lead could make water unsafe to drink. He was right!



# We Can Make A Difference!



We are students from Anson Jones Elementary School and Robert Louis Stevenson Elementary School in

Houston, Texas. We are learning about ways to keep our water supplies clean and to save water. We all need clean water to stay healthy.



At Anson Jones Elementary, we are learning to save water in our garden. We used native plants that don't need to be watered every day.

We also made our own fertilizer by composting.

Here, we are turning leaves in our compost bin. When the leaves rot, they will make a rich fertilizer that we can put on our garden. Adding compost helps the soil hold more water.



At Stevenson Elementary, we are testing a sample of water for dissolved oxygen. The plants and animals in water need oxygen to survive. Polluted water sometimes doesn't



have enough oxygen.



We work with the Texas Stream Team. We take samples of water from nearby rivers and test it for oxygen and some kinds of pollution. We also measure the temperature of the water.



The Texas Stream Team gives kids a chance to learn about water pollution and to help do something about it. Anyone who wants to learn more about Texas resources can visit <http://txstreamteam.rivers.txstate.edu>. Most states have programs like Texas Stream Team. You can find out what's happening in your part of the country by visiting the Environmental Protection Agency's website at <http://www.epa.gov>.



## Rosie and Riff talk to...

# Ms. Linda Holman Microbiologist

### *What do you do at your job?*

I test water from lakes and streams to see whether it is clean and safe for people to use. Sometimes I also test the water in bottles from the store and in vending machines, or in the wells and pipes that bring water into homes and other buildings. I look for tiny germs that might make people sick. I'm a microbiologist in the City of Houston public health laboratory.



### *How did you decide to do this kind of work?*

At first, I wanted to be a veterinarian. When I began studying, I found that I really liked lab work. As I finished college, I decided I wanted to work in a lab that helps to keep people and animals healthy.

### *Have you always been interested in science?*

Yes. I've always loved science, especially learning about animals and nature. Science is fun! It's like being a detective, because you figure out how and why things happen.

### *What do you like most about your work?*

My work helps make water safe for everyone to use. People depend on me to work carefully. I really enjoy doing that. I feel good about knowing I can do something well.

### *Is there anything else you would like to tell our readers?*

Science is exciting, but it's important to learn about all the other subjects in school, too. A good scientist needs to know about language, math and social studies as well as science. Another important thing to remember is to be patient. Don't give up, but just keep on trying until it works out.



A microbiologist is a scientist who studies very tiny living things—so tiny, in fact, that they only can be seen by using a microscope. "Micro-" comes from a Greek word that means very small. What other words do you know that start with "micro"?



# Water in Your Body!

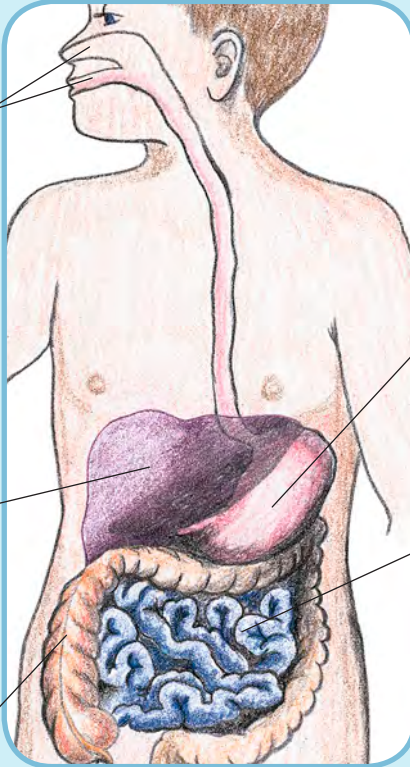


Look at all the ways your body uses water!

Water is in tears and perspiration. When you sweat, your body is losing water. Don't forget to drink water—especially when it's hot outside!



Most water comes into the body through the mouth. Water is in the saliva in your mouth. It mixes with food when you chew. Water vapor also goes in and out through the nose and mouth.



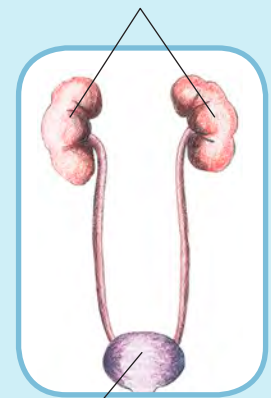
The liver manages most nutrients that come from the small intestine.

Food and water end up in the stomach—a powerful mixing machine.

From the stomach, mixed food and water go into the small intestine. Here, food is broken up into small molecules that can enter the bloodstream.

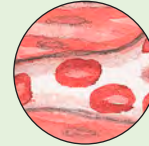
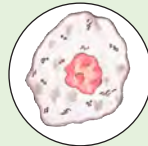
Water, minerals and some vitamins are taken up in the large intestine. Food that isn't digested collects here, too.

The kidneys manage water in the body and filter wastes out of the blood.



Wastes are mixed with water to form urine. Urine drains out of the kidneys and collects in the bladder until you get rid of it.

Water is in every tiny cell in your body. Even the spaces between cells contain water!



Your blood is mostly water, too!

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