

JUST FOR U.S.*

GRADES 4 - 6

* UNDERSTANDING SCIENCE

Fernbank Science Center • DeKalb County School System

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QUESTION:

When you are packing for a day of hiking, what is the most important item to take with you?



WATER BOTTLES



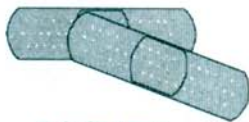
TOOTHBRUSH AND
TOOTH PASTE



MATCHES



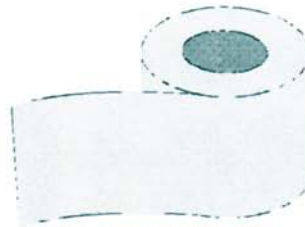
EXTRA PAIR
OF SHOES



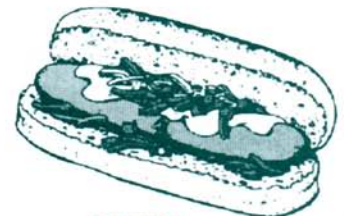
BANDAIDS



BUG SPRAY



TOILET PAPER



LUNCH

CLUES:

It makes up two thirds of your body.

It is the most common substance on earth.

You could not live a week without it.

DID YOU FIGURE OUT WHAT THE MOST IMPORTANT ITEM TO TAKE HIKING IS? TURN THE PAGE TO SEE IF YOU WERE RIGHT.

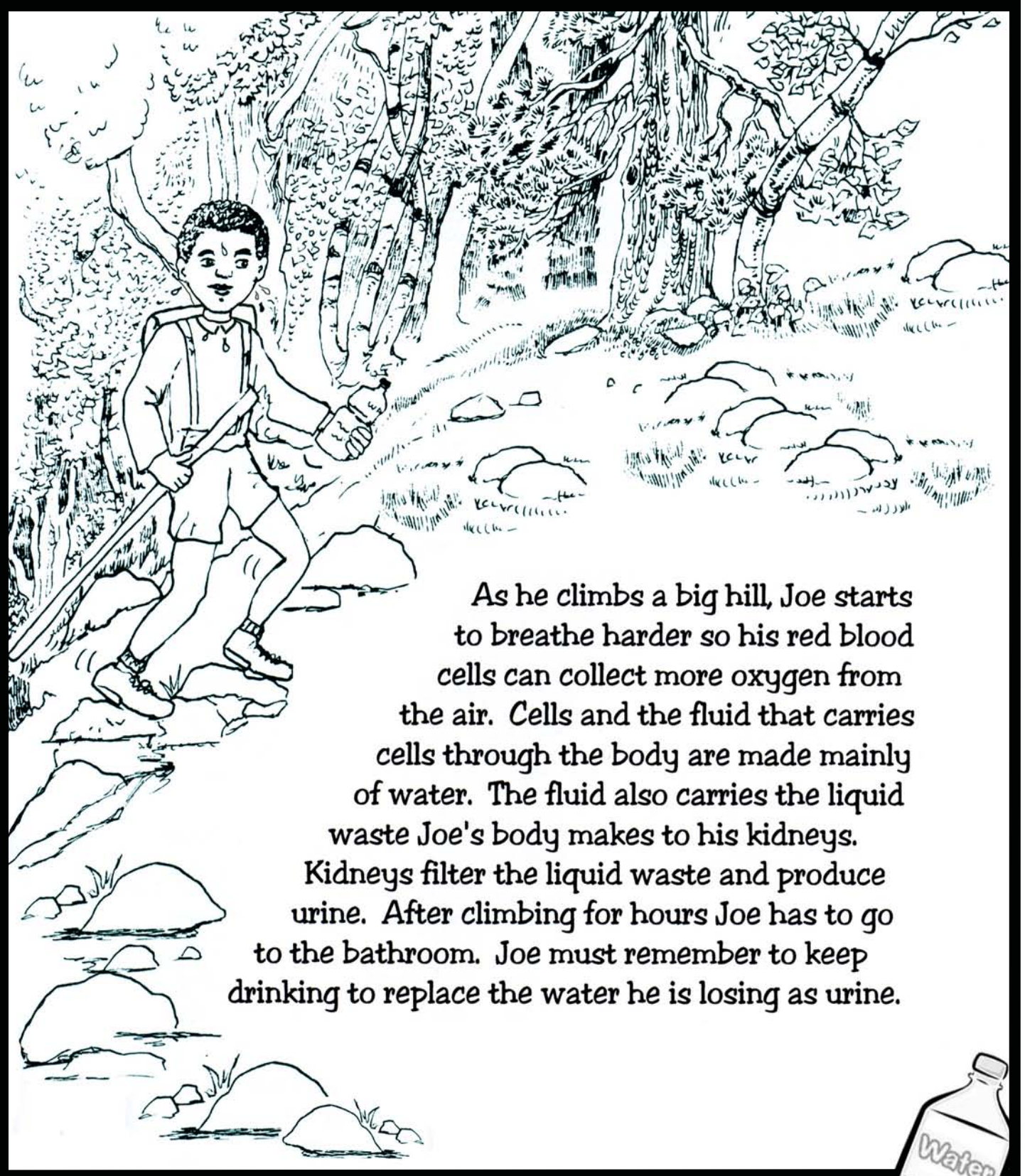
The most important item to take is **WATER!** Water is important because it has so many different jobs in your body. Let's follow Joe on a hike and learn more about water.

Joe is hiking to a beautiful mountain stream. It is a long way and getting there is hard work. Soon sweat glands in Joe's skin produce watery, salty sweat that coats his skin. When the sweat evaporates, his body cools down. Joe needs to take a drink to replace the water he is losing as sweat.



Body note: The best temperature for your body is 98.6 degrees Fahrenheit. Even when you are not exercising hard, you sweat tiny drops that are so small you do not notice them. This keeps your body the correct temperature.





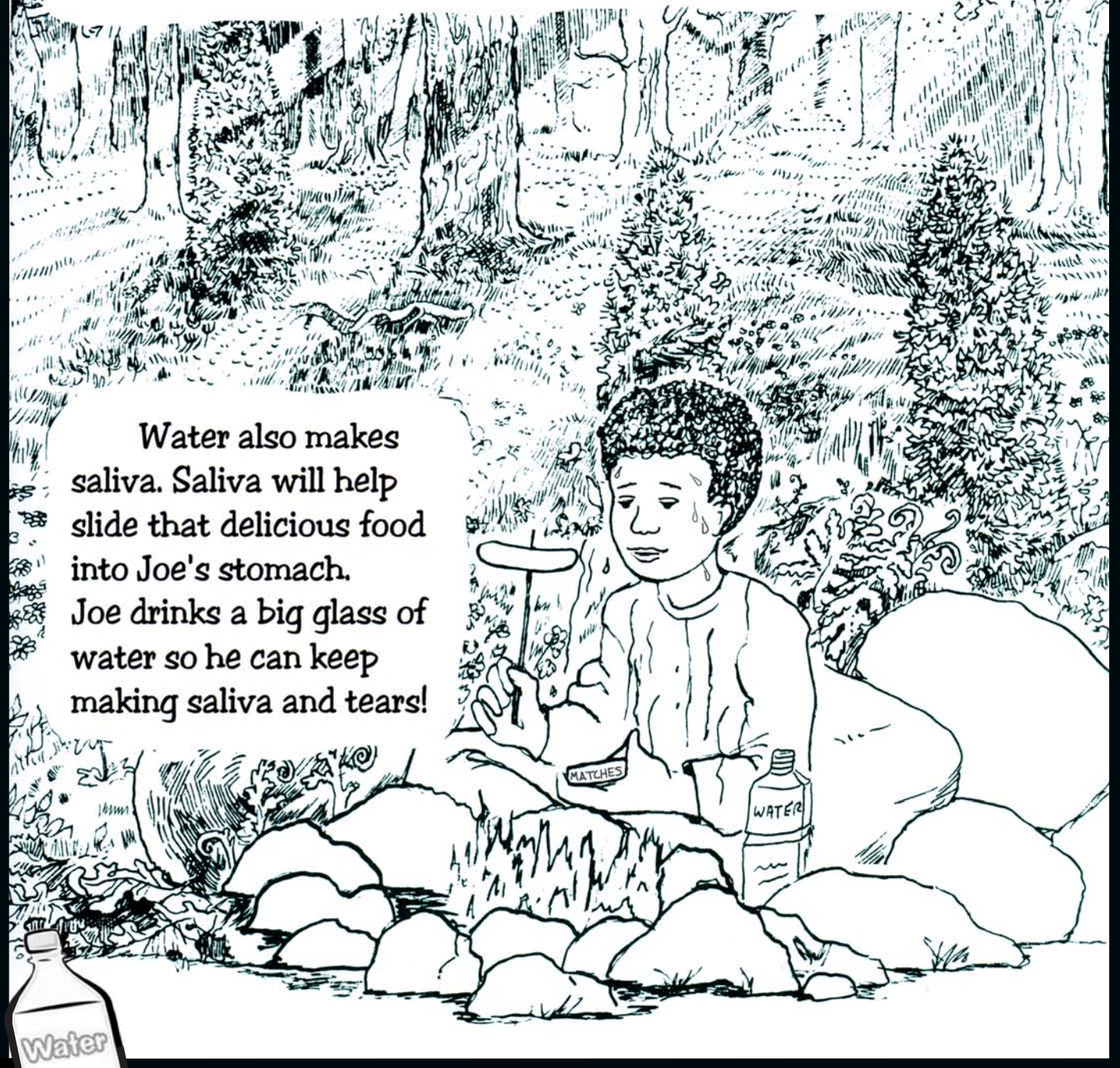
As he climbs a big hill, Joe starts to breathe harder so his red blood cells can collect more oxygen from the air. Cells and the fluid that carries cells through the body are made mainly of water. The fluid also carries the liquid waste Joe's body makes to his kidneys. Kidneys filter the liquid waste and produce urine. After climbing for hours Joe has to go to the bathroom. Joe must remember to keep drinking to replace the water he is losing as urine.



Body note: An easy way to know if you are drinking enough water is to look at your urine. The color of urine should be light yellow. If it is dark yellow, you need to drink more water!

Joe is hungry and decides to build a campfire for cooking his franks and beans. Yikes! That smoke is making his eyes water and his nose run. Water to the rescue again. Tears and mucus, made mostly of water, wash dust and germs out of Joe's eyes and nose.

Water also makes saliva. Saliva will help slide that delicious food into Joe's stomach. Joe drinks a big glass of water so he can keep making saliva and tears!

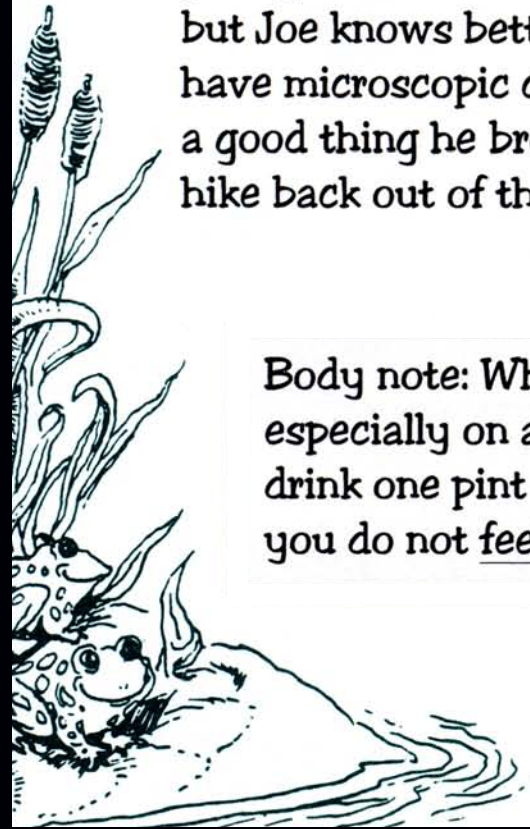


Body note: Look in a mirror at your eyes. Gently pull the bottom lids down. You should see a hole on the inside of each bottom eyelid. There is nothing wrong. Those are your tear ducts!



Aaah... at last a tired and thirsty Joe has made it to the pretty mountain stream. The water looks good enough to drink, but Joe knows better than to drink it. That clear water may have microscopic creatures in it that would make him sick. It is a good thing he brought along plenty of water to drink on his hike back out of the woods!

Body note: When doing strenuous exercise, especially on a hot day, it is a good idea to drink one pint of water every hour. Even if you do not feel thirsty, your body needs water.



IT ALL ADDS UP!

Joe does not replace the water his body loses just by drinking glasses of water. Water is also in what he eats and drinks. Can you figure out if Joe has had enough water today? First, add up the water Joe got from eating and drinking on the left. Then add up the water he lost through sweat, tears, urine and breathing on the right.

If the two numbers are equal, Joe had enough water today!

Ate franks and beans 1 $\frac{1}{4}$ cups water
Drank 2 glasses of lemonade from his thermos 1 $\frac{1}{2}$ cups water
Snacked on milk and cookies 1 cup water
Gulped down water from his water bottle 1 $\frac{1}{2}$ cups water
Ate an apple $\frac{3}{4}$ cups water



Hiked all day 1 $\frac{1}{2}$ cups sweat
Used the toilet several times 3 cups urine
Got lost for 10 minutes $\frac{1}{4}$ cup sweat
Smoke got in his eyes $\frac{1}{4}$ cup tears
Lost water vapor through breathing 1 cup vapor

Total water Joe added _____

Total water Joe lost _____

Just for U.S. is written by
Judy Cutchins and Rachel Fiore.
Artwork is by Judy Cutchins.

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