RUSH, RUMBLE, BOOM! Water will roar as a river or a waterfall. So long as it has a hill to fall down, water can get its power back and break rocks again. A **slope** is a surface that is not flat. Water moves down places that have any kind of slope. There are different kinds of slopes, from the almost flat to the very steep. If you ride down a hill on your bike and do not have to pedal, then it has a pretty steep slope. When water goes downhill, it is not as strong as a drop falling from high up in the air. However, water moving down a slope makes up for that because there is a lot of it. Actually, there is so much water in rivers that it can cut through rock like a knife through cake . . . over thousands of years that is.

With each punch, a water drop will knock off a very small bit of rock. Just a few specks at a time. Like a ninja, you cannot really see it at work. The water carries this little bit of rock with it as it trickles down, and leaves the bit of rock on the ground, or on the bottom of a river, or in the ocean as dirt or sand. **Topsoil** is the dirt you find on the very top of the Earth. A lake will mix the dirt on the bottom by moving back and forth, little by little. A roaring river will carry rocks and sand from one part of the Earth to another, moving it hundreds or thousands of miles. In nature, most of the rocks you see look the way they do because of water. These are the remains of water's rock victims.

So the next time you hear someone describe a ninja as silent as a mouse and as powerful as a dragon, tell them you know something stronger. Water has shaped the Earth around us. It chops through rocks and spreads their pieces across the planet. And it does it by using the Earth's laws and only moving a very little bit at a time. The shape of our Earth is all thanks to water's punching power.

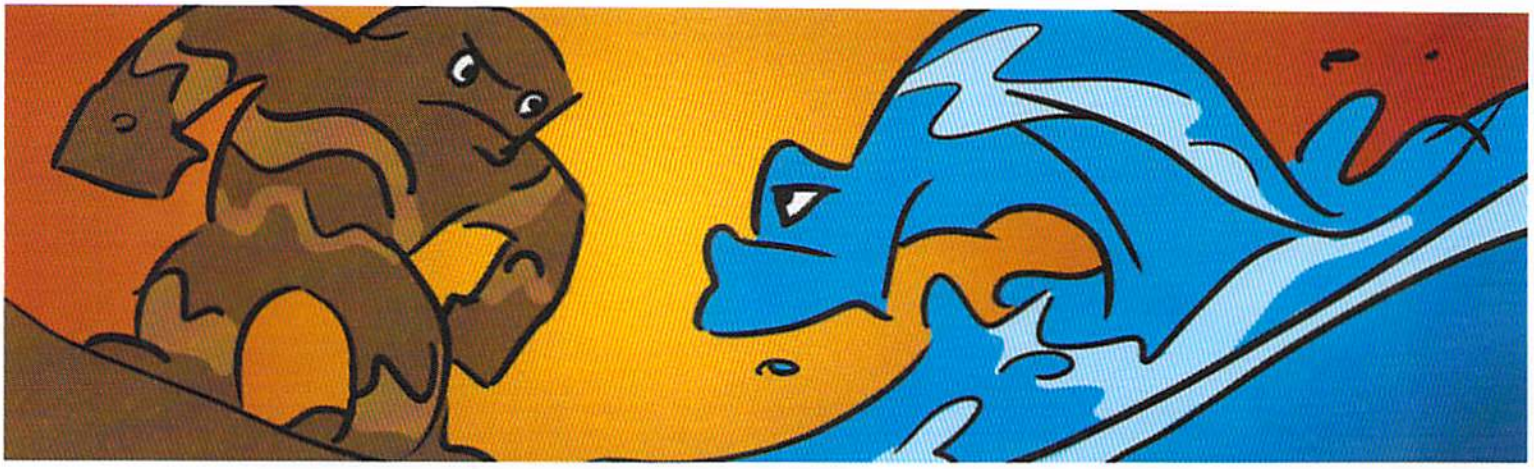
Reference:

USGS. "Surface Runoff - The Water Cycle." USGS.gov, 2013.
<http://ga.water.usgs.gov/edu/watercyclerunoff.html>

Name_____

Period_____

Date_____



Water vs Dirt

rainfall, surface water, slope, topsoil

Erosion and Weathering Unit

Have you ever tried to break a rock? It's not easy! You can drop it on the ground. You can smash it against another rock. You can even try hitting it with a hammer. Rocks are tough. So why then do we have the Grand Canyon, a giant hole carved right through rock? How do we have boulders bigger than your school, broken right in two? What can break and shape rocks so perfectly? It's time to meet the ninja of nature: water.

Water does not have a hammer. It does not have a bomb. So how does it come up with enough power to break rocks? Like ninjas, water waits. It stays in the ocean until the sun warms it. Then it lifts up into the air higher and higher until . . . **Rainfall** is when water gathers around dust in the sky, makes clouds, and then falls in drops back to Earth. Each drop falls thousands of feet and then hits, plop, like a small punch. That might not seem like it would do very much to a rock. But you know rain. And ninjas. They do not hit just once.

Plop Plop Plop Plop Plop
Plop
Plop Plop Plop
Plop Plop Plop Plop Plop
Plop

Like ninja fists from the sky.

Once they fall, water drops find each other, like ninjas going back to hide. They gather in pools or lakes. **Surface water** is any water we find on the top of the Earth. There it will stay for a very long time. And when you splash through it, it will not seem like it could hurt anything at all. It's like a ninja hiding out, waiting to be pulled back up by the sun or . . .