Kids Pages

What's a Water Gap?

Delaware Water Gap National Recreation Area Pennsylvania & New Jersey

The spectacular Delaware Water Gap has inspired and fascinated people for centuries! It's nearly a quarter mile (about 4 short city blocks) wide at river level where you drive by, and nearly a mile wide from the top of one mountain to the top of th other -- a magnificent sight to see! The story of this unusual pass through the mountain is a very old one. It goes back 420 million years, which seems like a lot of years to you, but which is not a lot of years to a *geologist*, a person who studies how the earth came to look the way it does.

Did the Delaware River cut the gap?

Not exactly. Water did not cut the gap, but the movement of the water provided much of

the energy to do the work. Water was like a guiding hand, using sand and rock particles of many sizes to cut away at the Gap.

You probably know that you are on a very large piece of land, known as a *continent*, called North America -- a continent with the three countries of Canada, the United States, and Mexico -- and lots of ocean on both sides. But geologists believe that the continents were not always in the places that they are now. They believe that very, very long ago, the continents of Africa and North America shifted and even crashed into each other. Where they crashed together, lines of mountains were shoved upward.

Think of putting two pieces of bread and jelly on the "sea" of your kitchen table. Now push the slices up against each other -- more, more MORE! The jelly that pops up is the like the mountains rising out of the land when two pieces of land got squashed together. Maybe the edge of one piece of bread even "climbed" on top of the other -- more stuff popping up.

The 2,000 mile *Appalachian Mountains* that run from New England to the South of the United States were formed like this, and the *Kittatinny Ridge* which you see at the Delaware Water Gap is just one ridge -- just one long bump of jelly -- in mountains that formed like this.

After the mountains were formed, streams and rain flowing off these mountains washed sand and pebbles in flat layers at the sides and bottom of the mountains. As the layers on top got heavier and heavier, layers on the bottom got pressed down on each other to form solid layers of very hard rock that didn't wash away or *erode* easily. one big whoosh of water. It took many, many years.

Okay, imagine a street that slants ever so gently to the south down a hill. Halfway down the street is a little pavement bump running across the street to slow cars down. Two kids stand on top of the bump (Kittatinny Ridge) with hoses. (Each kid is the headwater streams of a river) One kid sprays down the north side of the bump, and the water runs north down the side of the bump and away, and one kid sprays down the south side of the bump, and the water runs south down the side of the bump and away.

And oh, the hoses are kind of leaky and some water goes straight onto the kids shoes and rolls onto the top of the bump.

But all this water is wearing the little bump away. Finally, there is a crack in the bump and some of the water from the hose on the north side comes through and rolls down the street to the south along with all the water from the hose on the south side. As the bump wears more and more away, the water from the hose on the north side runs more and more to the south, making the crack wider and wider. Now the bump is completely gone (eroded) away in one place -- that place is your Water Gap! And all the water from the hose on the north side of the bump is running south through the Gap and down the hill. There's your river -- turned around!

Is anything happening now?

The Delaware River hasn't finished its work. Every day, the river -- with all the sand and rocks it carries -- continues to scrap and cut at what began as a small crack in Kittatinny Ridge, and is now the wide Delaware Water Gap. So, if you stop to see the Gap, even if your eyes can't see it happening, you can know that *as you watched*, the Gap got just a tiny, tiny bit bigger.