

Ask Rustle the Leaf™ About...

Dear Rustle:

Can you tell me what “Acid Rain” is?

-- Michael, Springport, IN

Dear Michael:

You have asked a short question that needs a pretty long answer! “Acid Rain” is the term used to describe a certain type of pollution. Here’s what happens: Every day, cars, trucks, airplanes and factories create harmful waste gases and waste particles. These poisons are released into the air around us. Next, the gases and particles rise into the upper atmosphere (the really, really high air where the clouds are). When clouds release their moisture droplets in the form of rain or snow, the harmful chemicals travel back to the earth with them. Now, instead of being suspended in the air, these chemicals are absorbed into the ground and fall into lakes and streams.

This is NOT good. The pollution changes a chemical balance that we find throughout the natural world. Scientists measure the chemical balance of water and soil with a “pH scale” (It’s sort of like a chemical ruler—but it is a whole different subject!). In the average, healthy lake in North America, the pH is between 6.5 and 7. With that chemical balance, all sorts of plants and animals can live and grow naturally. As polluted rain falls, it lowers the pH of the water, and makes it more acidic (a-SID-ik). When the level of acid rises, the plants and animals living in or near the water begin to die or to have trouble growing properly. For example, crayfish (some people call them “crawdads”) are like tiny fresh water lobsters and rely on a hard outer shell for protection from predators. In a lake with too much acid, crayfish can’t grow a hard shell, so they are more vulnerable and are eaten in larger numbers. If too many crayfish die, the population is eliminated and all fish and birds that eat crayfish will run out of food. Eventually, when a lake’s chemical balance becomes too acidic, everything dies. When everything dies in a lake, there is very little scientists can do to reverse the damage.



Because there are so many cars and factories, the effects of acid rain are almost too big to imagine. In the Northeastern United States, many millions of people live in a small geographic area. All

those millions of people drive cars and there are tens of thousands of factories that make products bought and used by those millions of people. The chemical pollution from all those cars and factories has affected thousands of lakes in the Northeastern US. Also, because the pollution is high up in the atmosphere, it has been blown into Canada and has polluted over 20,000 lakes in Southeastern Canada!

That’s the “bad news”, Michael, but there is some good news, too. Over the last 30 years, more and more of us have become aware of the damage cause by acid rain. More and more of us are trying to use our cars less. Governments are beginning to make laws that restrict certain kinds of factory pollution and are also making laws that require cars and trucks to use less fuel. You can do your part, too. When your parents or other grown-ups are going on a short errand, ask that they use bikes or walk! That’s good for everyone, because it reduces pollution from your car, and it provides a great way to see what’s going on in the world around you. Thanks for your question, Michael! I look forward to hearing from you again soon.

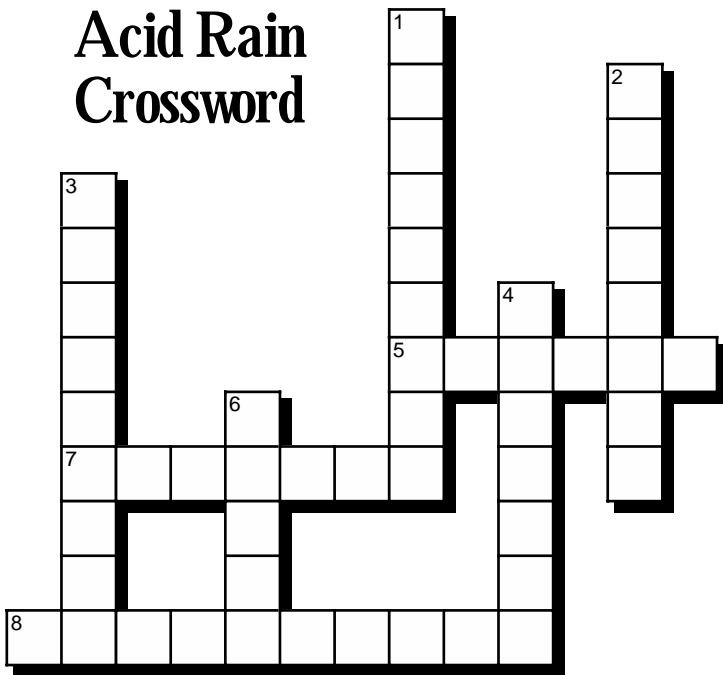
Your Friend,

RUSTLE THE LEAF

Read the “Ask Rustle the Leaf About Acid Rain” page and fill in the blanks below:

Acid Rain happens when _____ droplets from clouds fall through the upper _____ and pass through waste _____ and particles that are created by the exhaust from _____, trucks, airplanes and factories. Carrying the chemicals from the waste gasses, the droplets fall to the earth and into water supplies, altering the _____ balance or “Ph level” of the soil and water. Most soil and water that supports life has a Ph level between _____ and _____. As soil becomes acidic, different types of life begin to weaken and to disappear. One example is the _____, similar to a fresh water lobster. As water becomes more acidic, these creatures have problems with their _____ hardening properly, making them more vulnerable to predators in the water.

Acid Rain Crossword



DOWN

1. Area of Canada where Acid Rain most commonly falls.
2. Creature that becomes vulnerable to predators when the acidity level of fresh water begins to rise too high.
3. Area of the United States where Acid Rain most commonly falls.
4. Method of transportation (for short trips) that does not cause pollution.
6. It is estimated that 20,000 of these have been polluted by Acid Rain in Canada.

ACROSS

5. What water and soil become when they are exposed to Acid Rain.
7. Waste gasses from cars, trucks and airplanes that rise high into the sky.
8. Name of area to which gasses from cars, trucks and factories rise.

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CLASSROOM COMIC

