Let's face it: Everybody does it. Madonna, the Fresh Prince — everybody. Every day. In fact, most of us pass gas an average of 14 times a day.

The weird thing is that even though everybody does it, it's nobody's fault. The phenomenon scientists call flatulence is simply a result of having millions of microbes living in your large intestine. They hang out munching on the food YOU can't use. What they give you back is gas, the fuel that makes you fire.

EATERS DIGEST

It all starts before the food even gets into your mouth. Just the thought of your mom's special secret ingredient lasagna gets your mouth watering. You take that first bite and start chewing the food into smaller pieces. At the same time, digestive enzymes in your saliva start to break the food down chemically — into the simple nutrients of which it is made.

Having savored your mom’s handiwork, you swallow, sending the partially digested food to your stomach, where still other enzymes go to work on it to release more nutrients. Three or four hours later, the food, now resembling a mashed up milky liquid, passes into your small intestine. There, the digestive process continues and the nutrients are absorbed into your blood for all of your cells to use.

But hold on: Your body doesn't have enzymes to digest everything. Take those infamous beans, not to mention cabbage, cherries, watermelon, and a host of other high-fiber foods. These foods contain lots of oligosaccharides, a group of sugars found in some plant fibers. Your body has no enzymes to digest oligosaccharides, so foods containing them pass undigested into your colon (the five-foot long large intestine).

That's where the bacteria go to work.

THEY DID IT!

More than 5,000 species of microbes hang out in this lower end of your gut (the name scientists give to the whole digestive tract from mouth to anus). The bacteria couldn't ask for a better home. The colon is warm and moist — a perfect environment for growth and reproduction. And it contains none of those acids that kill bacteria in the stomach and small intestine. Best of all, it offers a steady food supply. All the microbes have to do is kick back and wait for your leftovers to drop in.

Then it's feeding time. To these critters, your leftovers represent opportunity not waste. That's because the microbes have the enzymes to break down foods your enzymes can't touch. And they do the same thing with your food that you do with yours. They metabolize it, converting the nutrients to energy or using them to build new cell structures.
"Toot" bad for us that they do it right on the spot, in our large intestines, because in the process of metabolizing nutrients, the bacteria give gaseous wastes. (We too produce gas when our cells metabolize nutrients, but it exits our bodies via our lungs.)

You may be familiar with some of the bacteria's gases: nitrogen, oxygen, carbon dioxide, hydrogen, and methane. They make up most of the air you breathe and a good 99% of the "atmosphere" in your large intestine. But they're not the ones that smell. It's the other 1% you have to watch out for.

No one's exactly sure which of the other 200 trace gases is the stinker. The prime suspects are skatole and indole (both products of protein digestion) and sulfide gases which are responsible for the smell of rotten eggs.

**WHAT CAN I DO?**

Maybe you're thinking you can stop this nasty business - kill off the bacteria by refusing to feed them the foods they like (anything you can't digest that is!!)

The bad news: Most foods contain at least some indigestible fiber for bacteria to feast on. And it wouldn't be very healthy to avoid them. Nutritionists and doctors say fiber helps prevent certain kinds of cancer and may prevent heart disease.

The good news: Scientists are looking at ways to make the best know offending foods a bit less offensive. For example, people who have difficulty digesting milk can now take enzyme supplements that do their digesting for them - no milky leftovers for the hungry bacteria on the large intestine.

One scientist is going after the granddaddy of them all, the bean. He wants to genetically engineer beans with fewer oligosaccharides to deprive the bacteria of at least some of their feast.

For now, though, one thing is certain: The old playground ditty is true. Beans (and all other indigestible foods) are a musical fruit. But remember, the bacteria are the ones tooting the horns.

**POOP IS 1/2 BACTERIA BY WEIGHT. SOME FLOATS BECAUSE IT HAS POCKETS OF GAS TRAPPED INSIDE.**

1. What is the scientific name for gas?
2. What causes gas? Where does it live? What does it eat?
3. Fill in the steps of digestion: Put food in your ___________. Use teeth to ___________. Mouth secretes _______ in saliva. Swallowing sends partially ___________ food to your stomach. The stomach secretes more that change the food into a mashed-up milky liquid. The liquid moves to the ________;

   digestion continues

4. What is the name of the sugar that the human body cannot digest?
5. How many types of bacteria are in your lower gut?
6. List 4 reasons why the colon is a perfect environment for bacteria.
7. What product do these bacteria produce as they metabolize nutrients? List 2 examples.
8. What are two ways that scientists are working on to reduce offensive gas?

**INFANT POOP DOESN'T SMELL. AS BABIES BEGIN TO EAT SOLID FOODS, THEIR POOP GETS STINKY, AND WHEN THEY BEGIN TO EAT MEAT, WATCH OUT!!**