

I Sugar

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Mmm....Why do we love sugar so much?

From chocolate cookies to crisp, juicy apples, we humans are sweet on sugar. And that's only natural. All plants and animals need sugar to live. It's the fuel that powers our cells. So it's not surprising we're hard-wired to crave the sweet stuff.

I need fuel.



Building Sweet

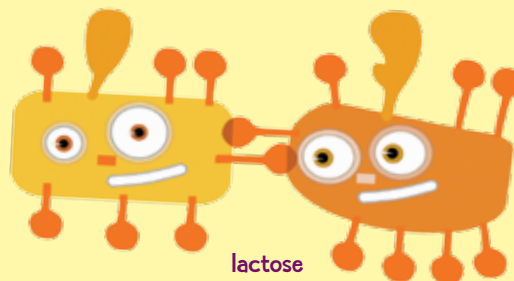
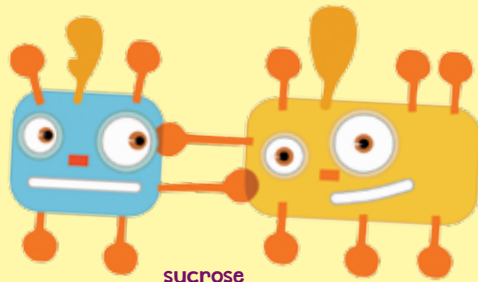
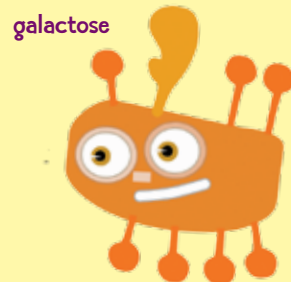
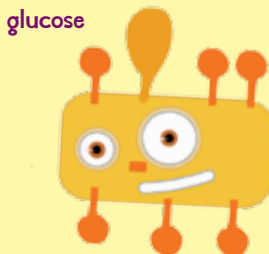
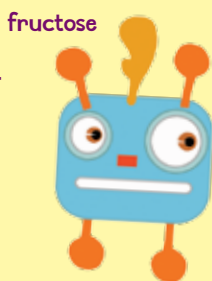
“Sugar” is the name for many different sweet-tasting molecules. They're all made of carbon, hydrogen, and oxygen atoms.

There are three basic sugar building blocks, or “simple sugars.” These are called fructose, glucose, and galactose. All of

the simple sugars can be found in plants. Fructose is what makes fruits taste sweet, for example.

Combining these simple sugars makes other kinds of sugar. The most common is sucrose, also called table sugar. The sugar your family keeps in the kitchen for baking,

Three simple sugars—fructose, glucose, and galactose—snap together in different ways to form many other kinds of sugar, a little like Legos.



or in the sugar bowl? That's sucrose. Brown sugar, powdered sugar, and molasses are sucrose too. Most of the sucrose we eat comes from sugar beets and sugarcane.

A sucrose molecule is one glucose molecule stuck to one fructose molecule. Plants make sucrose along with simple sugars. Animals make sugars too. Glucose plus galactose makes lactose, the sugar found in milk. All mammals drink lactose

in their milk as babies. But some people grow up to be "lactose intolerant," which means their bodies can't digest this sugar anymore.

High-fructose corn syrup (HFCS) is a sugar we get from corn. Like sucrose, it's a mixture of glucose and fructose. Agave syrup is glucose and fructose from a cactus. Honey is glucose and fructose from flower nectar, collected by bees. To your body, they're all pretty similar.



3 teaspoons natural sugar

How Much Sugar?

Most foods naturally contain sugars. But food makers often add more sugar to make their foods sweeter. Added sugar is not a different kind of sugar—there's just more of it. These pictures show natural sugar as plain cubes, and the added sugar in spoons.



3 teaspoons natural sugar

+



3 teaspoons added sugar

How Much Sugar?



5 teaspoons

How Much Sugar?



6 teaspoons



How Much Sugar?

Does this have sugar?



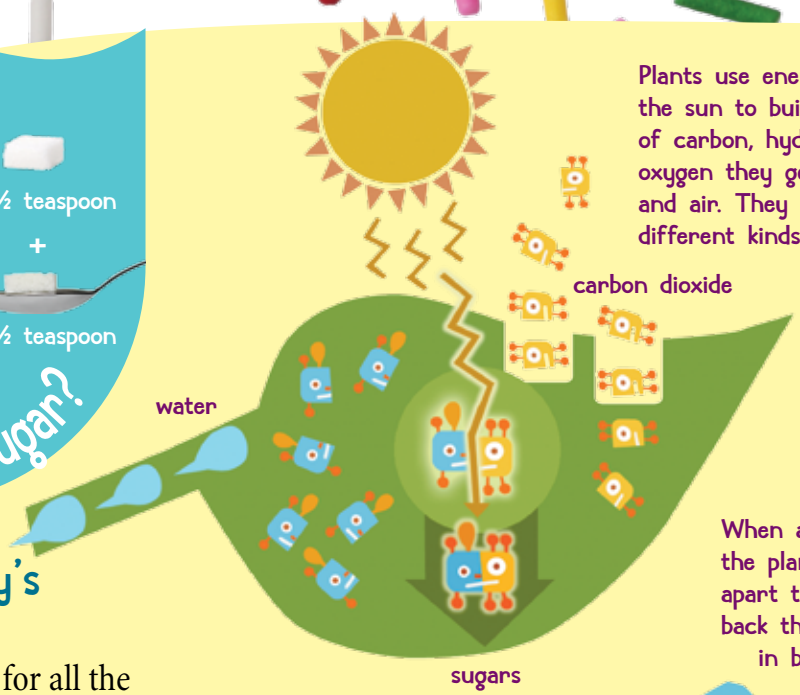
Is it sweet?





How Much Sugar?

Plants use energy from the sun to build sugar out of carbon, hydrogen, and oxygen they get from water and air. They make many different kinds of sugars.



When an animal eats the plant, it breaks apart the sugar to get back the energy put in by the sun.

The Body's Battery

Sugar is fuel for all the plants and animals on Earth. Plants use sunlight to make sugar from ingredients they get from air and water. Animals get the sugar they need by eating plants, or by eating other animals that eat plants. Sugar stores the sun's energy like a battery.

building blocks. It uses some simple sugars for energy right away. The rest get stored (sometimes as fat) for the body to break down later.



energy. That's because the sugars in those sweet foods are easy for your body to turn into fuel. When you eat other kinds of foods, like whole grains

After a meal, your body breaks down foods into their

It's only a myth that sugar makes you hyper. But having a sugary snack or a glass of fruit juice can give you a quick burst of



How Much Sugar?



How Much Sugar?





I can't help myself.



1 teaspoon

+



4 teaspoons

How Much Sugar?

or vegetables, it takes longer for your body to break the sugars down.

Have a sweet tooth? You're not alone. Even babies love sweet foods. Humans may have evolved to crave sugar because it's such an important fuel source.

Long ago, when food took a lot of work to find, liking sweet tastes helped early humans seek out the best, most energy-rich food. So humans developed a strong built-in hunger for sugar—and no “off” switch. Now that sweet food is everywhere, that love of sugar can get us into trouble.

MUST HAVE MORE SUGAR



Your pancreas, just under your stomach, helps your body use and store sugar. If you eat too much sugar, it can't keep up.

STOP!
NO MORE SUGAR

Sneaky Sugar

“Added sugar” is any kind of sugar that doesn't start out in your food. By 2018, food makers will have to tell you how much sugar they add to your snack. Even if you read the list of ingredients, it can be hard to spot! Look for anything with “sugar” in the name (date sugar, brown sugar, palm sugar). But some are sneaky. See if you can find any of these in your kitchen or lunch box—they're all different names for sugar.

Agave	Fructose	High-fructose corn syrup	Molasses	Sucrose
Barley malt	Fruit juice	Honey	Muscovado	Syrup
Cane juice	Fruit nectar	Lactose	Nectar	Treacle
Caramel	Glucose	Maltodextrin	Refiner's syrup	
Carob syrup	Golden syrup	Maltose	Rice syrup	
Corn syrup	Grape juice concentrate	Maple syrup	Saccharose	
Dextrose			Sorghum syrup	

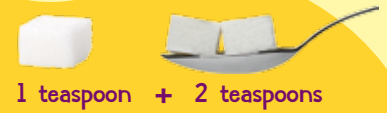
Too Much of a Good Thing

These days it's easy to find sweet snacks whenever we want them. Sodas, candy, cakes—even foods that



seem healthy, such as granola bars or yogurt, can be packed with sugar. Food makers add sugar because they know that to humans, sweet makes everything taste better.

All that sneaky sugar adds up. Americans eat about 20 teaspoons of extra sugar every single day—that's sugar that's added to food and drinks, not the natural sugar that's in most foods already. That's way more than is good for us.



The American Heart Association says kids should have no more than six teaspoons of extra sugar a day. That's less sugar than in one can of soda.

Eating too much sugar can cause more than a stomach-ache. It can make people overweight, because



Sweet Fakes

Sugar is sweet, but not everything that's sweet is sugar. Sweeteners such as aspartame, saccharin, and sucralose are artificial molecules made in labs. Another non-sugar sweetener, called stevia, comes from a plant.

The secret of these sweeteners is that they are way, way, way sweeter than sugar. That means it only takes a few grains to sweeten your food, instead of several



teaspoons. (Most of that colorful packet is filled with edible filler.) Since there's so little of it in the food, it doesn't add extra energy that gets stored as fat.

For people with diabetes or trying to lose weight, non-sugar sweeteners can help, but they aren't perfect. Some doctors think that a sweet taste with no energy rush might actually confuse the body and make us crave *more* sweet things. Others worry that the artificial molecules might not be good for us. Then again, neither is too much sugar.



Queen Elizabeth I was so fond of sweets that her teeth turned black! Portraits always show her with her mouth closed.

Experts aren't worried about naturally sweet foods—the problem is added sugar. So go ahead and enjoy a big bowl of berries, a sweet apple, or even a crunchy, sugar-rich carrot!



Even cake is great once in awhile, as long as you don't overdo it. After all, no one wants life to be dull. And your body needs its fuel!



the body stores extra fuel as fat. Sugar also changes the kinds of microbes living in your gut, decays your teeth, and can cause diseases like type 2 diabetes.

Smart Sweets

Fruits and vegetables can be pretty sugary too. But these foods are also full of vitamins and other good stuff.

