

The Secret Science of...



Straight out of History

People have been trying to straighten teeth for a long time. Scientists have discovered ancient teeth with metal bands around them that they think were early braces. Metal is a good choice because it is strong but flexible.



Strong but Flexible

People have tried different kinds of metal for braces including gold, silver, and copper. If you could look way down into metal, you would see the atoms that the metal is made of. Because of the way the atoms work together, a metal can be heated and pulled into long thin wires that are strong and flexible.



Sink Links

These days, the main metal for braces is stainless steel, which is made mostly of iron atoms with some other atoms mixed in. It's called "stainless" because it doesn't rust. That's pretty good for something in your mouth where there's bound to be a lot of water. That's one reason why a kitchen sink is also made from stainless steel.



Space Brace

The other metal that's used in braces is called "nitinol" which is also called "memory wire". This wire can be bent into a shape that it always returns to when heated. The heat from your mouth helps keep the wire the right shape and tightness for your teeth! Nitinol is also used on satellites to control the movement of solar panels.

Find Out More.

Check out some other cool science and chemistry that's in your mouth.

What makes teeth so hard?

The hardest part of the tooth is the outer covering called enamel. It is made mostly of a chemical called calcium phosphate. This is different from the chemical that makes up seashells, which is calcium



What is the blue light for?

There is a special soft flexible plastic material that is used to fill a tooth that has a cavity. Once the plastic is in the cavity, the dentist shines a blue light on the plastic which makes it very hard. The special blue light is not ultra violet and is not a laser. It is a certain color of blue and intense enough to cause a chemical reaction in the soft plastic to make it really hard.



What is fluoride and why do they put it in toothpaste?

There are bacteria in your mouth and on your teeth. These bacteria produce acid that can react with your tooth enamel and wear it away. Fluoride connects with the calcium in your enamel to make it more difficult for acids to damage it.

