Science Trek 1914 Chemistry Basics

(Music)

JOAN CARTAN-Hansen: An atom is made up of three parts—neutrons, protons and electrons. The protons and neutrons combine together to make the nucleus. And the electrons circle around the nucleus making up an atom. An element is a substance that contains only one kind of atom. Scientists have discovered 117 different elements in the universe so far, but only 94 of them are actually found naturally on earth—things like helium and carbon. Elements are groups together in a chart called the Periodic table. Each element fits into its own square. Each element has its own chemical symbol, its own atomic number—that is how many protons are in that element’s nucleus. And its own atomic mass, which is how many protons and neutrons, fit in the element’s nucleus.

An element is a substance that contains just one kind of atom. Gold only contains gold atoms, but if you combine two kinds of atoms like hydrogen and oxygen you get water—that’s known as a compound.

Hansen: Chemists study how elements react when they combine. Some reactions are spontaneous like rust on iron. Other elements need heat or pressure to react. All chemical reactions either absorb or release energy.

If you want to see a chemical reaction in your mouth, try biting down on a wintergreen Lifesaver while looking in the mirror. Oh I forgot to tell you, you have to do it in the dark.

Hansen: One of the important things about chemical reactions is that they’re predictable. Scientists can count on the same thing happening every time the elements are combined. Cooking is a chemical reaction, ingredients combined together and you heat them up. And because chemical reactions are predictable you know your cookies will turn out the same way each time you make the recipe.

Yum!

Hansen: Scientists you chemical reactions to make things, like the plastics in your toys, or for the rubber in your bike’s tires. And chemical reactions keep us alive—breathing or respiration is a chemical reaction. And so is digestion. Chemicals help us do things, make things—it starts with atoms that make up elements. Elements combine to make compounds and combined elements or compounds results in chemical reactions. So chemistry is part of just about everything we do.

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AND LOTS OF OTHER SCIENTIFIC TOPICS, CHECK OUT THE SCIENCE TREK WEBSITE.

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