

□ Activity 2: Elements in Nature

What makes up all matter on Earth (not to mention the entire universe)? Now you know — the elements of the periodic table! The 12 most common elements on Earth are oxygen, carbon, hydrogen, nitrogen, calcium, silicon, aluminum, iron, sodium, argon, chlorine, and phosphorus. Locate these elements on your periodic table of elements.

Some elements — like nitrogen, silicon, iron, and argon — are almost always found as individual elements. Others — such as carbon and oxygen — are found both separately and in compounds. Still others, like calcium, are found almost only in compounds. On page 5 of the book, you can see how elements are combined in compounds.

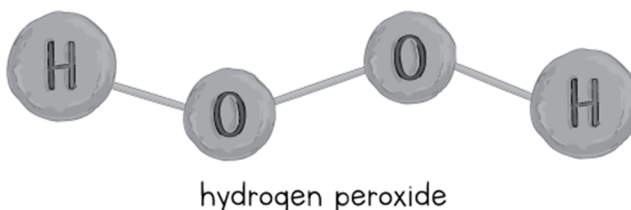
Find the "Elements in Nature" activity page. Follow the directions to build compounds found in nature: in the atmosphere, in Earth's crust, in the ocean, and in your own body.

Elements in Nature

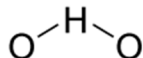
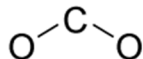
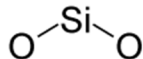
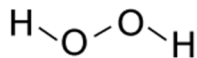
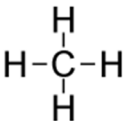
Materials: clay (kit), toothpicks (kit)

Directions: Read about the elements and compounds that make up Earth's crust, the atmosphere, the ocean, and your body. For each category, pick one compound to build. To create a model of a compound, look up the compound on the "Common Compounds in Nature" table to see what it is made of. Then make atoms from clay, label them by carving the clay with a toothpick, and connect the atoms using toothpicks. You should have four models.

Clay model example



Common Compounds in Nature

Compound	Elements	Chemical Formula	Model
Water	1 oxygen 2 hydrogen	H ₂ O	
Carbon dioxide	1 carbon 2 oxygen	CO ₂	
Salt	1 sodium 1 chlorine	NaCl	Na — Cl
Silicon dioxide	1 silicon 2 oxygen	SiO ₂	
Hydrogen peroxide	2 hydrogen 2 oxygen	H ₂ O ₂	
Methane	1 carbon 4 hydrogen	CH ₄	

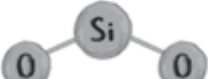
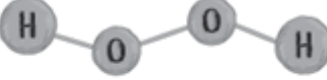
Activity 2: Elements in Nature

In this activity, your child will create clay sculptures of some of the most common compounds on Earth. She will choose a compound that is commonly found in each of the following: the human body, the oceans, the atmosphere, and the Earth's crust.

- The human body may include water, salt, or hydrogen peroxide. Carbon dioxide (from breathing) is also acceptable.
- Earth's crust will be the compound silicon dioxide.
- The atmosphere could include either carbon dioxide or methane.
- For the oceans, your child could make a model of either salt or water.

Her models should resemble the following:

"Elements in Nature" Answer Key

Compound	Model
Water	
Carbon dioxide	
Salt	
Silicon dioxide	
Hydrogen peroxide	
Methane	