Air is a substance that surrounds us and takes up space.

Most things are made of parts.

Materials may be composed of parts that are too small to be seen without magnification.

Atoms are made of a positive nucleus surrounded by negative electrons.

When elements are listed in order by the masses of their atoms, the same sequence of properties appears over and over again in the list.

There are groups of elements that have similar properties, including highly reactive metals, less-reactive metals, highly reactive non-metals, and some almost completely non-reactive gases.

A lot of different materials can be made from the same basic materials.

Objects can be described in terms of the materials they are made of (clay, cloth, paper, etc.) and their physical properties (color, size, shape, weight, texture, flexibility, etc.).

Atoms of any element are alike but different from atoms of other elements.

All matter is made up of atoms, which are far too small to see directly through a microscope.

The nucleus, a tiny fraction of the volume of an atom, is composed of protons and neutrons, each almost two thousand times heavier than an electron. The number of positive protons in the nucleus determines what an atom's electron configuration can be and so defines the element.

Scientists continue to investigate atoms and have discovered even smaller constituents of which neutrons and protons are made.

An atom's electron configuration, particularly the outermost electrons, determines how the atom can interact with other atoms. Atoms form bonds to other atoms by transferring or sharing electrons.

Atoms may stick together in well-defined molecules, or may be packed together in large arrays. Different arrangements of atoms compose all substances.

About 100 different elements have been identified... out of which everything is made.

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A system usually has some properties that are different from those of its parts, but appear because of the interaction of those parts.

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Atoms of any element are alike but different from atoms of other elements.

Particles have electrical charge.

Although neutrons have little effect on how an atom interacts with others, they do affect the mass and stability of the nucleus. Isotopes of the same element have the same number of protons (and therefore of electrons) but differ in the number of neutrons.

The nucleus of radioactive isotopes spontaneously decays, emitting particles and/or wave-like radiation. A large group of identical nuclei decays at a predictable rate. This predictable rate allows radioactivity to be used for estimating the age of materials that contain radioactive substances.