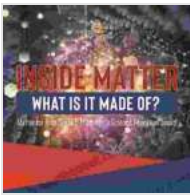


What Is Matter Made Of?

Matter is everything around us, from the air we breathe to the ground we walk on. But what exactly is matter made of? This article will explore the fascinating world of matter and its composition, delving into the tiny building blocks that make up everything in our universe. Get ready for a mind-blowing journey into the realm of science!



Inside Matter : What Is It Made Of? | Matter for Kids Grade 5 | Children's Science Education books

by Lara Adrian

★★★★☆ 4.4 out of 5

Language : English

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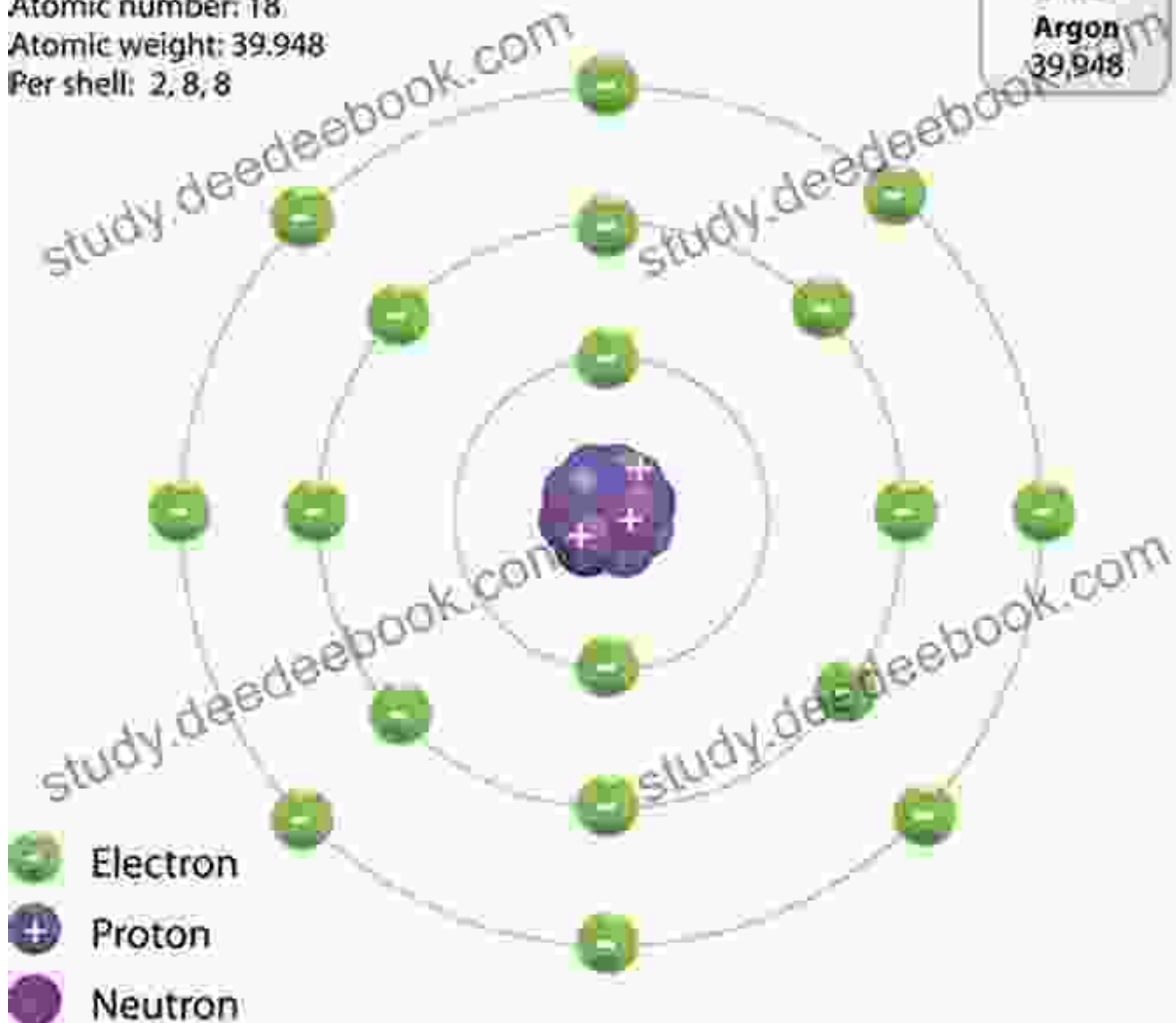


Atoms: The Basic Building Blocks

At the heart of matter lies the atom, the fundamental unit of matter that cannot be broken down any further. Atoms are incredibly tiny, with a diameter of about 0.0000000001 centimeters! Each atom consists of a nucleus, which contains protons and neutrons, and electrons that orbit around the nucleus.

Argon

Atomic number: 18
Atomic weight: 39.948
Per shell: 2, 8, 8



Elements: The Purest Form of Matter

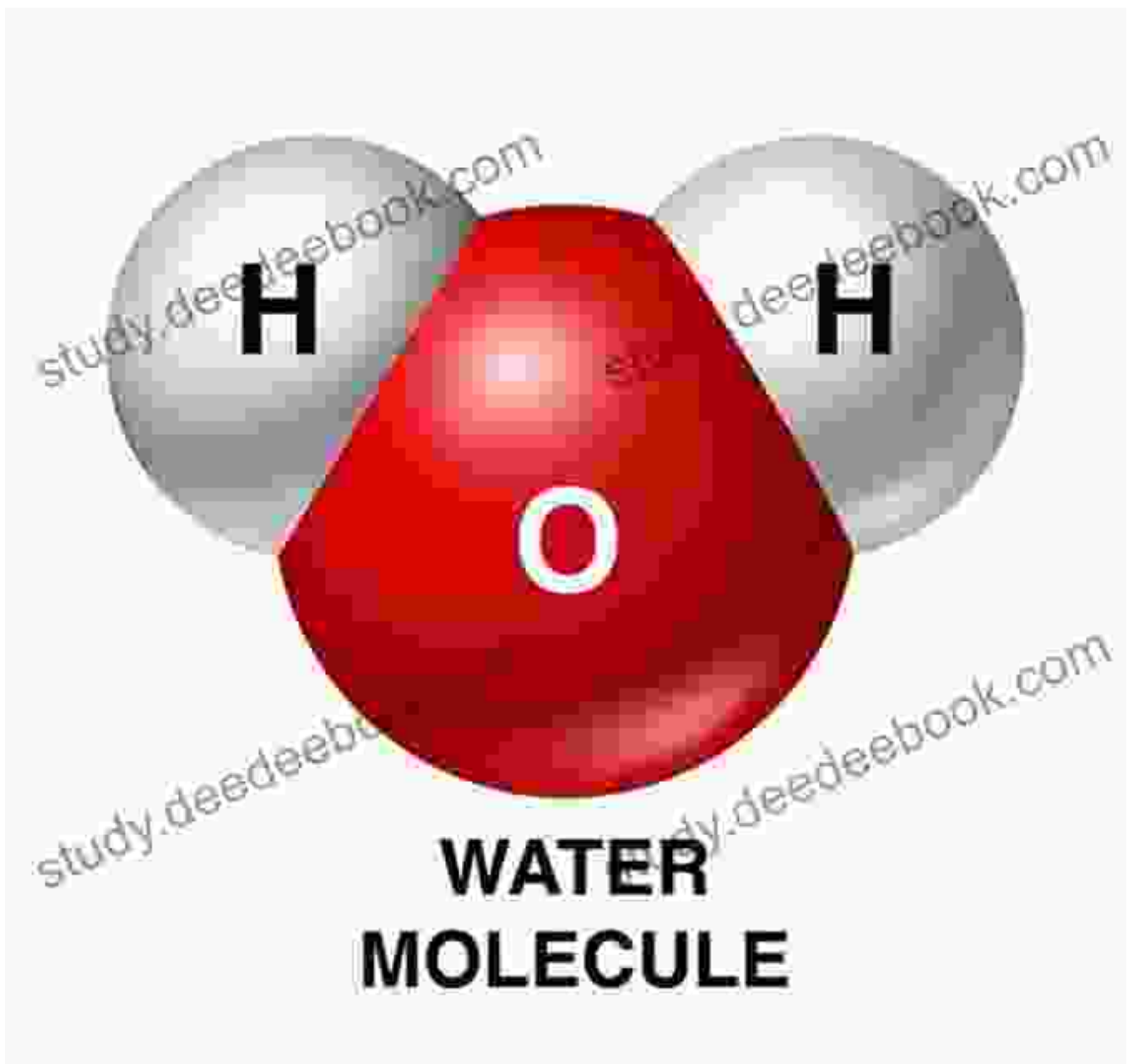
Elements are pure substances made up of only one type of atom. Each element has a unique atomic number, which determines the number of protons in its nucleus. For example, hydrogen, the most abundant element in the universe, has an atomic number of 1, meaning it has one proton in its nucleus.

Periodic Table of the Elements

The image shows a standard periodic table of elements, color-coded by groups. The elements are arranged in rows and columns, with the noble gases (Group 18) on the far right and the alkali metals (Group 1) on the far left. The lanthanide and actinide series are shown as separate rows below the main table. A watermark 'x.com' is visible across the middle of the table, and a copyright notice 'Copyright © www.distalib.com' is at the bottom.

Molecules: When Atoms Team Up

Atoms can combine with each other to form molecules, which are the building blocks of compounds. A compound is a substance made up of two or more different elements that are chemically bonded together. For example, water is a compound made up of two hydrogen atoms and one oxygen atom (H₂O).



Mixtures vs. Compounds

It's important to distinguish between mixtures and compounds. A mixture is a combination of two or more substances that are not chemically bonded together. The components of a mixture can be easily separated back into their individual parts. For example, salt water is a mixture of water and salt.

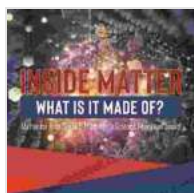
In contrast, a compound is a substance where the components are chemically bonded together. This means that the compound cannot be easily separated back into its individual parts. For example, water is a compound, as it cannot be separated into hydrogen and oxygen without breaking the chemical bonds between the atoms.

States of Matter

Matter can exist in three different states: solid, liquid, and gas. The state of matter depends on the temperature and pressure of the substance.

- **Solids** have a fixed shape and volume. The particles in a solid are tightly packed together and have very little movement.
- **Liquids** have a fixed volume but no fixed shape. The particles in a liquid are closer together than in a gas, but they have more movement.
- **Gases** have no fixed shape or volume. The particles in a gas are far apart and move very quickly.

Understanding the composition of matter is a fundamental part of science education. By exploring the building blocks of matter, from atoms to molecules to compounds, we gain a deeper appreciation for the world around us. The next time you look at a leaf, a rock, or even your own hand, remember that it's all made up of tiny atoms and molecules that interact in fascinating ways. The world of matter is an endless source of wonder and discovery!



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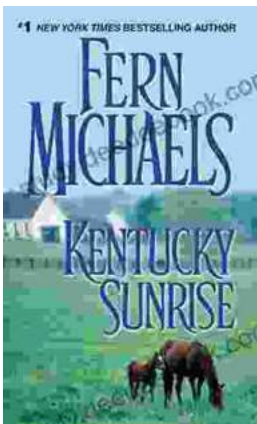
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