Atoms molecules compounds and elements worksheet

An element is made of only one type of atom, while the compound contains atoms of two or more elements. For example, gold is made of only one kind of atom, so it is an element, but water is a mixture of hydrogen and oxygen, so it is a compound. Simply put, the difference between elements and compounds is that the elements are made of only one thing, but the compounds are made of more than one thing. Compounds are made of different elements. Elements can be found in the periodic table of elements; these are substances that can not be divided into simpler parts. If sodium were broken down into one atom, it would still be sodium, but sodium chloride (aka salt), a compound of sodium and chlorine, would be either one sodium atom or one chlorine atom. One way students remember the difference between these two things is to look at their name and think about what that word means. Compounds are made of component elements, while elements are elementary - natural and simple in themselves. The compounds are made of different kinds of atoms that are chemically linked as if they were being pounded together. A molecule is formed when two or more atoms of an element chemically merge together. And a compound is a kind of molecule in which the types of atoms that make up a molecule differ from each other. Not all molecules are compounds, because some molecules, such as hydrogen gas or ozone, consist of only one element, only one type of atom. Some examples of molecules include: Water: H2OOxygen: O2Ozone: O3 Some examples of compounds include: sp3d2 results from the hybridization process. The process of hybridization involves taking over atomic orbitals and mixing them into hybrid orbital orbits. These have a different shape, energy and other properties than component atomic orbitals. The concept of sp3d2 hybridization involves hybridization of three p, one s and two d-orbitals. This results in the formation of six different sp3d2 orbitals and these take on an osmahedtral arrangement. For something to be classified as eighth, it must have six atoms, electron pairs, or groups of atoms with a symmetrical arrangement around a single atom. This defines the peaks of the octahedron. There are eight symmetrical surfaces on the molecule that are 90 degrees between each of the atoms. The oxygen molecule contains two atoms. Oxygen never exists freely in nature, but rather exists as a diatomical molecule, which means that two oxygen atoms merge and share electrons. Other diatomical molecules include chlorine and hydrogen. The only diatommatic elements are non-metals. Diatomic elements consist of two atoms of the same element sharing electrons. Hydrogen, fluorine, chlorine, bromine and iodine are all diatomical elements and cannot be found as individual atoms in their elementary form. These elements only need one electron to fill their external energy level, so they only need to share or find one electron. Oxygen, on the other hand, shares two electrons. Because oxygen needs two Electrons fill its outermost energy levels to become stable, wanting to share electrons with others, especially with other oxygen atoms. Carbon dioxide, nitrous oxide and methane are all compounds that consist of two elements. INDIGO MOLECULAR IMAGES, Getty Images A compound is a chemical made up of two or more elements. Here is a list of examples of compounds composed of exactly two elements. H2O - waterNaCl - sodium chloride or table saltKCl - potassium chlorideHCl - hydrochloric acid N2O - nitrous oxideAY - silver iodineAlN - nitridub4C - boben carbideCdTe - cadmium tellurideCsF - cesium fluoride Note: A compound consisting of two elements can contain more than two atoms! A supercomputer designed around Intel's Atom microprocessor? Yes, why not? Silicon Graphics showed off the Molecule concept computer concept on Monday that the company said could pack 10,000 cores into one rack. If one day brought to market, a single-rack system based on the Concept Silicon Graphics Molecule computer would offer computing power and memory bandwidth to more than 750 high-end PCs, SGI said, but it would consume less than half the power and less than 1.4 percent of physical space. Analysis of applications and market trends shows that several customer environments can potentially benefit from a combination of significantly higher density, memory bandwidth, instructional memory bandwidth, and performance per watt, said Shahin Khan, vice president of marketing and strategy at Silicon Graphics, in a statement. Computer concept Silicon Graphics Molecule illuminates what is possible in the future. It explores what solving these problems might look like if we used a completely different technological base, and how such a system would complement our existing intel-based global shared memory systems and high-performance, massively parallel clusters that are among the most powerful systems in the world. Intel's Atom microprocessor has been designed as a low-cost alternative to today's low-performance computer microprocessors. These, in turn, are generally less powerful versions of processors used to run servers that contain additional caches for better performance. The key to the tot concept, SGI said, was its Kelvin cooling technology, which could pack 10,000 cores into one rack. Combining an Atom processor with Kelvin technology could generate seven times better memory per watt performance than a single-rack X86 cluster. The molecule could also process 20,000 concurrent fibers, forty times more than a rack, and 15 terabytes/s of memory power, SGI said. Lithium is an element that is atomic number 3 in a periodic table. This means that each atom contains 3 protons. Lithium is a soft, silvery, light alkaline metal marked with the li symbol. Here are interesting facts about atomic number 3: Lithium is the lightest metal and the lightest solid element at normal temperature and pressure. Density near room temperature is 0.534 g/cm3. That is, not only swims on the water, but is only about half as dense as that. It is so light that it can even swim on oil. It also has the highest specific thermal capacity of a solid element. Element number 3 has the highest melting point and the boiling point of alkaline metals. Element number 3 is soft enough to be cut with scissors. Freshly cut metal is silver-colored, with a metallic sheen. However, the moist air quickly corrodes the metal and turns it dull gray and finally black. Among its uses, lithium is used in drugs for bipolar disorder to make lithium-ion batteries, and add red paint to fireworks. It is also used in glass and ceramics and for the production of high temperature lubricant. It's a coolant in breeding reactors and a source of tritium when atomic number 3 is bombarded with neutrons. Lithium is the only alkaline metal that reacts with nitrogen. Yet it is the least reactive metal in its group of elements. That's because the lithium valence electron is so close to the atomic nucleus. While lithium metal burns in water, it does not do as strongly as sodium or potassium. Lithium metal will burn in the air and should be stored under kerosene or in an inert atmosphere like argon. Do not try to put out the lithium fire with water, because it will only make it worse! Since the human body contains a lot of water, lithium also burns the skin. It is corrosive and should not be handled without protective equipment. The name of the element comes from the Greek word lithos, which means stone. Lithium was discovered in mineral petality (LiAlSi4O10). Brazilian naturalist and statesman Jozé Bonifácio de Andralda e Silva found the stone on the Swedish island of Utö. Although the mineral looked like an ordinary gray rock, it turned red when it was cast into the fire. Swedish chemist Johan August Arfvedson has discovered that the mineral contains a hitherto unknown element. He couldn't isolate a clean sample, but in 1817 he made lithium salt out of petality. Atomic mass is the weighted diameter that represents the natural isotope occurrence of an element. Lithium is believed to be one of only three chemical elements produced in the Big Bang that formed the universe. The other two elements are hydrogen and helium. However, lithium is quite unusual in space. Scientists believe the reason is that lithium is almost unstable, with isotopes having the lowest binding energy to the nucleon of any stable nuclide. Several lithium isotopes are known, but the natural element is a mixture of two stable isotopes. Li-7 (92.41 percent natural abundance) and Li-6 (7.59 percent natural abundance). The most stable radioisotope is lithium-8, which has a half-life of 838 ms. Lithium easily loses its external electron and creates a Li+ ion. This leaves an atom with a stable inner shell of two electrons. Lithium-ion easily conducts electricity. Due to its high reactivity, lithium is not offered in nature pure element, but the ion is abundant in seawater. Lithium compounds are found in clay. Humanity's first fusion reaction involved atomic number 3, in which lithium was used to produce hydrogen isotopes for the 1932 Mark Oliphant fusion.Lithium is found in trace amounts in living organisms, but its function is unclear. Lithium salts are used to treat bipolar disorder, where it acts to stabilize mood. Lithium is a superconductor at normal pressure at extremely low temperature. It also superconducting at higher temperatures when the pressure is very high (greater than 20 GPa). Lithium displays multiple crystal structures and aligotropics. It exhibits a diamond crystal structure (nine-layer repetition skirminds) around 4 K (liquid helium temperature), a transition to a cubic and body-oriented cubic structure as the temperature increases. Increases.