**Foundations of Human Biology 1 study notes**

**Week 1 – Chemistry**

This guide includes only the key points of the Week 1 Chemistry video, including elements, atoms, chemical bonds, ionic bonds, ions, covalent bonds, and hydrogen bonds. You can use this guide to review the content of the video and take notes.

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| **Key points** | **Notes** |
| **What is an element?**Elements make up all matter, both living and inanimate. The smallest part of an element is the atom, and an element is made up of only one type of atom.  |  |
| **What is an atom?**An atom consists of three major subunits – protons, neutrons and electrons. A proton has a positive electrical charge and is found in the nucleus of the atom. A neutron is electrically neutral, or has no charge, and is also found in the nucleus. An electron has a negative charge and is found in the electron shell orbiting around the nucleus.  |  |
| **Chemical bonds**A chemical bond is a force or attraction between positive and negative electrical charges that keep two or more atoms closely associated with each other to form a molecule. |  |
| **Ionic bonds**Ionic bonds involve the loss of one or more electrons by one atom and gain of electrons by another atom.  |  |
| **What is an ion?**When an atom loses or gains one or more electron, its charge changes as the number of protons and electrons are no longer the same, and it is then called an ion. If it has a positive charge, or more protons than electrons, it is called a cation. If it has a negative charge, or more electrons than protons, it is called an anion. |  |

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| **Covalent bonds**Covalent bonds involve the sharing of electrons between atoms.  |  |
| **Disulphide bonds**Disulphide bonds are covalent bonds between sulphur atoms. These bonds are important for maintaining the shape of proteins. |  |
| **Hydrogen bonds**Hydrogen bonds occur when a hydrogen atom shares it’s one electron in a covalent bond with another atom, gaining a slight positive charge. This then might be attracted to an atom with a slight negative charge. Hydrogen bonds are important in maintaining shape.  |  |