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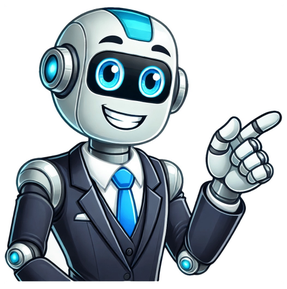

This worksheet provides information about various elements and ions, including their atomic number, mass number, number of protons, neutrons, and electrons. Data is presented for common elements like carbon, oxygen, potassium, gold, tin, zinc, cobalt, boron, iron, as well as ions like iodine, chlorine, hydrogen, bromine, boron, oxygen, nitrogen, aluminum, iron, and copper. Students are asked to fill in missing information in charts about the atomic structure of these atoms and ions based on their atomic number and mass number. What is an ion? An atom or molecule that has an overall charge. How are ions formed? An atom becomes an ion when electrons are lost or gained – thereby creating a disparity in positive and negative charge. What is a cation? An ion with a positive charge. How is a cation formed? A cation is formed by the loss of electrons. How is a cation named? Using the element's name from the periodic table. What is an anion? An ion with a negative charge. How is an anion formed? An anion is formed by adding electrons to an atom. How is an anion named? An anion is named by replacing the suffix of the element name with "-ide" followed by the word ion. What elements on the period table tend not to form ions? Why? Noble gases. They have a stable electron configuration as all orbitals are filled. What is ion most commonly formed by Alkali Metals: +1 Alkaline Earth Metals: +2 Group 3A : +3 Group 5A : – 3 Group 6A: – 2 Halogens: – 1 How is an ion indicated in a chemical symbol? Determine the number of protons, electrons and neutrons in the following. 56Fe3+ protons = 26 electrons = 23 neutrons = 30 19F- protons = 9 electrons = 10 neutrons = 30 15N3- protons = 7 electrons = 10 neutrons = 8 23Na+ protons = 11 electrons = 10 neutrons = 12 In a neutral atom, The number of protons, electrons and neutrons are all equal. The number of protons and neutrons are equal. The electron count can be different. The number of neutrons and electrons are equal. The proton count can be different. The number of protons and electrons are equal. The neutron count can be different.