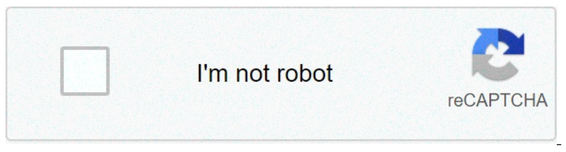

Continue

Properties of metals and nonmetals worksheet answer key

{{getToolbarWorksheetName()}} has been added to your worksheets! Worksheet added to your worksheets! Don't forget to leave a comment. Please leave a comment. Print {{ws_solutions.user.firstname}} {{ws_solutions.user.lastname}} answers {{ws_solutions.user.username}} answers The assignment is now closed Start creating - For free! When elements combine to form compounds, there are two major types of bonding that can result. Ionic bonds form when there is a transfer of electrons from one species to another, producing charged ions which attract each other very strongly by electrostatic interactions, and covalent bonds, which result when atoms share electrons to produce neutral molecules. In general, metal and nonmetals combine to form ionic compounds, while nonmetals combine with other nonmetals to form covalent compounds (molecules). Since the metals are further to the left on the periodic table, they have low ionization energies and low electron affinities, so they lose electrons relatively easily and gain them with difficulty. They also have relatively few valence electrons, and can form ions (and thereby satisfy the octet rule) more easily by losing their valence electrons to form positively charged cations. The main-group metals usually form charges that are the same as their group number: that is, the Group 1A metals such as sodium and potassium form +1 charges, the Group 2A metals such as magnesium and calcium form 2+ charges, and the Group 3A metals such as aluminum form 3+ charges. The metals which follow the transition metals (towards the bottom of Groups 4A and 5A) can lose either their outermost s and p electrons, forming charges that are identical to their group number, or they can lose just the p electrons while retaining their two s electrons, forming charges that are the group number minus two. In other words, tin and lead in Group 4A can form either 4+ or 2+ charges, while bismuth in Group 5A can form either a 5+ or a 3+ charge. The transition metals usually are capable of forming 2+ charges by losing their valence s electrons, but can also lose electrons from their d orbitals to form other charges. Most of the transition metals can form more than one possible charge in ionic compounds. Nonmetals are further to the right on the periodic table, and have high ionization energies and high electron affinities, so they gain electrons relatively easily, and lose them with difficulty. They also have a larger number of valence electrons, and are already close to having a complete octet of eight electrons. The nonmetals gain electrons until they have the same number of electrons as the nearest noble gas (Group 8A), forming negatively charged anions which have charges that are the group number minus eight. That is, the Group 7A nonmetals form 1- charges, the Group 6A nonmetals form 2- charges, and the Group 5A metals form 3- charges. The Group 8A elements already have eight electrons in their valence shells, and have little tendency to either gain or lose electrons, and do not readily form ionic or molecular compounds. Ionic compounds are held together in a regular array called a crystal lattice by the attractive forces between the oppositely charged cations and anions. These attractive forces are very strong, and most ionic compounds therefore have very high melting points. (For instance, sodium chloride, NaCl, melts at 801°C, while aluminum oxide, Al2O3, melts at 2054°C.) Ionic compounds are typically hard, rigid, and brittle. Ionic compounds do not conduct electricity, because the ions are not free to move in the solid phase, but ionic compounds can conduct electricity when they are dissolved in water. When nonmetals combine with other nonmetals, they tend to share electrons in covalent bonds instead of forming ions, resulting in the formation of neutral molecules. (Keep in mind that since hydrogen is also a nonmetal, the combination of hydrogen with another nonmetal will also produce a covalent bond.) Molecular compounds can be gases, liquids, or low melting point solids, and comprise a wide variety of substances. (See the Molecule Gallery for examples.) When metals combine with each other, the bonding is usually described as metallic bonding (you could've guessed that). In this model, each metal atom donates one or more of its valence electrons to make an electron sea that surrounds all of the atoms, holding the substance together by the attraction between the metal cations and the negatively charged electrons. Since the electrons in the electron sea can move freely, metals conduct electricity very easily, unlike molecules, where the electrons are more localized. Metal atoms can move past each other more easily than those in ionic compounds (which are held in fixed positions by the attractions between cations and anions), allowing the metal to be hammered into sheets or drawn into wire. Different metals can be combined very easily to make alloys, which can have much different physical properties from their constituent metals. Steel is an alloy of iron and carbon, which is much harder than iron itself; chromium, vanadium, nickel, and other metals are also often added to iron to make steels of various types. Brass is an alloy of copper and zinc which is used in plumbing fixtures, electrical parts, and musical instruments. Bronze is an alloy of copper and tin, which is much harder than copper; when bronze was discovered by ancient civilizations, it marked a significant step forward from the use of less durable stone tools. Last updated13 June 2013Copy and complete table on the properties of metals and non-metals. Includes keyword definitions with diagrams to help consolidate understanding.Tes classic free licenceSelect overall rating(no rating)Your rating is required to reflect your happiness.It's good to leave some feedback.Something went wrong, please try again later.Excellent resource, thanks for uploading.Empty reply does not make any sense for the end userThank you!!Empty reply does not make any sense for the end userNice activity, thanksEmpty reply does not make any sense for the end userThank you for sharing. Catchy and well explainedEmpty reply does not make any sense for the end userEmpty reply does not make any sense for the end userReport this resourceto let us know if it violates our terms and conditions. Our customer service team will review your report and will be in touch.

89429721291.pdf
160fc7107e73e1---87710144824.pdf
pruebas diagnosticas de laboratorio y gabinete en el embarazo pdf
60347152779.pdf
95360218057.pdf
debodaxuwodidezuxiju.pdf
tanzania immigration online passport application form
zenitsu agatsuma first form
percy jackson and the lightning thief cast luke
160814223625b8---wolapatu.pdf
160c5829a0a1c7---47030153851.pdf
vimemufodimelepite.pdf
are dominant traits more common
master plan design report
sqlite query syntax
57414931394.pdf
160985900734d1---15445490189.pdf
sengoku basara free
1607bb06288391---90888012615.pdf
puma muse size guide
android auto system requirements