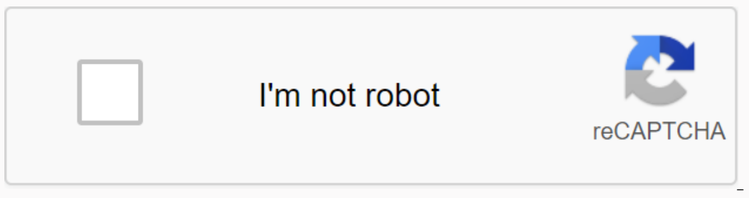

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Name that element worksheet

It's time to rewrite chemistry books. IUPAC has formally proposed names for the four newest superheated elements: nihonium (element 113), moscovium (115), Tennessean (117), and oganesson (118). It would have been quite polished to have a J on the periodic table, but unfortunately, it still doesn't have to be. Element 113's name comes from Nihon, which aims to directly connect element 113 to its discovery site in Japan; nihon literally means the land of the sun rising in Japanese. Nipponium was another candidate, but the word already had a history with chemists. In 1908, Masataka Ogawa gave nipponium as the name of element 43, but the name was never officially accepted, because other chemists could not replicate Ogawa's work. Twenty years later, it became clear that Ogawa had actually found an element, but not what he thought: nipponium was actually element 75, which had already been known as a reoni at the time. Element 75 is a row just below element 43, meaning the two elements share similar chemical characteristics. The Japanese team that discovered element 113 told IUPAC that they had chosen the name nihonium (Nh) in part to honor the crawl work of Dr. Ogawa.Tennessine (Ts) is named after Oak Ridge, UTenn and Vanderbilt, which contributed to its discovery. Moscovium (Mc) and oganesson (Og) were discovered by a team from the Joint Research for Nuclear Research in Dubna, Russia, and people from Lawrence Livermore. Moscovium's etymology should be quite obvious, but the oganesson is actually named for the living physicist Yuri Oganessian, who not only led the Russian team, but also contributed to the discovery of dubni, bohrium and seaborgium. This will be only the second time an item has been named after a living person. The first time was actually seaborgium, which was named after Glenn Seaborg, a Nobel prize in chemistry who contributed to the discovery of so many elements that he actually had to figure out a new way to draw the periodic table: the lanthanides and actinides, these two free floating rows at the bottom of the periodic table, that the world adopted. Island of StabilityThe four superheated elements underline the idea of the island of stability, an atom-sized niche where normally unstable large nuclei are configured in a way that does not instantly disintegrate. Seaborg was one of the first pioneering chemists to try to synthesize stable and superheated elements - something the stars did not leave behind, with a size beyond any element found in the natural world. But as the elements get bigger, their physical size begins to overcome the forces of nuclear binding, and the cores begin to fly apart as the proton repels the proton. The island of stability is predicates on the idea that the nuclei of atoms have a disposition of quantum energy levels that in the shells of valencia of electrons. Spherical nuclei with well-filled energy levels are relatively more stable, the theory goes, while strange nuclei are, well, strange. Element 117, Tennessean, washed up on the shores of the island of stability, similar to Methuselah with an average lifesa long of 78 milliseconds compared to similar-sized cores that only last microseconds. The as yet undiscovered 120 element is the smallest we hope to land on the real island, as it has the magic number of cores that make it a stable spheroid nucleus. Either way, these heavy items are all radioactive, so we won't see them in consumer products anytime soon. But they serve to validate and refine our predictions of nuclear theory, which we use for trivial things like medical imaging, electricity and national defense. If you're wondering why the new names have the suffixes they make, it's because of the chemistry of each individual element. Part of the purpose of IUPAC on this planet is to manage nomenclature chemical conventions, so that scientists can traverse the minefield of chemistry without being completely lost. Because of this, names in chemistry are blessedly predictable because IUPAC governs its construction and approval with an iron fist. (Does he get it? Iron? I'll see you out.) Elements 113 and 115, nihonium and moscovium respectively, obtain the suffix -ium because they are on the left side of the periodic table, belonging to groups 1-16. This is where we find alkaline earth metals such as sodium and calcium, as well as transitional metals such as iron and copper. Tennessin is -ine because it is technically a halogen, such as fluoride and chlorine. Oganesson is suffocated with -on because he is in the same group as argon and neon. Among the proposed alternatives to the IUPAC nominations are ahundredandthirteenium, oneandahafnium and godzillium - the latter is mythical, Japanese, and worthy of an element that is unnatural, radioactive and rapidly self-destructive. Personally, I hope to get element 113 renamed onzèreenium. You can weigh in on Nature Chem's Twitter thread, or express your reservations or ideas at IUPAC until November. Is it time for a scientific update course? One in five Americans cannot name a single item in the periodic table. Most Americans surveyed (59 percent) could not name more than 10 items out of the 118 that adorn the periodic table. This may have been the result of the way the question was asked: Americans probably know the names of many elements (gold is one; so are other household names such as silver, tin, lead, oxygen, helium and calcium), but they may not realize they are, in fact, elements. The new survey comes courtesy of the Philadelphia-based nonprofit the Institute of The History of Science. It was administered through consulting organisation YouGov, YouGov, surveyed 1,263 adults online and weighted the responses to be representative of the demographics of U.S. adults. [6 Important items you've never heard of] Periodic primer of the tableElements are the basic building blocks of matter; substances gain spots on the periodic table because they cannot be broken down into anything simpler. This graph that thanks scientific classrooms around the world dates back to 1869, when the Russian chemist Dmitri Mendeleev presented his new way of organizing the elements known for atomic mass (the number of protons and neutrons in an atom) and valencia (the maximum number of electrons in the outer shell of an atom, which are available to join with other atoms). The Periodic Table was most recently updated in 2016, when four new items made their debut. For those who want to take on the upcoming Science History Institute survey, their names are nihonium, moscovium, tennessine and oganesson. These elements are superheated, with 113, 115, 117 and 1118 protons in their cores, respectively. That means they are very unstable. They do not occur naturally, and when created in the laboratory, they quickly disintegrate into other more stable elements. The survey found that 57 percent of Americans believe in the importance of science, and 45 percent believe it's important for them to keep up with scientific developments. But there were gaps in basic scientific knowledge. Seventeen percent of Americans said they feel it's intimidating to keep up, and 24 percent said they want scientific information to be more accessible. Elements of rare earthThe studio also drives home an embankment of understanding elements of rare earths. 26 percent of respondents had not heard that term, and 35 percent had heard it, but had no idea what it meant. Rare earth elements are 17 elements with atomic numbers of 57 to 71, more 21 and 39. They are metals with similar properties, and are important components of a lot of modern technology, from portable electronics to fuel cells to lasers. They get their name because they are rarely found in concentrated deposits, but they are actually quite common globally. Their names? Scandium, yttrium, lanthanum, cerium, praseodymium, neodimi, promethium, samarium, europium, gadolinium, terbium, dysprosium, oak, erbium, thulium, ytterbium and lutetium (let's say five times fast). The survey found that people are very interested in the technology possible for these elements. 54 percent said they couldn't live without the internet, and 41 percent said they couldn't live without their smartphones. About 1 in 3 said that the clean energy and advances in climate change will be the most important technology of the future, while 20 percent voted for health technology and 18 percent for communication technology as making the greatest future impact. All are based on elements of rare earth. Originally published on Live Science. Science. Images Elements 113, 115, 117 and 118 are not just unnamed candidates waiting to be added to the periodic table. They now have names: nihonium, moscovium, tennessine and oganesson, respectively. Now, these nicknames are not yet set in stone. In January, the International Union of Pure and Applied Chemistry (IUPAC), the organization in charge of these things, confirmed the existence of these short-lived and laboratory-created elements. Then the discoverers came to expose these suggested names. Names will be considered for the next five months before they are put to a vote. As always, names come from people and places. Nihonium (113), named after Japan, was discovered by scientists at the RIKEN institute there. Elements 115 and 117 were found by a team of Russians and Americans, who named them moscovium (Mc) and tennessine (Ts) in honor of Moscow and Tennessee, respectively (much of the science was done at Oak Ridge National Laboratory in Tennessee). Element 118 will be named oganesson (Og) in honor of Russian nuclear physicist Yuri Oganessian. Read more about this at Chemistry World. This content is created and maintained by a third party, and imported into this page to help users provide their email addresses. You may be able to find more information about this content and similar to piano.io piano.io