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## Horizontal rows on the periodic table are called

It is human nature to organize things. Chefs meticulously organize their spices in different groups, whether alphabetically or depending on how often they are used. Children throw out their piggy banks and sort their wealth into piles of pennies, nickel, dimes and quarters. Even the items in a grocery store are grouped in a certain way. Walk down the international aisle and you'll find packages of Chinese egg noodles sitting next to boxes of taco bowls. Chemists, it turns out, are also organizational junkies. They look for similar physical and chemical properties between the elements, the basic forms of matter, and then try to fit them into similar groups. Scientists began trying to organize the elements in the late 1900s, when they knew about 60. However, their efforts were premature because they lacked important information: the structure of the atom. While the first efforts failed, an attempt by the Russian chemist Dmitry Mendeleev showed much promise. Although Mendeleev was not 100 percent correct, his approach laid the foundation for what is now the modern periodic table of the elements. Today, the period table organizes 112 named items and recognizes several other unnamed items. It has become one of the most useful tools in chemistry, not only for students, but also for working chemists. It classifies the elements according to their atomic number (more on that soon), tells us about the nuclear composition of a particular element, describes how electrons are arranged around a particular element and allows us to predict how one element will react with another. So, what exactly is this performance of the organization? Read on as we explore the history, organization, and use of this most practical chemical tool. It's handy to know which group a particular element is in and what its atomic structure looks like, but that's not all the period table needs to tell you. If you look at it, you casually pick up work that scientists have struggled with. And if you look at the table as a whole, there are some big trends that tell us how one element will react with another. Before we can see these trends, a quick chemistry summary could be good. First, metals react with non-metals to form ionic compounds. The non-metal atom takes one or more valence electrons from the metal atom. When an atom gains or loses a valence electron, it forms an ion. An ion with more protons than electrons is positively charged and is called cation (comes metal). An ion with more electrons than protons is negatively charged and is called anion (comes from the nonmetal). In the end, both ions have a full external energy level. Second, nonmetals tend to divide electrons so that both atoms have full external energy levels; they form covalent compounds. But how do you know which element will react with which element in order to or a covalent compound? This depends on a number of factors: ionization energy: the amount of energy it takes to remove the first valence electronegative: a measure of how firmly an atom holds on to its valence electronsNuclear charge: the attractive force between the positive protons in the nucleus and the negative electrons in the energy levels. The more protons, the greater the nuclear charge. Shielding: Inner electrons tend to shield the outer electrons from the attractive force of the nucleus. The more energy levels between the valence electrons and the nucleus, the more shielding. Let's see how these factors can help predict what kind of chemical reactions two elements will make. When you look at the period table, the ionization energy tends to decrease as you move a column down and enlarge as you move from left to right over a period of time. If you compare elements in groups 1 and 2 (left) with those in 16 and 17 (right), you will find that the elements in the first groups have lower ionization energies, do not hold their valence electrons as firmly, and tend to form cations. For example, elements in groups 1 and 2 tend to form ionic connections. Like ionization energy, electronegativity decreases when you walk down a column, and increases when you go from left to right over a period of time. Fluorine is therefore more likely to take electrons from another element than lithium. The difference in electronegativity between two elements will determine whether they exchange electrons (ionic compounds) or share electrons (covalent compounds). You can use trends in ionization energy and electronegativity to predict whether two elements will form ionic or covalent compounds. Finally, the nuclear charge increases when you go over the table, while the shielding remains constant over the periods, but increases when you go down the columns. These tendencies tell you about the atomic size. Atoms and ions get larger when you go down the columns because the shielding effect outweighs the effects of the nuclear charge, so that the attraction between the nucleus and the electrons is weaker and the atom expands in size. In contrast, atoms become smaller when they go over the periods because the nuclear charge effect outweighs the shielding effect, so that the attraction between the nucleus and the electron is stronger and the atom shrinks in size. It's hard to believe that a meager piece of paper can contain so much information. Atom smasher enthusiasts and chemistry types alike should get a kick from the latest news from IUPAC. A multinational scientists, including American delegations from Oak Ridge Labs and Lawrence Livermore, and a group from the Joint Institute for Nuclear Research in Dubna, Russia, have isolated four new super-heavy elements that sit at the very end of the periodic table and complete the seventh row. Since IUPAC and the researchers new elements that they eventually get to name them. So we ended up with two elements called Yttrium and Ytterbium – because they were both discovered in the same city. (Unfortunately, there is still no nobelium in the period table.) Super-heavy elementsIn nature requires the formation of elements that are heavier than iron, so that lighter atoms collide with so much energy that it only happens under the extreme conditions in the heart of a supernova. To create super-heavy elements when we can't find them on Earth, researchers begin to put lighter nuclei in one nuclear destroyer and then, faster and faster, throw them on top of the other until we have applied enough energy to overcome the powerful nuclear power. It's like rolling a really heavy rock up a really steep hill. The heavier the element you want to create, the steeper the hill. This process produces elements with half-lives that are measured in minutes or seconds, so that we can land on an island of stability in the midst of all the other unstable combinations of subatomic particles. To create these new elements, scientists bombarded berkelium nuclei with calcium ions until they produced six atoms of element 117. They then watched as each atom moved its alpha-decay chain into the daughter isotopes of atom 115 and 113. Although Element 117 has a half-life of less than one second, a total of 11 different steps have been observed in the decay chain, which Russian researchers believe are direct evidence of the island of stability. In a separate project that has been running since 2006, the Dubna contingent isolated element 118: ununoctium. The isolation of element 118 and its subsidiary isotope opens the door to new insights into chemistry and quantum mechanics. We don't really know why there are some relatively more stable isotopes of heavy elements; Experiments like this bring the theory up to date with observations, although they are only indirect measurements of the atomic numbers, since what the researchers actually observed was alpha decay – the release of two protons and two neutrons (resulting in a helium atom). For example, unseptium may not behave like other elements in its group. It is expected to be a halogen as it is in the same group (column) as the other halogens – but scientists are already speculating that the chemistry of the unseptium could be unique. With such large atomic sizes, the VSEPR theory cannot stand up, which could mean that the assumptions of molecular geometry need to be reconsidered. And such large atoms force the inclusion of relativistic effects. That's the that at these extremes of mass, one either ends up with neutronium, or the atoms are so large that the distance-dependent strong nuclear force begins to lose to the weak nuclear power — which means that the atom, instead of trying to hold itself together, tries to tear itself apart. Tear. Announcement brings the count to six new elements discovered for the Russian team. No word yet on whether Tom Lehrer will change his song. Last updated on November 4, 2020 Are you someone who likes to grow? Are you constantly trying to improve and get better? If you do that, then we have something in common. I am very passionate about personal growth. It was only 4 years ago when I discovered that I discovered my passion for growing and helped others grow. I was 22 at the time and in my last year of study. As I pondered the meaning of life, I realized that there was nothing more meaningful than pursuing a life of development and improvement. By improving ourselves that we can get the best out of life. After a year and a half of actively pursuing growth and helping others grow through my personal development blog, I realize that there is never an end to the journey of self-improvement. The more I grow, the more I realize that there is so much I don't know, so much that I have to learn. Sure, there is always something about ourselves that we can improve. The human potential is limitless, so it is impossible to reach a point without growth. Whenever we think we are good, we can be even better. As a passionate advocate of growth, I am constantly looking for ways to improve myself. I've put together 42 of my best tips that could help you on your personal growth journey. Some of them are simple steps that you can engage immediately. Some are larger steps that require deliberate efforts to act. Here they are:1. Read a book every day. Books are concentrated sources of wisdom. The more books they read, the more wisdom you expose yourself to. What books can you read to enrich yourself? Some books I've read and found useful are Think and Grow Rich, Who Moved My Cheese, 7 Habits, The Science of Getting Rich and Living the 80/20 Way. If you read a book every day, you'll feed your brain with more and more knowledge. Here are 5 really good books to read about self-improvement:2. Learn a new language. As Singaporean Chinese, my main languages are English, Mandarin and Hokkien (a Chinese dialect). Out of interest, I have taken language courses such as Japanese and Bahasa Indonesian in recent years. I realized that learning a language is a whole new skill, and the process of learning a new language and culture is a completely mind-opening experience.3. Get a new hobby. Is there anything new that you can pick up beyond your usual favorite hobbies? Each new that you can learn? Examples are fencing, golf, climbing, football, canoeing or ice skating. Your new hobby can also be a leisure hobby. For example, ceramics, Italian cuisine, dancing, wine appreciation, web design, etc. To learn something new, you need to stretch in different aspects, whether physical, mental, or emotional. Here are Hobbies that will make you smarter and happier 4. Take a new course. Is there a new course you can join? Courses are a great way to acquire new knowledge and skills. It doesn't have to be a long-term course – seminars or workshops also serve their purpose. I've been to a few workshops and they've helped me gain new insights that I hadn't considered before. In fact, anyone who wants to be an intelligent learner should take this 20-minute COST LOSeN course: Spark Your Learning Genius. It will help you to recharge your learning ability and get every skill faster!5. Create an inspiring space. Your surroundings will set the mood and tone for you. If you live in an inspiring environment, you will be inspired every day. I used to not like my room at all because I thought it was messy and boring. A few years ago, I decided this was the end – I started a Mega Room Revamp project and overhauled my room. The end result? A space where I love being and inspiring myself to be at my peak every day. Photo credit: Source6. Overcome your fears. We are all afraid. Fear of insecurity, fear of public speaking, fear of risks... All our fears keep us in the same position and prevent us from growing. Recognize that your fears reflect areas where you can grow. I always think of fear as a compass for growth. When I'm afraid of something, it's something I still need to address, and addressing it helps me grow. Learn how to overcome your irrational fears (which prevents them from succeeding).7. Align your skills. If you've ever played video games, especially RPGs, you know the concept of leveling – gaining experience so you can be better and stronger. As a blogger in teØer naprosen. I constantly level up my writing skills. As a speaker in a teen way, I constantly level my capacity for public engagement. What skills can you upgrade?8. Wake up early. Waking up early (e.g. 5-6 o'clock) has been recognized by many (Anthony Robbins, Robin Sharma, among others self-help gurus) to improve your productivity and quality of life. I feel like it's because if you wake up early, your mindset is already set to continue the momentum and proactively live out the day. Not sure how to wake up early and feel energetic? These ideas help:How to be motivated and be happy every day when you wake up9. Do you have a weekly it starts better with being in a better physical condition. Personally, I make it to a point, jogging at least 3 times a week, at least 30 minutes each time. You might want to enmitte it with jogging, gymnastics lessons and swimming for variation. Check out these 15 tips to restart the Habit exercise (and how to keep it). Photo credit: Source10. Start your life manual. A life manual is an idea That I started 3 years ago. Basically, it's a book that contains the essentials of how to to the fullest, such as your purpose, your values and goals. Sort like your guide for your life. I've started my life manual since 2007, and it was a critical enabler for my progress.11 Write a letter to your future self. What do you see in 5 years? Will you be the same? Different? What kind of person will you be? Write a letter to your future self—a year later will be a good start—and seal it. Create a date in your calendar to open it in 1 year. Then start working to become the person you want to open this letter.12. Get out of your comfort zone. Real growth comes with hard work and sweat. Being too comfortable does not help us to grow, it makes us stagnate. What is your comfort zone? Do you stay most of the time? Do you stick to your own space when you're traveling with other people? Shake up your routine. Do something else. By exposing yourself to a new context, you literally grow as you learn to act in new circumstances.13. Put someone on a challenge.Competition is one of the best ways to grow. Take on a challenge (weight loss, exercise, financial challenge, etc.) and compete with an interested friend to see who reaches the goal first. Through the process, you will both win more than if you were to go to the finish line alone.14. Identify your blind spots. Scientifically, blind spots refer to areas that our eyes cannot see. In personal development, blind spots are things about ourselves that we don't know. The discovery of our blind spots helps us to discover our areas of improvement. One exercise I use to discover my blind spots is to identify all the things/events/people that trigger me in one day – trigger means that I feel annoyed/weird/affected. These represent my blind spots. It's always fun to do the exercise because I discover new things about myself, even though I might already think I know my own blind spots (but then they wouldn't be blind spots? After that, I'm working on steps to address them.15 Ask for feedback. As much as we try to improve, we will always have blind spots. The request for feedback gives us an additional perspective. Some people who are approaching will be friends, family, colleagues, bosses or even acquaintances, as they have no preset bias and can give their feedback objectively. Learn more about how to ask for feedback and learn quickly!16. Stay focused with to-do lists. I my day with a list of tasks I want to complete, and that helps me stay focused. By comparison, the days when I don't do that are extremely unproductive. For example, part of my to-do list for today is to write a guest post on LifeHack.Org, and that's why I'm writing this now! Since my work requires that I use my computer all the time, I use Free Sticky Notes to manage my to-do lists. It's really easy to use and it's a freeware, so I recommend you check it out Set Big Hairy Audacious Goals (BHAGs). I'm a big fan of the attitude of BHAGs. BHAGs stretch beyond your normal capacity because they are big and bold – you wouldn't think about trying them normally. What are BHAGs that you can start making you feel absolutely in the world once you've completed them? Set it and start working. Learn how to use SMART Goal to become very successful in life.18. Confirm your mistakes. Everyone has mistakes. The most important thing is to understand, acknowledge and address them. What do you think are your mistakes? What errors can you work on now? How do you want to address them?19. Do you take action. The best way to learn and improve is to take action. What does you mean to you what you want to do? How can you do this immediately? Waiting doesn't matter. When you take action, you get immediate results from which you can learn.20. Learn from people who inspire you. Think of people who admire. These people reflect certain qualities that you want to have for yourself. What are the qualities in them that you want for yourself? How can you acquire these qualities?21. End a bad habit. Are there bad habits you can lose? Overslept? Don't train? Too late? Slouching? Nail biting? Smoking? Here are some good advice from Lifehack CEO about hacking your habit loop to break bad habits and build good ones: how to make a Habit and Hack the Habit Loop22. Cultivate a new habit. Some good new habits to cultivate are reading books (#1), waking up early (#8), practicing (#9), reading a new article on personal development on the day (#40) and meditating. Is there another new habit that you can cultivate to improve yourself? If you are wondering how to stick good habits, check out these tips:18 tricks to make new habits Stick23. Avoid negative people. Jim Rohn says: You are the average of the 5 people you spend most of your time with. Wherever we go, there will inevitably be negative people. Don't spend too much time around them if you feel like they're dragging you down. Not sure who the poisonous people in life are? This article can help you:10 Toxic Individuals You Should Just Get Rid of 24. Learn to Deal With Difficult People. There are times when there are difficult people you can't avoid, e.B. at your workplace, or when the person is part of your inner circle of contact. These human resources management skills will go a big part in working with people in the future:How To Deal With Negative People25. Learn from your friends. Everyone has amazing qualities in them. It's because of how we want to tap them. With all the friends around you, they will have things to learn from. Try to think of a good friend now. Think of just one quality you have that you want to adopt. How can you learn from them and use this ability for when you need it. Surely they will be more than happy to help!26. Start a journal. Journaling is a great way to gain a better self-confidence. It is a process of self-reflection. As you write, clarify your thought process, and read what you've written from a third-party perspective, you gain more insight into yourself. Your journal can be private or an online blog. I also use my personal development blog as a personal diary and learned a lot about me in the past year of blogging.27. Start a blog about personal development. To help others grow, you need to have the conversation first. There are expectations of yourself, both of yourself and of others, that you must sustain. I run The Personal Excellence Blog, where I share my personal journey and insights into how I can lead a better life. Readers look at my articles to improve, which forces me to continue to improve, for myself and for the people I speak to. Get a mentor or coach. There is no quicker way to improve than to let someone work with you on your goals. Many of my clients approach me to coach them in their goals and they achieve significantly more results than if they had worked alone. If you're looking for a mentor, don't miss these tips:What you should be looking for in a good mentor29. Reduce the time you spend on chat programs. I realized that chat programs are open by default, resulting in a lot of wasted time. This time can be spent much better on other activities. The days when I'm not in chat, I'm going to do a lot more. I usually turn off the automatic startup option in the chat programs and start it when I want to chat and really have the time.30. Learn chess (or any strategy game). I found chess is a great game to learn strategy and improve your intelligence. Not only do you have fun, you can also train your analytical skills. You can also learn strategy from other board games or computer games, such as Othello, Chinese Chess, WarCraft, and so on.31. Stop watching TV. I haven't watched TV for quite 4 years and it was a very liberating experience. (Here are 10 reasons to turn off your TV) I realized that most programs and ads on mainstream TV are usually of lower awareness and not very empowering. In return, the time I have set aside from non-television is now being used constructively for other purposes, such as .B. Friends, the time I enjoy, training etc. Start a 30-day challenge. Set yourself a goal and give yourself 30 days to achieve this. Your goal may be to use a new habit or something you've always wanted, but don't have.30 days is just enough time to set strategy, plan, action, check and nail the goal.33. Meditate.Meditation helps to calm you down and be more conscious. I also realized that I need less sleep on the nights when I meditate (before I sleep), that the Clearing process is very liberating. Try this 5-minute meditation guide: Anywhere, Anytime.34. Join Toastmasters (Learn to speak in public). Interestingly, public speaking is the #1 fear in the world, with #2 deadly. After speaking publicly as a personal development speaker/trainer, I learned a lot about how to communicate better, present myself and engage people. Toastmasters is an international organization that trains people in public speaking. Check out the Toastmaster clubs near you here.35. Befriend top people in their fields. These people have achieved their results because they have the right attitudes, skills and know-how. How better can you learn than from the people who were there and did that? Gain new insights into how to improve and achieve the same results.36. Let go of the past. Are there any grievances or dissatisfaction from the past that you stuck to? If so, it's time to let go. If you hold on to them, you can't move on and become a better person. Detach yourself from the past, forgive yourself, and move on. Only recently I finally passed away from an earlier heartache of 5 years ago. The effect was liberating and very empowering, and I've never been happier.37 Start a business. Is there anything you're interested in? Why not turn it into a venture and make money while learning at the same time? Starting a new business requires you to learn business management skills, have business-oriented skills, and have a competitive advantage. The process of establishing and developing my personal development business has provided me with many skills, such as self-discipline, leadership, organization and management.38. Show kindness to the people around you. You can never be too friendly to someone. In fact, most of us don't show enough kindness to the people around us. Being kind helps us cultivate other qualities such as compassion, patience, and love. When you return to your day later after reading this article, you begin to bring more kindness to the people around you and see how they react. Not only that, notice how you feel, how you behave kindly to others. Chances are, they'll feel even better than you.39 Access the people you hate. If you ever stand for something, you're going to get haters. It is easy to hate the people who hate us. It's much harder to get them back Love. To be able to forgive, let go and show love requires generosity and an open heart. Is there anyone who doesn't like or hate you in your life? If so, contact them. Show them love. Find a solution and close the grievances in the past. Even if they refuse to retaliate, you still love them. It's much more liberating than hating them back. Take a break. Have you worked too hard? Self-improvement is also about recognising that we need to take a break in order to Before. You can't drive a car if it doesn't have gasoline. Planning time for yourself is important. Take a break each week. Relax, rejuvenate and recharge for what lies ahead.41. Read at least 1 personal development article per day. Some of my readers make it a point to read at least one personal development article every day, which I think is a great habit. There are many great personal development blogs out there, some of which you can check here.42. Commit to your personal growth. I can write list articles with 10 ways, 25 ways, 42 ways to improve yourself, but if you don't intend to commit to your personal growth, it doesn't matter what I'm writing. Nothing will get through. We are responsible for our personal growth, not for anyone else. Not your mother, your father, your friend, me or Lifehack. Choose your personal growth and embrace a lifelong journey of growth and change. Start your growth by selecting and working on a few of the above steps. The results may not be immediate, but I promise you that as long as you stick to it, you begin to see positive changes in yourself and in your life. So here you are, 43 solid ways to self-improvement. Choose one or a few to do today. If you want to improve yourself, you need to take some action. More self-improvement tipsFeatured Photocredit: Unsplash via unsplash.com unsplash.com