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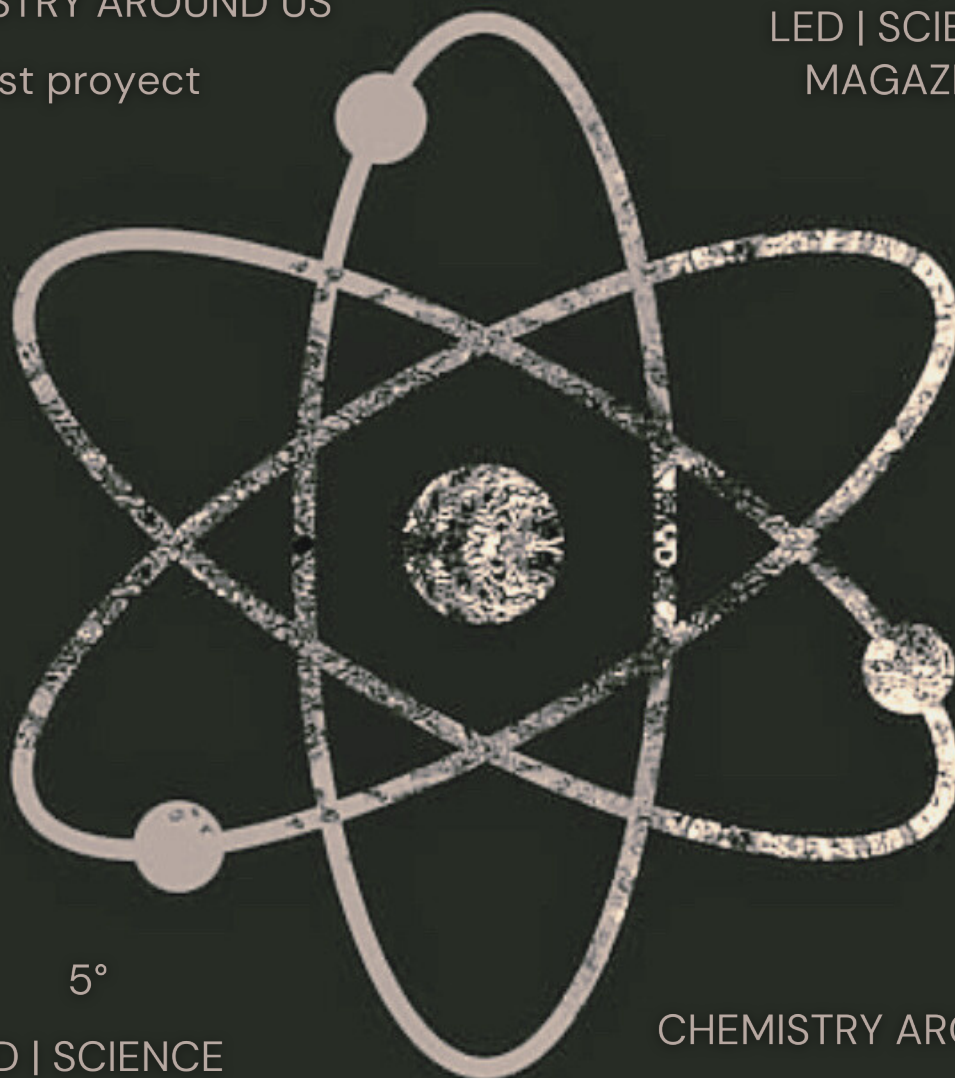
MAY

THE REACTION

CHEMISTRY AROUND US

6st proyect

5°
LED | SCIENCE
MAGAZINE



5°
LED | SCIENCE
MAGAZINE

CHEMISTRY AROUND US
6st proyect



COLEGIO LOS NOGALES

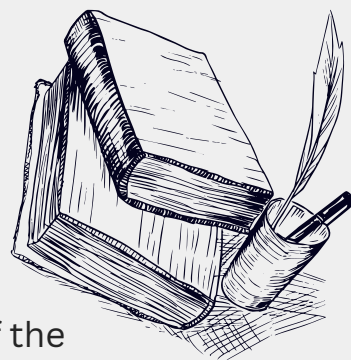


COLEGIO LOS NOGALES



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INTRODUCTION



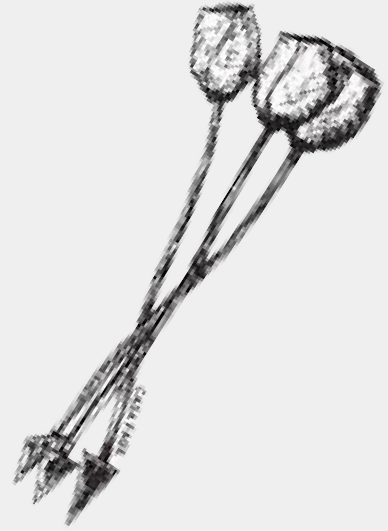
Welcome to our class magazine, a group tour of the fascinating work of chemistry. For the past month and a half we have examined elements, reactions and history that build the science of elements we know today. This magazine is a compilation of various creative and informative articles for our community written by students who haven't become not only science learners but science communicators.

In these pages you will find stories from famous scientists point of view, creative poems about diverse elements, articles about chemical reactions and reflections of how science is connected to our daily lives.

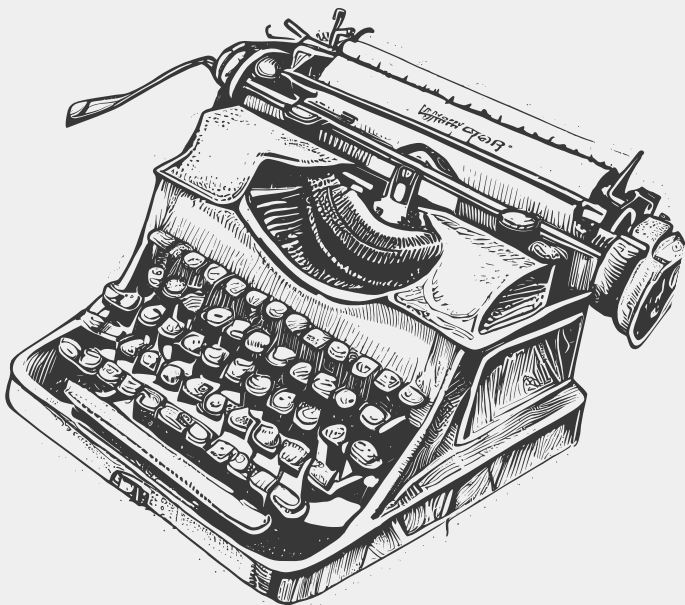
This magazine is more than a collection of our information but a proof of what happens when you mix learning with creativity, teamwork and dedication. We hope you enjoy reading it as much as we enjoyed making it.

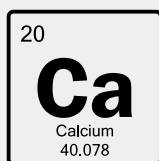
Let's jump into a chemistry adventure!





POEMS





CALCIUM

Calcium is an element so relevant,
That all creatures need it, even elephants.
It is essential to your teeth and bones,
and you can even find it in the stones.

Its texture is soft as silk,
and you can get it by drinking milk.

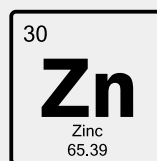
Calcium is good for your health, and it is a
shield against osteoporosis,
so make sure you take the appropriate
doses.

It is like glue that holds your tissues
together,
so it will help you live longer, but not
forever.

Calcium is very common in the Earth's
crust,
and in metal form it is found as dust.
It has many uses, like metallurgy,
construction,
and it is great for electric conduction.

Calcium is not found free in nature,
but it reacts with oxygen, hydrogen, and
other combinations.
You can find in the Bahamas, Florida and
Turkey,
and it has even been found on the planet
Mercury.
Its color is a dull gray, silvery white,
and it's as important to your health as
sunlight.

Zinc: Jeronimo Muñoz



ZINC

Zinc galvanized iron and steel. A
You make iron shine. B
So that makes me feel so real. A
And that's the beauty as time. B
You were discovered in one thousand
seven hundred forty-six. A

Since you started to be mixed. A
You are useful as a ball. B
But not as gold. B
Your color is grey. A

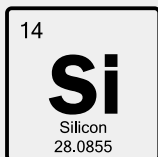
You help the immune system. B
But you are not clay. A
And also the ecosystem. B
Your atomic mass is sixty-five. A

And that helps to be alive. A
You conduct electricity. B
But not publicity. B

Your melting point is four hundred
nineteen point five. A
But that doesn't help me to drive. A
Zinc was discovered by Andreas
Marggraf. B
For that he should use a bar graph. B

Zinc : Jacobo Quintana





SILICONE

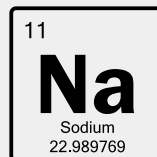
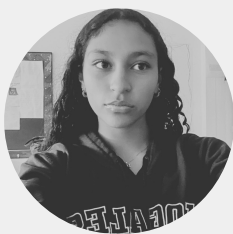
Element fourteen perfect bound,
With your four electrons free to
pair
You make bonds that shape the air
You silicate in crust and clay
But in the cleanrooms like a
butterfly you fly away

you're in the carbons group
And you always reboot
You switch, compute, and power
through light and speed
The quite engine of our need

No flash no flame no loud clame
Yet everybody recalls your name
While you're not considered an
essential element
For bones you're the perfect
supplement

Always standing alone
Reminds me of silicone
Jacob berzelius
You're great like general tullius
Si, Even tho you're number
fourteen
Your always in my lucky team.
Silicone,
you're as great as a sapphire
stone

Silicone: Isabella Mantilla



SODIUM

1. My name sodium
2. And I'm in the Podium
3. The Best element you could have
ever seen
4. Cause I'm a conductor of electricity

1. My Atomic number is 11
2 Be aware I can take you To heaven
3 I'm like a can
4 Silver As Pan

1 I'm as solid
2. As the top lid
3 of moli kid
4. very solid

I My boiling Point 883
2 maybe 3
3 can change my explosivity and
radioactivity
4 so that all about me
5 thanks to Humphrey Davy

Sodium: Antonella Fonnegra





ARTICLES



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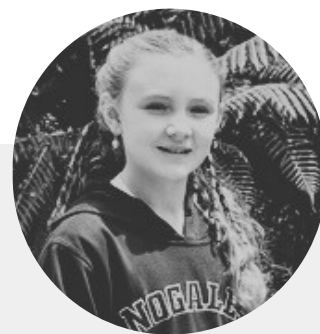
otbridge. T

WHAT ARE SOME CHEMICAL REACTIONS IN CLEANING AND COOKING?

BY ADELAIDA FORERO

Have you ever wondered if in the things we cook or we clean with, work with chemical reactions? There are a lot of things that work with chemical reactions in cooking or cleaning, such as elements, tools, material ingredients or chemicals. Many of your household everyday activities include chemical reactions. All of these can help you clean faster, more efficient and effectively, and learn about how the ingredients or materials in cooking or cleaning work. Also, what different chemicals and ingredients can create a variety of different types of reactions. If you know all of these reactions and materials you can make your kitchen a chemistry lab. Learning about chemistry and chemical reactions can make many of your common household tasks easier in your everyday life.

What are some reactions, materials, tools and ingredients in cooking that can cause chemical reactions? The most common reactions in cooking are; fermentation, Maillard reaction, combustion, caramelization, gluten formation, pyrolysis, acid based reaction, protein denatured, emulsification and carbonization. Fermentation is a reaction that works with bacteria, used a long time ago to make things like alcoholic beverages or kombucha. The Maillard reaction is when amino acids and reducing sugars are in high temperatures, which creates things like seared steaks or crispy crusts. Combustion reaction when a substance and an oxidant combine quickly in high temperatures, it's like using a stove when you are cooking something. Caramelization happens when sugars are heated in high temperatures, it's like the Maillard reactions, but without proteins. Gluten formation is when glutenin and gliadin are mixed with water, making things like bread, pasta or beer. Pyrolysis is when high heat breaks down substances, creating a rich flavor in the foods, one example is caramelized onions. Acid-based reactions are when any acids like lemon or vinegar can soften foods full of proteins. Emulsification is when two liquids that can't be mixed, like water and oil, are mixed together to create foods like mayonnaise. Last, carbonization is when organic things are heated in high temperatures where there is no oxygen. All these reactions change the way you cook different foods, and can affect the results. Also, there are some tools made out of different materials that can cause chemical reactions in cooking. These materials are aluminum, copper, stainless steel, cast iron and non-stick cookware. All of these materials in your tools can affect the food in different ways when you cook in it, with varying conditions and results. These reactions and materials can change the way you cook something and can create different results in your food.



Taken from Tapir .edu.co

In cleaning chemicals there are many that help in different ways and have different purposes for cleaning, but sometimes the wrong mixes of chemicals can be dangerous for other people or even affect the indoor air quality. Some of the mixes of chemicals when cleaning can cause respiratory problems like asthma, or cause various effects on indoor air quality. It can also produce allergens and other problems to people. The chemicals exposed to indoor air can reduce its quality and be dangerous for people who breathe it. All these effects can happen if there is a wrong mix of cleaning chemicals, which cause different reactions that can result in danger. In cleaning each chemical can cause different reactions. Some of the key components dangerous for other people or even affect the indoor air quality. Some of the mixes of chemicals when cleaning can cause respiratory problems like asthma, or cause various effects on indoor air quality. It can also produce allergens and other problems to people. The chemicals exposed to indoor air can reduce its quality and be dangerous for people who breathe it. All these effects can happen if there is a wrong mix of cleaning chemicals, which cause different reactions that can result in danger. In cleaning each chemical can cause different reactions. Some of the key components include surfactants that reduce surface tension, acids and bases that break down stains and mineral deposits, and antimicrobial agents like bleach and alcohols that kill bacteria and viruses. Acids help in dissolving mineral deposits and rust, these are in vinegar and citrus, antimicrobial agents use oxidation reduction reactions to neutralize pathogens, these destroy the cell wall of bacteria and viruses, and solvents dissolve grease, oils and solid soils, which help surfactants. These are some chemicals that can affect the way you clean by making different types of results with each of the chemicals you clean with.

There are different materials in common household activities that can affect the way you clean or cook in different ways. In cleaning there are mostly five chemicals that create different effects in what you clean. These are

BY ADELAIDA FORERO

alcohols, chlorine dioxide, hydrogen peroxide and peracetic acid and quaternary ammonium compounds. Alcohol can be used for killing bacteria, Isopropanol is better for killing noroviruses, but Ethanol has broad virucidal properties. Chlorine Dioxide is a disinfecting agent, it's unstable as a gas and most selective oxidant, and it reacts only with reduced sulfur. Hydrogen peroxide and peracetic acid are strong oxidants that can be potent broad-spectrum germicides, they are safer than chlorine. They can also be corrosive to metals such as aluminum or copper, it can disinfect surfaces between 30 seconds to a minute. Quaternary ammonium compounds are used to disinfect concentration, this is not effective with spores and it's not as effective with noroviruses. These chemicals help with different conditions and can make the product different from the others. In cooking you can use chemical reactions in many different ways. There are foods like acidic that can tenderize proteins and put some flavor in the meat or bases that react with acids to make gas bubbles that leaven dough and it can neutralize the taste of acids. Also, there are a lot of processes including the Maillard reaction, pyrolysis and fermentation that can affect some conditions in food. These and many more things can affect the food you cook in many different ways. You can make your food more tasty and flavorful using all of these chemical reactions that many people use without knowing it. When you clean or cook you probably have no idea of all the chemicals and reactions behind the result, but it helps a lot to understand all of them. All these reactions work with chemicals, different foods or ingredients to create various effects in the results.

There are a lot of chemical reactions that you can use in common household activities. With these reactions you can affect the results when cooking or cleaning. The reactions include different ingredients, materials, tools, chemicals and foods that can affect the outcome of what you clean or cook. In cooking, there are some reactions like combustion or pyrolysis that can change different aspects of the food. There's also different materials in the cooking tools that can affect the food when you cook it by changing a color or leaving a metallic taste. In cleaning some mixes of chemicals can be dangerous and affect the indoor air quality. In cleaning they're also chemicals with different properties and purposes that can change the way it cleans. Also, other chemicals like alcohol or chlorine dioxide can affect the result of what you clean. Finally, you can use many chemical reactions in cooking to make your food more tasty and easier to cook. All of these reactions help you understand how many things in cooking or cleaning work, and how you can use all of these while cooking or cleaning.



WHY DO SOME SUBSTANCES REACT WITH EACH OTHER WHILE OTHER DON'T?

BY FELIPE MARTINEZ

These is an article about why do some substances react with each other, while others do not react. Also what is a reaction, and also how do the reactions work. These article is written, for explaining why do some substances react with each other and why These are others that don't react. Discuss why the topic is important: These topic can be importante, so for example like in an experiment, so we can know what substances can react with each other, and what substances can not react with each other. And also because we can learn what is a reaction, and also what causes the reaction. These topic can be importante, so for example like in an experiment, so we can know what substances can react with each other, and what substances can not react with each other. And also because we can learn what is a reaction, and also what causes the reaction.

What substances can react with each other and how do it work. A chemical change occurs when two substances that are mixed together, transform into a third substance. In a chemical reaction the atoms and the molecules interact with each other and it causes a reaction. The reaction works when the bonds between atoms in the reactant are broken. In a chemical reaction, reactants contact each other, bonds between atoms in the reactants are broken. In a chemical change no new atoms are created, and no atoms are destroyed. The atoms and the moléculas gen together and it cause the reaction. These atoms rearrange and form new bonds to create the product. In a chemical reaction, only the atoms present in the reactants can end up in the product. The product is when the bonos broke and that causes a chemical reaction. Not all substances react chemically when mixed together.

What is a reaction and what causes it. A chemical reaction is a process in which one or more substance. Reactants are converted to one or more different substances, known as products. Chemical reactions involve interaction between chemicals such that all reactants are changed into new materials. The properties of the new materials are different from those of the reactants. A reaction with a process in which one or more substances, the reactants, are converted to one or more different substances, the products.

Chemical reactions involve breaking chemical bonds between reactant molecules and forming new bonds between atoms in product particles. A chemical reaction rearranges the constituent atoms of the reactants to create different substances as products.

A chemical reaction is caused because, when atoms and moléculas are combines the bond broke and it causes a chemical reaction. The number of atoms before and after the chemical change is the same but the number of molecules will change. That is because when the bond broke tje moléculas also are breken.

What type of substances do not react with each othe. Substances that generally do not react with each other are called noble gases. These elements, found in Group 18 of the periodic table, include helium, neon, argon, krypton, xenon, and radon. The noble gases are the ones that make up Group O of the periodic table, helium, neon, argon, krypton, xenon, and radon. The noble gases are the chemical elements in group 8A, on the right side of the periodic table: helium, neon, argon, krypton, xenon, and radon. Six elemental gases are composed of such exceptionally stable

atoms that they almost never react with other elements.

That is because, usualy atoms only react with molecules, and not with the elements. The noble gases are also known as inert gases since they are not usually reactive during most chemical reactions. So that is why the noble gases normaly don't interact with atoms and it dosent maje a chemical reaction. The noble gases full electron shells make the inert gases highly unreactive except under extreme heat and pressure. The noble gases have very low melting and boiling points. In conclution. These are some substances that react with each other. Because when the molecules and atoms are interacting the bonos between them are broken and that causes the reaction. The reactions are caused because of the interacción between atoms and molecules. And you need two substances that interact with each othe and it end up in a chemical reaction. These are some substances that do not react with each other. One e amplíe of it is the nobke gases, the y don't react because the y are also known as inert gases since theyare not usually reactive during maste chemical reactions. Now that you read this you can pay more atention, for e amplíe when you cook and some times with some ingredientes, they have a chemical reaction..



Taken from Tapir.edu.co

WHY DO SUBSTANCES REACT?

BY EMILIO MATIZ



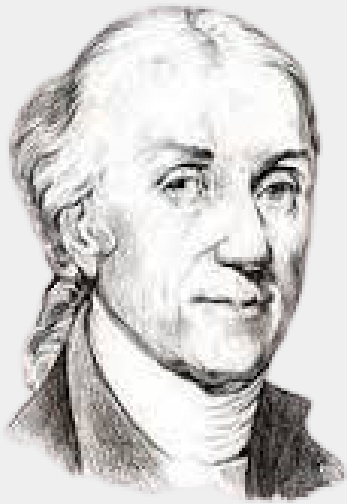
Taken from Tapir.edu.co

A substance is a physical material from which something is made or which has discrete existence. Well, if you don't know this you have to read this article, it is very important that you know. But if you already know what this is, read it because maybe you don't have a clear idea what this is, so anyways read it. In this article we are going to be talking about the characteristics of the substances and the chemical reactions, and if they involve variables. This article is being written because we are discovering new things that can serve us for the future. So if you are a person that wants to be a scientist, read this. Every substance has different characteristics. The concept of substance is a philosophical term of art. The philosophical term "substance" comes from an early Latin translation of the Greek ousia. Ousia is a noun derived from the verb "einaí" (to be) and is naturally translated "being", did you know that? The idea of substance has its first theoretical articulation in Aristotle's Categories. Where he distinguishes between individual substances, such as a man or a horse, and the various kinds of properties they can possess, such as being five foot, white, lying down, or in the Lyceum. Another way to say substance can be Essence. The pancreas secretes a substance called insulin. Forms are Plato's substances, for everything derives its existence from Forms. In addition to distinguishing substances from properties, Aristotle also distinguishes substances from events.

Chemical reaction, a process in which one or more substances, the reactants, are converted to one or more different substances, the products. A chemical reaction rearranges the constituent atoms of the reactants to create different substances as products. Chemical reactions had a primary role in defining the science of chemistry, as it is known today. Chemical reactions are the processes by which chemicals interact to form new chemicals with different compositions. The concept of a chemical reaction dates back about 250 years. A chemical reaction is typically represented by a chemical equation, which represents the change from reactants to products. A reaction might take the following form: $A(aq)+B(g)\rightarrow C(s)+D(l)$. The number of atoms of each element must be equal on both sides of the equation. Chemical reactions are constantly occurring in the world around us. Chemical reactions are the processes by which chemicals interact to form new chemicals with different compositions. Each product and reactant must be written using its chemical formula. How chemicals react is dictated by the chemical properties of the element or compound- the ways in which a compound or element undergoes changes in composition.

Several factors can influence the rate of a chemical reaction. These include temperature, concentration, surface area, presence of a catalyst, and the nature of the reactants. Higher temperatures generally lead to faster reactions as molecules move faster and collide more frequently with greater energy, increasing the likelihood of a reaction. This rapid oxidation is called burning. Higher concentrations of reactants mean more particles are present, increasing the frequency of collisions and thus the rate of reaction. Some substances are inherently more reactive and will react faster under the same conditions. The inherent reactivity of the substances involved in a reaction plays a very crucial role. Catalysts are substances that speed up a reaction without being consumed themselves. They provide an alternative reaction pathway with a lower activation energy. For reactions involving solids, a larger surface area exposed provides more contact points for reactants, increasing the reaction rate. A single element replaces a similar element of an adjacent reactant compound. A single element or compound combines with oxygen gas releasing energy.

A chemical reaction is a process in which one or more substances, the reactants, are converted to one or more different substances, the products. It can involve variables that are temperature, concentration, surface area, presence of a catalyst, and the nature of the reactants. The variables are important because they help scientists understand, control, and predict the future. Variables like temperature, concentration, pressure, and catalysts need to be controlled so the reaction can be repeated with the same results. Other variables, like pressure or concentration, if not properly managed, can lead to dangerous situations such as explosions or toxic releases. In conclusion, variables are key to understanding, controlling, and safely conducting chemical reactions.



DESCRIPTIVES



BY FILIPA GAVIRIA

I will never forget when I realized my theory, it was amazing it was like a boom inside my head. It was 1811 in Turin Italy, it was a rainy night. After hours of studying on my wooden desk with leaks on my roof I had realized that equal volumes of gases, at the same temperature and pressure, contain an equal number of molecules w were confused as bees without stings. After all those years of studying how gases work I looked at how gases change when they are heated, cooled, or squeezed to understand their behavior. I also used ideas from other scientists like Dalton and Gay-Lussac, but noticed some things didn't make sense. So I investigated and came up with something better and clearer. Then using math to show that gases must be made of lots of tiny molecules and that equal volumes have the same number if conditions are the same.

For the last few years I had not discovered anything but finally all my hard work had paid off.then I keeper studying and became it a law of science . My knowledge bloomed like a flower every time learning something new.

When my law was created I was flabbergasted this was a dream come true.



Taken from
Tapir.edu.co

BY ALEJANDRO BERNAL CABEZAS

I, an important scientist who developed the Phlogiston theory. I will never forget that days in 1667 spent in that laboratory. Writing in my wooden desk that book that represents my work and point of view of the phlogiston theory. The Physica Subterranea I remember that name like it is my name. I always write all my ideas of the things burning and what they're made of. I remember my experiments like it was yesterday. I thought that when something burns, it gives off an invisible substance that makes fire happen. I called it the Terra pinguin. I had a great Phlogiston theory proved with my experiments and my work. Inspiring my students to learn more about the phlogiston theory. Georg Stahl liked my ideas and made them better. Stahl, a student of mine, gave the "fire stuff" a new name phlogiston. My idea became very popular for many years, even though it turned out to be wrong later. My work has helped a lot for chemistry.



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BY MARÍA CAMILA RIASCOS

In my life as a scientist and experimenter I make many discoveries that contribute to scientists and chemistry. Whenever I (Henry Canvendish) make a new discovery or experiment it's feels like openenig new doors for discovery.

As a scientist the discover of hydrogen, from the composition of water to the experiment of the earth density and much more experiments, I make notable discoveries to scientist and chemistry's. In many important studies people recognize me for discovering Hydrogen on of the most knows element on the periodic table. Focusing on it: the discovery of hydrogen or in other words "Inflammable gas" as the I called it on the moment; I achieve three important things for its development, as experimenting with metal gasses, observing the gasses and testing them. All the process were brightly engaging and amazing. My passion for chemistry was so intense with only words I can't describe it. One of my most important discoveries was hydrogen and in every part of the process or its creation, in every single step it was magical. Every second was feel with knowledge.

Discoveries of things, determinating composition and density make a big mark not only on my life, also in chemistriy's one. I never imagined that my discoveries would be so famous one day, but yes, there where!



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TIME LINE

BY: JUAN SIMÓN BERNAL & MARÍA CAMILA RIASCOS



- 1 Date - 3000 BCE-332 BCE
Names - Ramses, Imhotep
Event - Battle of Kadesh
Persian Conquest
metallurgy, embalming,
glassmaking, medicine and
groundwork for future
advancements.
Egypt was ruled by a pharaoh
that was considered a living god.
- 2 Year - In century-discover
mercury
colithu era 7000-4000 BCE
silver gold - many more elements
discover hundreds, 500 BCE -
neolithic periods - smelting
Bronze - Iron age
Wentist: practically men
interested in jewelry -
appeals / aunts:
events.
- 3 Year - sixth century BC
Name - Anaximander
Event - He was the first to
argue that these were the
four elements. To be more
exact, Anaximander that there
were opposite out of which
everything was made, hot,
cold, dry and moist
- 4 Year - c.500 BCE - 30 BCE
Name - Democritus (c.400
BCE)
Event - Introduce the concept
of atoms, as the smallest unit
of matter
2. Greek and Hellenistic
Contributions: from Philosophy
to
science
- 5 Year - 7, 8, 12, 17th
century
Name - The alchemist
Event - He discovered
something
- 6 Year - 1579 - 1644
Name -
Johann Baptista van
Helmont
Event - He is a man
half alchemist and half
chemist

7 Year - 1660 - 1734

Name - Johanna Becher

Events - Becher has every important for chemistry



8 Year - 1627 - 1691

Name - Robert Boyle

Event - Boyle refused to what Aristide Saim and Keeline on atoms and proves that he was right



10 Year - 1731 - 1810

Name - Henry Cavendish

Event - He did the famous experiment about the inflammable air



9 Year - 1743-1793

Name - Antoine Lavoisier

Event - gets arrested in November 14 1793, Gets executed on May 8 1794



11 Year - 7, 8, 12, 17th century
Name - The alchemist
Event - He discovered selting



12 Year - C.721 - 815 CE, 854-925 CE, 980-1097CE, 8th-10th century, 1096-1291 CE, 1258 CE
Name - Jabir ibn, Al araiz, Ibn Sina
Event - The crusades, discovery of acids, Early destination, First systematic chemical nomenclature, recognition of medical chemistry

13 Year - 1743 - 1794

Name - Antoine Lavoisier

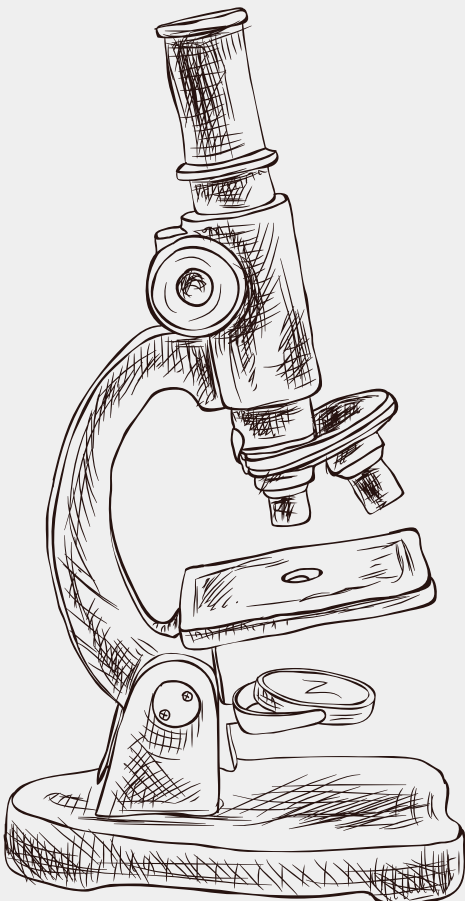
Event - He discussed that phlogiston didn't exist and discovered oxygen instead

**14** Year - 19th century

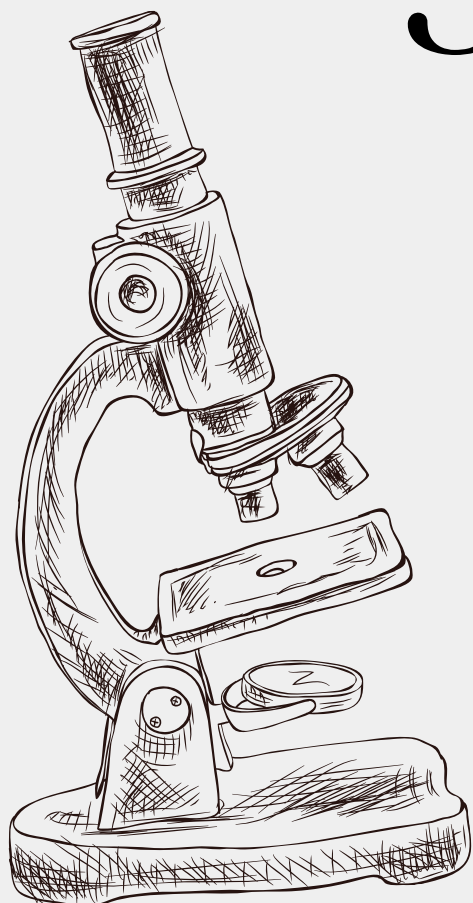
Name - Dmitri Mendeleev

Event - He created the table of elements

TIME LINE MADE BY:
MARIAM CAMILA RIASCOS &
JUAN SIMÓN BERNAL



JOKES !



**What do you call an educated tube?
A graduated cylinder!**

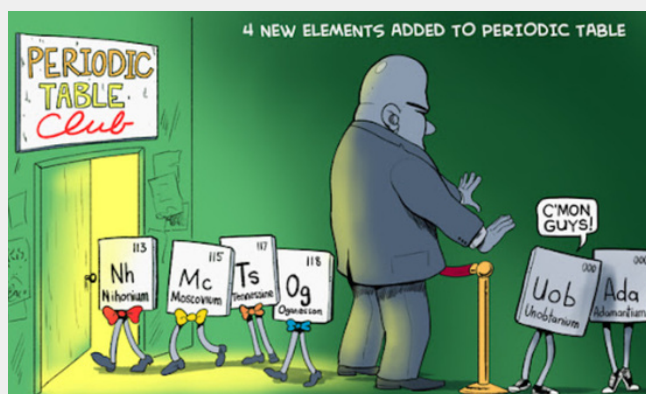
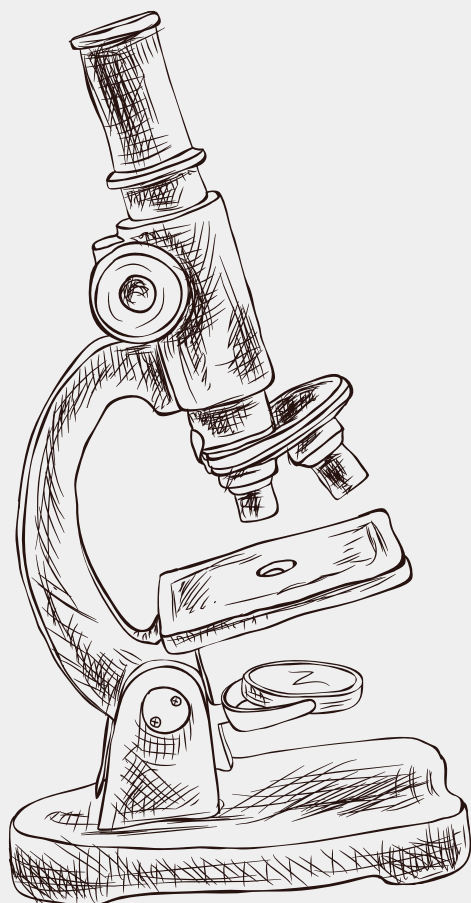
**What's the most unstable element in the
periodic table?
My mental health during finals week.**

**Why did Iron break up with Oxygen?
Because Oxygen kept seeing other
elements. Total oxidation drama.**

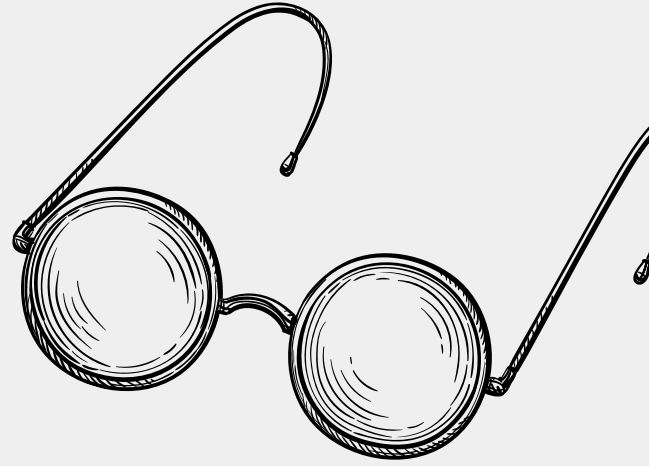
**My chemistry teacher told me I had potential.
Then he saw my grades and said, "Never mind — that
was kinetic energy leaving your future."**

**Why are chemists great at solving problems?
Because they always have solutions!**

CARTOONS !

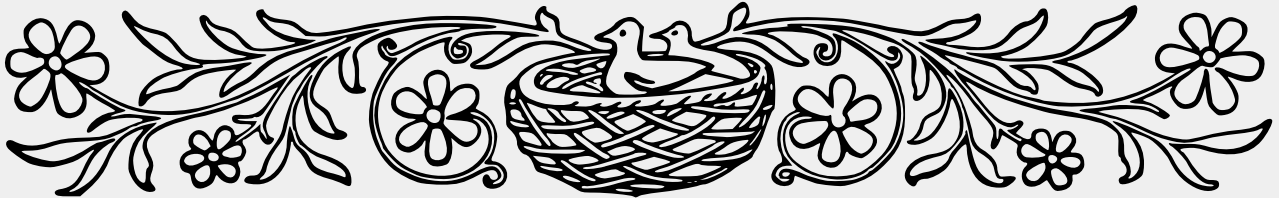


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CREDITS



**Credits**

Filipa Gaviria_____	Poem
Adelaida Forero _____	Article
Emilio Matiz_____	Poem, introduction
Felipe Martinez_____	Descriptive
Juan Simon Bernal_____	Timeline
Jeronimo Muños_____	Descriptive
Alejandro Bernal_____	Articles
Jacobo Quintana_____	Descriptives
Antonella Fonnegra_____	Poem, Covers, Titles
María Camila Riascos_____	Timeline, Photos, Covers
Isabella Mantilla_____	Descriptive, Photos

Resources

Colegio Los Nogales, Tapir, Canva, Docs, Google Translater....

Our team:

MAY



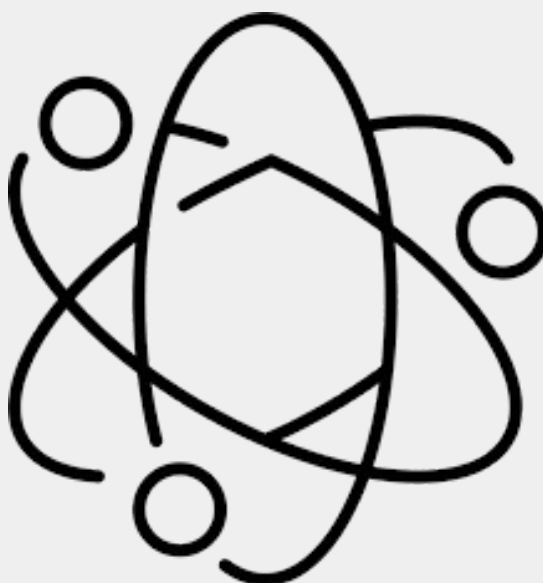
END



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Credits: Filipa Gaviria, Adelaida Forero, Alejandro Bernal,
Emilio Matiz, Felipe Martinez, Juan Simon Bernal, Jeronimo
Muños, Jacobo Quintana, Antonella Fonnegra, María Camila
Riascos & Isabella Mantilla

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