



Erasmus+



MATCHES.

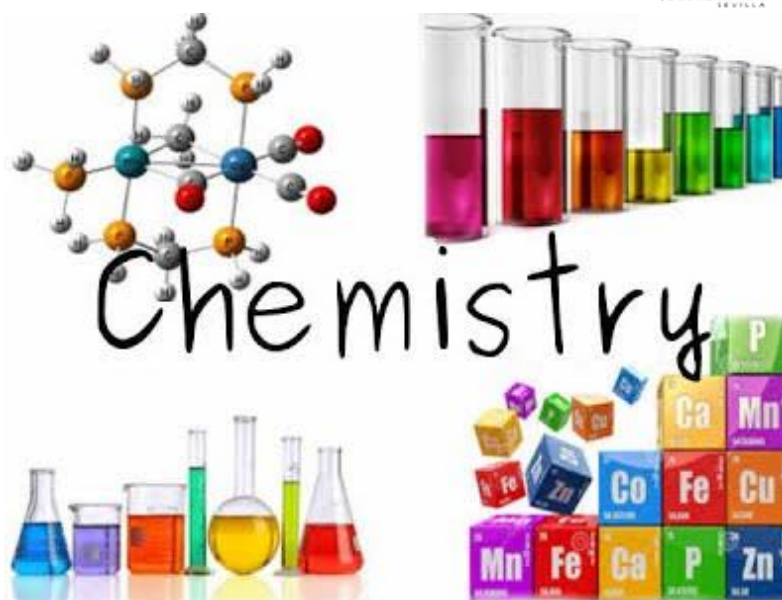
Make the chemistry sexy

What do you need to have a blast playing this game?

- To print the board game.
- To print all the category cards (you can also use coloured papers or indicate with a colour marker: red, blue, yellow and green).
- To print all the questions cards, then you have to fold in half each page: the question in one side and the answer in the other.
- To print the coloured cards for each team.
- You also need a dice and a token for each team.



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TRIVIAL GAME RULES

For this game we need a board, red cards, green cards, blue cards and yellow cards. Every colour belongs to a category.

- Red cards: matter.
- Green cards: chemical elements.
- Blue cards: chemical nomenclature.
- Yellow cards: questions about Chemistry History and Chemistry curiosities.

Besides, we need for playing a six face dice, five red cards, five green cards, five blue cards, five yellow cards and a token for every player team.

This game is played by teams about four or five members. A maximum, this game can be played by five teams.

The game board consist in a big wheel with six spokes, divided in little boxes. Every box is painted with a card colour (it is not allowed to fit two boxes with the same colour), related to a question category. There are special boxes with a dice picture. It means that the team can drop the dice again to continue playing.

The games starts from the middle of the board. One player drop the dice and chooses the spoke he goes through; then the next team asks him/her a question related to the colour of the box where he/she arrived. If their answer is right, they drop the dice again and repeat the procedure until the team fails the answer. If so, it's next team turn. If someone arrives at a box with a black dice, they drop again the dice.



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Every team should look for special boxes where, if they succeed in, they can take a colour card. Once one team manage to obtain the four different colour cards, they need to come back to the center board and they have to succeed in three from four questions, one from each category.

The team which obtain four colour cards and get right three final questions, wins the game.

Dióxido de cinc
Dioxide of zinc



Ácido telurhídrico
Monotellan or Dihydrogentellurid



Trihidruo de Aluminio
Aluminiumhydrid



Monohidróxido de potasio
Potassium monohydroxide

KOH

Ácido sulfhídrico
Dihydrogensulfid

H₂S

Ácido nitroso
Nitrous acid

HNO₂

Bromuro de hidrógeno
Hydrogen bromide

HBr

Clorato de potasio
Potassium chlorate

KClO₃

Tricloruro de aluminio
Trichloride of aluminum

AlCl₃

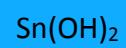
Peróxido de níquel
Nickel peroxide



Monóxido de bario
Barium monoxide

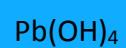


Dihidróxido de estaño
Tin dihydroxide



Hidróxido de Plomo(IV)

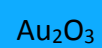
Lead Hydroxide (IV)



Tetrahidruro de silicio
Silicon tetrahydride



Óxido de oro(III)
Gold oxide(III)



Tricloruro de boro
Boron trichloride



Fluoruro de hidrógeno
Hydrogen flouride



Sulfato de hierro (II)
Iron sulfatate (II)



Óxido de hierro
Iron oxide

FeO

Hidruro de litio
Lithium hydride

LiH

Ácido nítrico
Nitric acid

HNO₃

Óxido de sodio
Sodium oxide



Sulfato de calcio
Calcium sulfate



Monóxido de cobre
Copper monoxide



Hipoclorito de sodio
Sodium hypochlorite



Peróxido de bario
Hydrogen peroxide



Trióxido de níquel
Diniquel trioxide



Carbonato de potasio
Potassium carbonate



Sulfito de potasio
Potassiumsulfit



Ácido clorhídrico
Hydrochloric acid



Nitrato de potasio
Potassium nitrate



Monocloruro de potasio
Potassium monochloride



Dióxido de hidrógeno
Dihydrogen dioxide



Dióxido de cesio

Dicaesium dioxide



Difloruro de calcio

Calcium difluoride

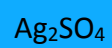


Monóxido de estaño

Tin monoxide



Sulfato de plata
Silver sulfate



Hidruro de sodio
Sodium monohydride



Ácido selenhídrico
Selenhydric acid



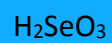
Metano
Methane



Anión hipocloroso
Hypochlorous acid



Selenito
Selenite



Fluoruro de litio
Lithium fluoride

LiF

Ácido hipoyodoso
Hipoyodoso acid

HIO

Yoduro de hidrógeno
Hydrogen iodide

HI

Dihidróxido de mercurio
Mercury dihydroxide



Peróxido de Litio
Lithium Peroxide



Nitrito de potasio
Potassium nitrite



Dihidruro de Berilio
Berilio dihydruride



Peróxido de cobre(II)
Copper peroxide(II)



Hexafluoruro de azufre
Sulfur hexafluoride



Ácido clórico
Chloric acid



Borano
Borane



Fluoruro de Bromo(III)
Bromo Fluoride(III)



Monóseleniuro de Estaño
Tin selenide

SnSe

Monóxido de dicobre
Dicopper oxide

Cu_2O

Which chemical element is Au?

Gold

When was the first model of Periodic Table designed?

In the XIX Century

How many chemical elements does the Periodic table have?

It has 118 chemical elements

Which chemical element is Mg?

Magnesium

Which chemical elements in the Periodic Table are named after continents?

Europium (EU)
Americium (AM)

Who was William Thomson Kelvin?

He was a British mathematician and physicist

Where was Nicolas Copernic from?

He was from Poland

How many Nobel prizes did Marie Curie win?

She won two Nobel prizes

What did Marie Curie discover?

Marie Curie studied the radiation of all compounds containing the known radioactive elements, including uranium and thorium, which she later discovered was also radioactive.

Which letter is not in the Periodic Table?

J

Which Chemical Elements were discovered by Spanish scientists?

Platinum (Pt)
Tungsten (W)
Vanadium (V)

Name three out of fifteen scientists whose names are used in chemical element names

Rutherford (Rf), Seaborg (Sg), Gadolin (Gd),
Curie (Cm), Einstein (Es), Fermi (Fm),
Mendelejew (Md), Nobel (No), Lawrence (Lr),
Copernicus (Cn), Roentgen (Rg), Bohr (Bh),
Fljorow (Fl), Meitner (Mt), Oganessian (Og)

Which is the Most Radioactive Element?

Polonium

How did Thomson describe the atom?

Atoms are uniform spheres of positively charged matter in which electrons are embedded.

What electric charge does an electron have?

An electron has negative electric charge

What is an Isotope?

Isotopes are atoms of the same element that have the same number of protons but different numbers of neutrons

What are the uses of Isotopes?

Medical uses and archeological uses

What kind of particles are emitted by the Rutherford experiment?

Alpha particles

What is the difference between the charge of a proton and the charge of an electron?

The charge of the electron is about -
 $1.60217733 \times 10^{-19}$ C, the charge of the proton
is equal and opposite to that of the electron

Which was the first atomic theory to describe
an atom with a nucleus and electrons in the
shell?

Rutherford atomic model

What is a chemical element?

A chemical element is a species of atoms
having the same number of protons in their
atomic nuclei

What is the atomic mass of an element?

The atomic mass of a single atom is its total mass. It is typically expressed in atomic mass units or amu, and it depends on the number of protons and neutrons.

What is the atomic number of an element?

The number of protons in an atom is called the atomic number

What is the mass number of an element?

The number of protons and the number of neutrons determine an element's mass number

What is a Mole?

The mole is the unit of measurement for amount of substance in the International System of Units (SI). It can be referred to atoms, molecules, ions, electrons, etc.

What did Linus Pauling explain in Chemistry?

He was able to explain the Chemical bond.

Who was Mendeleev in the Chemistry history?

He was the first person to establish the Periodic Table.

<p>What is Chemistry?</p>	<p>Chemistry is the study of matter, its properties, how and why substances combine or separate to form other substances, and how substances interact with energy.</p>
<p>What is the difference between Organic and Inorganic Chemistry</p>	<p>Organic Chemistry study is concentrated towards carbon compounds and other carbon-based compounds while Inorganic chemistry is concerned in the scientific study of all the chemical compounds except the carbon group.</p>
<p>What is a Chemical formula?</p>	<p>A chemical formula is a way of information about the chemical proportions of atoms that constitute a particular chemical compound or molecule, using chemical element symbols, and numbers</p>

What is a chemical change?

Chemical changes occur when a substance combines with another to form a new substance

What is the Law of Conservation of mass?

The law of conservation of mass is that, in a closed or isolated system, matter cannot be created or destroyed. It can change forms but is conserved.

Hidrógeno

Hydrogen

H

Helio

Helium

He

Litio

Lithium

Li

Berilio

Beryllium

Be

Boro

Boron

B

Carbono

Carbon

C

Nitrógeno

Nitrogen

N

Oxígeno

Oxygen

O

Fluor

Fluorine

F

Neón

Neon

Ne

Sodio

Sodium

Na

Magnesio

Magnesium

Mg

Aluminio

Aluminium

Al

Silicio

Silicon

Si

Fósforo

Phosphorus

P

Azufre

Sulfur

S

Clorlorine

Ch

Cl

Argón

Argon

Ar

Potasio

Potassium

K

Calcio

Calcium

Ca

Escandio

Scandium

Sc

Titanio

Titanium

Ti

Vanadio

Vanadium

V

Cromo

Chromium

Cr

Manganeso

Manganese

Mn

Hierro

Iron

Fe

Cobalto

Cobalt

Co

Níquel

Nickel

Ni

Cobre

Copper

Cu

Zinc

Zinc

Zn

Galio
Gallium

Ga

Germanio
Germanium

Ge

Arsénico
Arsenic

As

Selenio

Selenium

Se

Bromo

Bromine

Br

Criptón

Krypton

Kr

Rubidio

Rubidium

Rb

Estroncio

Strontium

Sr

Itrio

Yttrium

Y

Circonio

Zirconium

Zr

Niobio

Niobium

Nb

Molibdeno

Molybdenum

Mo

Tecnecio

Technetium

Tc

Rutenio

Ruthenium

Ru

Rodio

Rhodium

Rh

Paladio

Palladium

Pd

Plata

Silver

Ag

Cadmio

Cadmium

Cd

Indio

Indium

In

Estaño

Tin

Sn

Antimonio

Antimony

Sb

Telurio

Tellurium

Te

Yodo

Iodine

I

Xenón

Xenon

Xe

Cesio

Caesium

Cs

Bario

Barium

Ba

Hafnio

Hafnium

Hf

Tantalio

Tantalum

Ta

Wolframio

Tungsten

W

Renio

Rhenium

Re

Osmio

Osmium

Os

Iridio

Iridium

Ir

Platino

Platinum

Pt

Oro

Gold

Au

Mercurio

Mercury

Hg

Talio

Thallium

Tl

Plomo

Lead

Pb

Bismuto

Bismuth

Bi

Polonio

Polonium

Po

Astato

Astatine

At

Radón

Radon

Rn

Francio

Francium

Fr

Radio

Radium

Ra

<p>The gas pressure is ...</p> <p>a-The forces exerted by the particles in the gas when hitting the walls of the container where it is.</p> <p>b-The forces that sustain the gas</p> <p>c-The force that the container produces to contain the gas</p>	<p>a-The forces exerted by the particles in the gas when hitting the walls of the container where it is.</p>
<p>What is the principal unit of force?</p> <p>a-Square meter</p> <p>b-Newton</p> <p>c-Square centimeter</p>	<p>b-Newton</p>
<p>Which of the options corresponds to the pressure formula?</p> <p>a- Force / Surface</p> <p>b-Pressure / Newton</p> <p>c-Pascal / Km</p>	<p>a- Force / Surface</p>

<p>The name “Pascal” is has been given in honor of...</p> <p>a- Anthony Pascal b-Mariotte Pascal c-Blaise Pascal</p>	<p>c-Blaise Pascal</p>
<p>Indicate the 4 physical magnitudes that are used to describe gas:</p> <p>a-Water, fire, earth and air b- Pressure, volume, temperature and amount of substan c- Newton, Pascal, kilometer and pressure.</p>	<p>b- Pressure, volume, temperature and amount of substance</p>
<p>Complete the description: An ideal gas is characterized by ...</p> <p>a- The particles occupy an insignificant volume compared to the container that contains them and non-existen the forces of attraction between them. b- The particles that compose it occupy an insignificant volume compared to the container that contains it, being the forces of attraction between them constant c- The particles that compose it occupy a insignificant volume comparing it to the container that contains it, being the forces of attraction between them pressed.</p>	<p>a- The particles occupy an insignificant volume compared to the container that contains them and non-existen the forces of attraction between them.</p>

<p>The Boyle and Mariotte' s law explains that:</p> <p>a- If we take a certain mass of gas, and we keep a constant temperature, the product of the pressure by volume remains constant.</p> <p>b- If we take a certain mass of gas, and we keep a constant temperature , the product of pressure by volume remains sporadic</p> <p>c- If we take a certain mass of gas, and we keep a constant temperature, the product of pressure by volume remains colliding</p>	<p>a- If we take a certain mass of gas, and we keep a constant temperature, the product of the pressure by volume remains constant.</p>
<p>Boyle and Mariotte' s law explains that: “ If we take a certain mass of gas, and we keep a constant temperature, the product of the pressure by volume remains constant”. Transformed into symbols.</p> <p>a- $p / V = K$</p> <p>b- $p + V = K$</p> <p>c- $p \cdot V = K$</p>	<p>c- $p \cdot V = K$</p>
<p>If I make a force of 10N on a pushpin with an area of 0.0000001 square meter, what pressure am I doing?</p> <p>a- A pressure of 10Pa</p> <p>b- A pressure of 100000000 Pa</p> <p>c- A pressure of 10000 Pa</p>	<p>b- A pressure of 100000000 Pa</p>

<p>Choose the correct explanation that the TCM (Kinetic-Molecular Theory) gives to the first Charles and Gay-Lussac's law:</p> <p>a- When increasing the temperature, the agitation of the particles is reduced, therefore, the volume decreases</p> <p>b-When increasing the temperature, the degree of agitation of the particles is equalized, therefore, the volume increases</p> <p>c-c-When increasing the temperature, the agitation of the particles increases, therefore, the volume increases</p>	<p>c-When increasing the temperature, the agitation of the particles increases, therefore, the volume increases</p>
<p>Law: "When increasing the temperature, the degree of agitation of the particles increases, therefore, the volume increases". This law implies that temperature and volume are:</p> <p>a-Inversely proportional</p> <p>b- Directly proportional</p> <p>c-They do not have proportionality</p>	<p>b- Directly proportional</p>
<p>Law: "When increasing the temperature, the agitation of the particles increases, therefore, the pressure increases". This law implies that temperature and pressure are:</p> <p>a-Inversely proportional</p> <p>b- Directly proportional</p> <p>c-They do not have proportionality</p>	<p>b- Directly proportional</p>

<p>Choose the definition that the TCM gives us about this Charles and Gay-Lussac's second law.</p> <p>a- When the temperature goes up, the speed of the gas particles decreases, decreasing the number of collisions, and therefore, the pressure</p> <p>b- When the temperature increases, the speed of the gas particles increases, increasing the number of collisions, and therefore, the pressure</p> <p>c-When the temperature rises, the speed of the gas particles decreases, increasing the number of collisions, and therefore, the pressure</p>	<p>b- When the temperature increases, the speed of the gas particles increases, increasing the number of collisions, and therefore, the pressure</p>
<p>What pressure units are used?</p> <p>a- Bar, Atmosphere, Silver millimeter, Milibar</p> <p>b-Bar, Atmosphere, Millimeter of Mercury, Milibar</p> <p>c-Ber, Atmosphere, Millimeter of Mercury, Milibar</p>	<p>b-Bar, Atmosphere, Millimeter of Mercury, Milibar</p>
<p>What is the symbol and the equivalence of the millimeter of Mercury?</p> <p>a. mmHa, 1at = 760 mmHa</p> <p>b. mmAg, 1 atm = 750 mmAg</p> <p>c. mmHg, 1 atm = 760 mmHg</p>	<p>C. mmHg, 1 atm = 760 mmHg</p>

<p>What does it mean that a piece of material is compressible?</p> <ul style="list-style-type: none">a) That we are able to increase its volumeb) That we are capable of intermingling substancesc) That we are able to reduce its volume	<p>c) That we are able to reduce its volume</p>
<p>Definition of kinetic:</p> <ul style="list-style-type: none">a) Movementb) Pressurec) Energy	<p>a) Movement</p>
<p>The most compressible aggregation status is:</p> <ul style="list-style-type: none">a) Gasb) Liquidc) Solid	<p>a) Gas</p>

<p>What's there among ideal gas particles?</p> <p>a) There is nothing, these particles have no force b) Many other particles c) The gases do not possess particles</p>	<p>a) There is nothing, these particles have no force</p>
<p>What happens if we heat a gaseous body while maintaining constant pressure?</p> <p>a) The volume decreases b) The volume increases c) The volume is not altered</p>	<p>b) The volume increases</p>
<p>If you compress the air from a syringe:</p> <p>a) That gases are difficult to compress b) That the gas can be easily compressed c) That gas is not matter</p>	<p>b) That the gas can be easily compressed</p>

<p>If we increase the temperature to an ice cube until it melts, what will it happen?</p> <ul style="list-style-type: none">a) The particles will return to their fixed positionsb) The particles will leave their fixed positionsc) It will reduce the degree of agitation of the particles	<ul style="list-style-type: none">b) The particles will leave their fixed positions
<p>If we increase the temperature to an ice cube until it melts, what is the process ?</p> <ul style="list-style-type: none">a) Meltingb) Vaporizationc) Sublimation	<ul style="list-style-type: none">a) Melting
<p>How strong is the effect of the attraction forces between the particles in a soft drink?</p> <ul style="list-style-type: none">a) There is no effectb) The effect is intermediatec) The effect is very intense	<ul style="list-style-type: none">b) The effect is intermediate

Ethanol boils at 78,32 °C, and methanol, at 65°C. In which of the two substances are the forces of attraction among their particles greater?

- a) Methanol
- b) Ethanol
- c) Temperature does not influence its attraction forces

b) Ethanol

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There is no author. Every partner has work groups – so each contribution is a work of many.

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