1st B

Famous Scientists

Historical Moments

Medical Discoveries

SCIENCE?

Eureka Eureka!

Archimedes was born in 287 BC in Syracuse. He was a mathematician, engineer, inventor physicist and astronomer. He is considered as one of the leading scientists of history

He developed modern calculus and analysis and prove a lot of geometrical theorems, some other achievement were the accurate approximation of pi, and the creation of a system of exponentiation for expressing very large numbers. He was also the first to apply mathematical theorems to physical phenomena.

Archimedes died during the Siege of Syracuse when he was killed by a Roman soldier. His tomb is decorated with a sphere and a cylinder, representing his mathematical discoveries. His mathematical writings were little known in antiquity.

Archimedes'principle, ("a body immersed in a liquid or a gas has a buoyant force equal to the weight of the fluid it displaces"), is known as the best Archimedes' discovery, and it has a very long history.

You know, King's don't want to be tricked, and King Hieron II was no exception. He wanted to wear Golden Crown, the most beautiful crown ever seen, and to make his wish come true, he gave some gold to a goldsmith to make the crown. After a few days, the goldsmith brought the crown. But the King, seeing the colour of the crown, he had a suspicion, he started thinking that the goldsmith tricked him.

He asked his friend Archimedes to find out. Among those days Archimedes was thinking about the problem, and he did not realize to take a bath, that is why his servants forced him to take a bath.

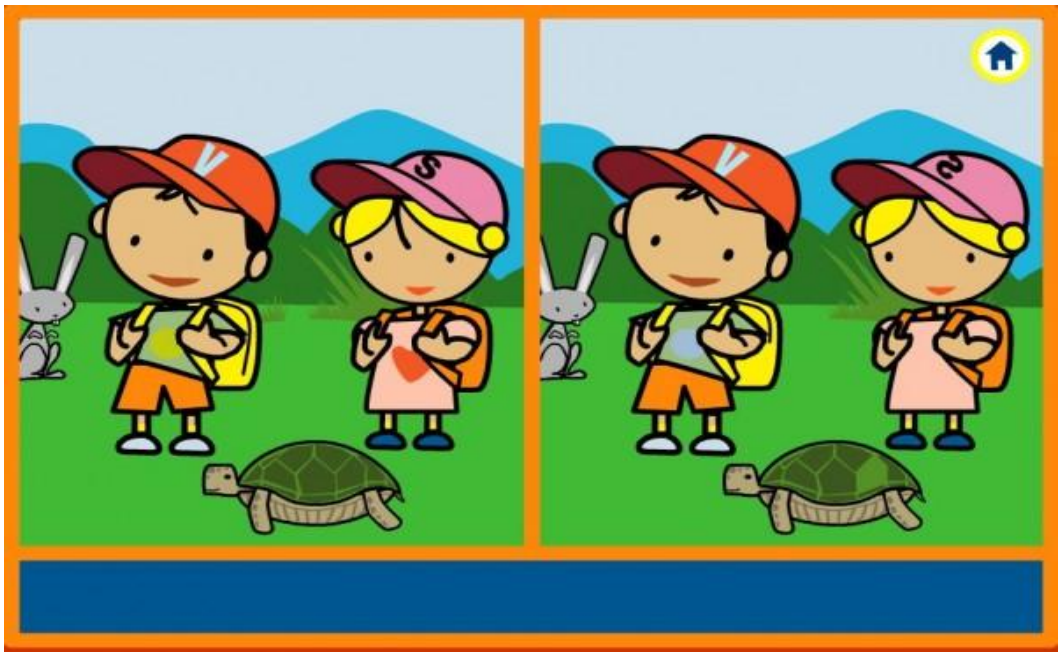
He got into the bathtub and he realized the water overflowed. Suddenly he got up and got out the bathtub shouting Eureka, Eureka!

He then knew how to prove if the King was tricked or not, he only had to calculate their volume.

He did that and he discovered the truth, the goldsmith tricked the King.

This history shows as how Archimedes discovered the Archimedes' principle.

Spot the 7differences!



Penicillin

The discovery of penicillin

Penicillin was discovered in 1928 by Alexander Fleming . It all started with a mold that developed on a Staphylococcus culture plate.

At the time, Fleming was experimenting with the influenza virus in the laboratory of the inculation Department at St.Mary's Hospital in London.

Often decribed as a careless lab technician , Fleming returned from a two –week vacation to find that a mold had developed on an accidentally contaminated staphylococcus culture plate . Upon examination of the mold , he noticed that the culture prevented the growth of staphylococci.

What is it composed of?

Penicillin is a group of antibiotics.

Types of antibiotics:

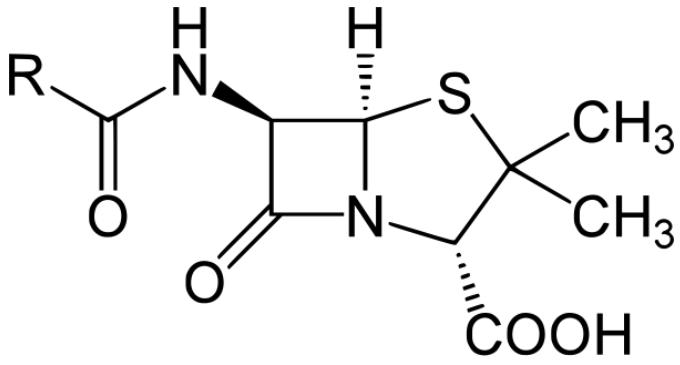
-penicillin G (intravenous use)

-penicillin V (oral use)

-procaine penicillin and benzathine penicillin (intramuscular use)

Penicillin core structure, where "R " is the variable group

Its formula is:



How does penicillin work?

Penicillin work by indirectly burting bacterial cell walls . The antibiotics do this by acting directly on peptidoglycans , an important part of bacteria's structure.

The peptidoglycan in bacteria's cell walls increases their strength and keeps external fluids and particles entering them.

What is penicillin used for ?

Penicillin is use for treat infections caused by bacteria . They either kill the bacterium or prevent further growth.

There are a large number of different penicillin , each used for its own specific medical problems . The following list mentions a handful of infections that can be treated with penicillin :

Common bacteria .

- Gas gangrene .
- Gastritis or peptic ulcer disease .
- Leptospiroisis .
- Lyme disease .
- Typhoid .

1- Intelligence test:

Continues each of the sequences according to the criteria that you think is easier.

a) **A, D, G, J :**

b) **1, 3, 6, 10:**

c) **1, 1, 2, 3, 5:**

d) **21, 20, 18, 15, 11:**

e) **8, 6, 7, 5, 6, 4 :**

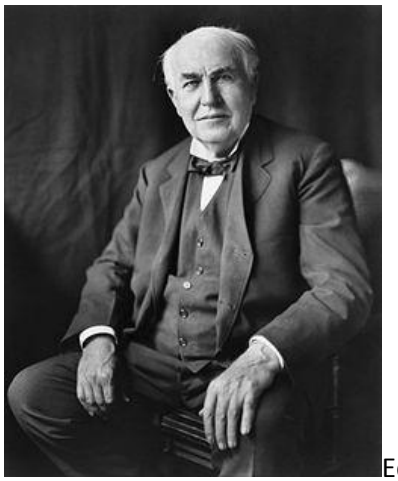
f) **65536, 256, 16:**

g) **1, 0, -1, 0:**

h) **3968, 63, 8, 3:**

THOMAS EDISON

Who was he:Thomas Alva Edison was an American inventor and a businessman. He developed the phonograph, the motion picture camera, and the long-lasting, practical electric light bulb. He was one of the first inventors to apply the principle of mass production.


Edison

Early career:At age 12, Edison set out to put much of that education to work. He convinced his parents to let him sell newspaper to passengers along the Grand Trunk Railroad line. Exploiting his access to the news bulletins teletypped to the station.

BECOMING AN INVENTOR:In 1869, Edison moved to New York City and developed his first invention, an improved stock tickers transactions. The Gold and Stock Telegraph Company was so impressed, they paid him 40,000 for the rights. Edison was only 22 years old.

In 1870 Thomas Edison set up his first laboratory and manufacturing facility in Newark, New Jersey, and employed several machinists.

HIS FINAL YEARS:Thomas Edison died of complications of diabetes on October 18, 1931, in his home, “Glenmont”, in West Orange, New Jersey. He was 84 years old.

QUESTIONNAIRE

Do you think you know all about science, but maybe there are a few things that you don´t remember. Come on, play to this game and you will prove your relation with the world of science!!!

1. Which of these famous people are not scientists?
   a)Marie Curie
   b)Alexander Fleming
   c)Alan Walker

2. Who invented the penicilin?
   a)Alexander Fleming
   b)Isaac Newton
   c)Rosa Parks

3. Where was Albert Einstein born?
   a)U.S.A
   b)Germany
   c)Ukrania

4. When was the first science nobel prize given?
   a)1901
   b)1845
   c)1922

5. Who was the only person who won the Chemistry Nobel Prize twice?
   a)Henry Taube
   b)Frederick Sanger
   c)Otto Wallach

NOBEL PRICE HISTORY

When they started?

They started when Alfred Nobel estblished the prizes in 1895. The prizes in Chemist, Literarure, Peace, Physics, and Physiology or Medicine were first awarded in 1901.

When and where the nobel prizes are celebraited?

The prize ceremonies take place once a year in Stockholm, Sweden, except for the peace prize which is held in Oslo, Norway.

What is the prize?

Each winner of a Nobel Prizes, which can go to individuals and institutions, take home a medal, a diploma, and cash, which varies each year and depends on the income earned on the Nobel Foundation fund.

Solutions Questionnaire: 1.C; 2.A; 3.B; 4.A; 5. B

Types of nobel prizes

There are 6:

- Peace
- Physiology or Medicine
- Physics
- Chemistry
- Literature
- Economics

Aries:You are going to have a successful life, you are doing right, keep on that way.

Taurus:You have to have a better social life, it is going to be good for your health.

Gemini:You know how to make a good social life. You are peaceful, affectionate and friendly. This is your lucky month.

Cancer:You have to try to be more respectful, it will help you in your lattest life.

Leo:You love summer and this is quite good, but you have to try new things in your free time, this will relax your body and your mind.

Virgo:You are so lucky, your future is really clear and succesful, your life exceed from other people normal life.

Libra: You are so lucky! You always have a happy face and you never give up.

Escorpio: You are very friendly, but try to be more patient, this will help you a lot in your future.

Sagittarius:You don´t like summer but there is no problem you are very positive and you can go with your friends without problem.

Capricorn:You never give up! You will never stop till you have it. You are very successful in love world and you will always follow your dreams. Keep on that way, you are doing right

Aquarius:As Leo you like summer, specially in the beach because you love water. You are relaxed at every time of the day, but you have to practice more exercise, it is good for your health.

Pisces:You are a bit anxious. In summer, go to the beach and take a week of relaxing holidays, you will feel much better.

BUILD A FIZZ INFLATOR

You will need

- One small empty plastic soda or water bottle
- 1/2 cup of vinegar
- Small balloon

- Baking soda
- Funnel or piece of paper

What to do

1. Carefully pour the vinegar into the bottle.
2. This is the tricky part: Loosen up the balloon by stretching it a few times and then use the funnel to fill it a bit more than half way with baking soda. If you don't have a funnel you can make one using the paper and some tape.
3. Now carefully put the neck of the balloon all the way over the neck of the bottle without letting any baking soda into the bottle.
4. Ready? Lift the balloon up so that the baking soda falls from the balloon into the bottle and mixes with the vinegar. Watch the fizz-inflator at work!

How does it work?

The baking soda and the vinegar create an ACID-BASE reaction and the two chemicals work together to create a gas, (carbon dioxide) Gasses need a lot of room to spread out and the carbon dioxide starts to fill the bottle, and then moves into the balloon to inflate it.

QUESTIONS?

1.WHERE DID STEPHEN HAWKINGS LIVE WHEN HE WAS AT THE MIDDLE OF A WAR?

A- SPAIN

B- LONDON

C- NEW YORK

D- NEW ZEALAND

2.WHAT'S THE NAME OF HIS ILLNESS?

A- SICKNESS

B- ALS

C- ARACHNOPHOBIA

D- MENTAL ILLNESS

3.WHAT'S THE NAME OF THE PERSON WHO WORKED WITH HIM?

A- WELLINGSTONE

B- STEVE

C- PENROSE

D- PAUL

4.HOW MANY HONORARY DEGREES DID HE WIN ?

A- 31

B- 4

C- 10

D- 12

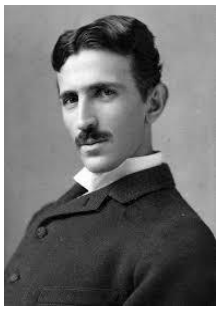
IF YOU GET RIGHT ALL THE QUESTI0NS,NOW YOU ARE A SCIENTIST. CONGRATS!!!!

NIKOLA TESLA:

BIOGRAPHY :

He was born in Smiljan, Croatia on the 10th of 1856. But, unfortunately he died the 7th of 1943 in a hotel of New York, well, he was on a room, exactly on the n* 3327 his body was found the 9th of January so they found it two days later in his room and, they were late for two days because he was alone so no one knows he died.

First he moved to Smiljan to study German and religion. Then he finished school in 1873 and he went back to his village. But, two weeks after that he had the cholera and he stayed for nine months in his bed. He was very closed to death in more than one time but, he survives and, after nine months his parents wrote him to the best university of engineer. And after that he was an inventor, an electrical engineer, a mechanic engineer, physicist and futurist.



FAMILY :

His mother's name was Duka Tesla she born in 1822 and died in 1892.

His father's name was Milutin Tesla he born in 1886 and he died in 1879.

PROJECTS / INVENTIONS :

Nikola Tesla invents a lot of projects but, he was known by all the world because for example: the radio and the death ray.

The radio was invented by Nikola more or less during the years 1.900-1.901.

The death ray was invented also by Nikola, it has been never finished but it's a weapon that can kill up to 300 km of distance.

GAMES

1. Find the words that are different.
   a. Experiment Discovery Science Exam
   b. Physics Medicine Peace Chemistry
   c. Formula Theatre Theories Equation
2. Write the letter that is missing.

Re_ativity Bra_n Disco_erment Eins_ein Investi_ation Ne_ton Curi_ Phil_soph_r Inven_or

3. Do the test to know what scientist you are.

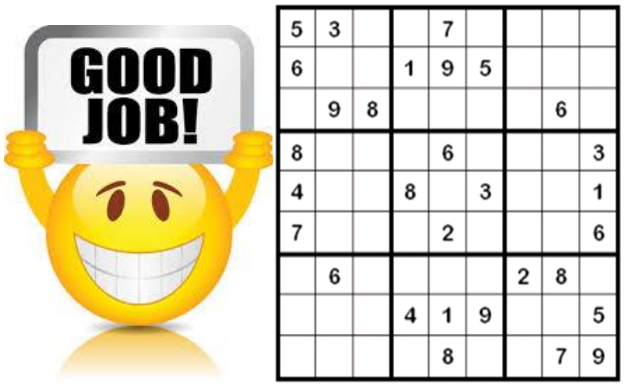
1. What do you prefer?
   A. Physics
   B. Chemistry
   C. Physics

2. What do you want to do?
   A. Relativity
   B. Universe
   C. Energy

3. How are you?

   A. Nothing Serious
   B. Serious
   C. A little serious

If you have the most A:
You are Albert Einstein. You are very intelligent and you invent the theory of the relativity. The formula you invented is E=mc2.
If you have the most B:
You are Steven Hawking. You are the most intelligent person of the world. You discover the black holes.
If you have the most C:
You are Nikola Tesla. You are very intelligent. Your jobs are about the energy.



RENEWABLE ENERGY

Renewable energy is energy that is collected from resources which are naturally replenished on a human timescale, such as sunlight and wind. Renewable energy resources exist over wide geographical areas, which are concentrated in a limited number of countries. In international public opinion surveys there is strong support of promitting renewable sources such as solar power and wind power. At the national level, at least 30 nations around the world already have renewable energy contributing more than 20 percent of energy supply.

WIND ENERGY

Wind power captures the natural wind in our atmosphere and converts into mechanical energy and then electricity. People started using wind power centuries ago with windmills. Today´s wind turbine is a highly evolved version of a windmill. Modern wind turbines harness wind´s kinetic energy and convert it into electricity. Wind energy is a clean, renewable form of energy that uses virtually no water and pumps billions of dollars into our economy every year. Since 2008 , the U.S. wind industry has generated more than $1000 billion in private investimment. Wind energy is a drought-resistant cash crop in many parts of the country. Wind energy helps avoid a variety of environmental impacts due to its low impact emitting zero greenhouse gas emissions or conventional pollutants and consuming virtually no water.

SOLAR ENERGY

Solar energy is the cleanest and most abundant renewable energy source available, and the U.S. has some of the richest solar resources in the world. Modern technology can harness this energy for a variety of uses, including generating electricity, providing light or a comfortable interior environment, and heating water for domestics, commercials or industrial use.
There are several ways to harness solar energy. The first three are active solar systems, which use mechanical or electrical devices that convert the sun´s heat or light to another form of usable energy. Passive solar buildings are designed tocollect, store, and distribute the heat energy from sunlight to maintain the comfort of the occupants without the use of moving parts or electronics.

GOALS

Many other countries have the set goal to reach 100% renewable energy in the future. For example, in Denmark the government decided to switch the total energy supply to 100% renewable energy by 2050.

Back to School Crossword

Across

4. Do you need to sharpen yours?
5. Write or draw on this.
8. You write on this with chalk.
10. Please_____ your name on your work.

Down

1. Draw straight lines with this.
2. It has a keyboard and a screen.
3. Where you go to play at break (recess)
6. Read these at home or school.
7. They help you learn new things.
9. The teacher sits here.

CHRISTMAS ALPHABET SOUP

GIFT

TREE

LETTER

C	S	N	O	W	M	A	N	Q	E	S
C	A	G	A	F	L	S	F	L	W	R
H	S	I	C	G	J	T	R	E	E	Y
R	Z	F	K	D	O	A	G	T	U	T
I	X	T	L	I	H	R	H	T	I	O
S	B	C	V	B	N	M	B	E	L	L
T	R	U	D	O	L	F	K	R	Z	P
M	I	S	T	L	E	T	O	E	Q	M
A	S	A	N	T	A	C	L	A	U	S
S	J	H	B	E	K	N	I	E	D	L

BELL

STAR

MISTLETOE

RUDOLF

SANTA CLAUS

SNOWMAN

http://dibujos-para-colorear.euroresidentes.com/

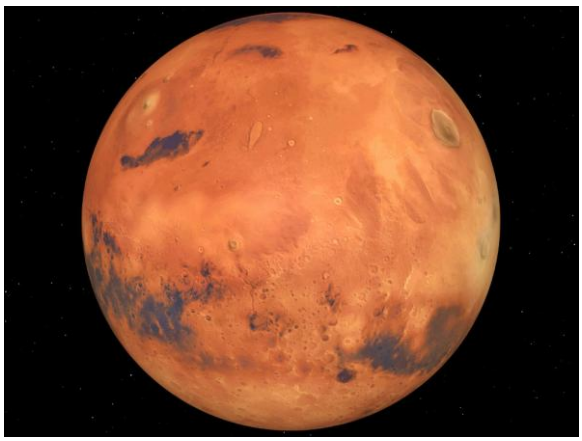
NASA´S PROJECTS

Nasa is developing the capabilities needed to send humans to Mars in 2030

WHY?

Because Mars is a rich destination for scientific discovery,and humans want to expand our knowledge

Of the solar system formation and evolution are comparable to earth, helping us to learn more about our planet's history and future



WATER ON MARS

The first framing theme was ¨follow the water¨,

As water is essential to live as we know it. It is also important to understanding the geologic and climatic history of Mars, as well as we now it might support thefuture of human explorers.

NEXT PROJECTS

Nasa´s next step is deep space, where Nasa will send a robotic mission to capture and redirect an asteroid to orbit the moon astronauts aboard the Orion spacecraft will explore the asteroid in the 2020,returning to Earth with samples.

Word search **You can underline diagonally vertical, horizontal**

a) Human.
b) Blood.
c) Chemist.
d) theory.
e) cells.
f) Nobel.
g) Physics
h) Literature.
I) Develop

P	W	C	E	L	L	S	Ñ	P	L
P	T	C	H	E	M	I	S	T	I
H	T	H	G	U	D	R	Ñ	D	T
Y	F	B	E	K	M	R	W	E	E
S	I	L	H	O	K	A	L	V	R
I	O	O	M	M	R	N	N	E	A
C	K	O	K	L	D	Y	F	L	T
S	G	D	U	Z	T	O	O	O	U
I	N	O	B	E	L	K	K	P	R
E	G	J	M	H	V	B	I	Z	E

GOOGLE CAR

Imagine if everyone could get around easily and safely, regardless of their ability to drive.

Aging or visually impaired loved ones wouldn't have to give up their independence. Time spent commuting could be time spent doing what you want to do. Deaths from traffic accidents over 1.2 million worldwide every year could be reduced dramatically, especially since 94% of accidents in the U.S. involve human error

Our self-driving cars are designed to navigate safely through city streets.

They have sensors designed to detect objects as far as two football fields away in all directions, including pedestrians, cyclists and vehicles—or even fluttering plastic shopping bags and rogue birds. The software processes all the information to help the car safely navigate the road without getting tired or distracted.

Trivia of Science

a) Who Discover the carbon atoms?
b) Who develop density-functional theory?
c) Who discover the G-proteins and the role of these proteins in signal transduction in cells?
d) Who won the nobel peace prize of the struggle for civil rights and social justice?
e) Who won the nobel Literature prize in 2015?
f) Who discovered Human blood groups?

We've self-driven more than 1.5 million miles and are currently out on the streets of Mountain View, CA, Austin, TX, Kirkland, WA and Metro Phoenix, AZ.

Our testing fleet includes both modified Lexus SUVs and new prototype vehicles that are designed from the ground up to be fully self-driving. There are safety drivers aboard all vehicles for now. We look forward to learning how the community perceives and interacts with us, and uncovering situations that are unique to a fully self-driving vehicle.

2			8		4			6
		6				5		
	7	4				9	2	
3				4				7
			3		5			
4				6				9
	1	9				7	4	
		8				2		
5			6		8			1

EASY

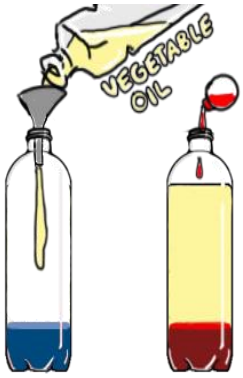
			3		4			
	1	2				8	9	
	6						2	
6				5				4
			1		7			
3				6				1
	9						5	
	7	8				6	4	
			9		8			

MEDIUM

BLOBS IN A BOTTLE

You will need

- A clean 1 liter clear soda bottle
- 3/4 cup of water
- Vegetable Oil
- Fizzing tablets (such as Alka Seltzer)
- Food coloring



- ## What to do

1. Pour the water into the bottle.

Use a little cup or funnel to carefully put the vegetable oil into the bottle until it's almost full. You must have to wait some minutes for the oil and water separate.

2. Add 10 drops of food coloring into the bottle. The drops will pass through the oil and then mix with the water .
3. Break a seltzer tablet in two parts and drop the half tablet into the bottle. Watch it sink to the bottom and let the blobby greatness start!
4. To keep it going, just add another tablet piece. For a true lava lamp effect, shine a flashlight through the bottom of the bottle.

FRIENDSHIP TEST:

1.Has he/she ever dogged you in an important situation?

1. yes, a lot
2. yes, once or twice
3. never

2.Has he always been there for you?

1. yes, always
2. rarely
3. sometimes

3.Has he ever said to you his "best" friend?

1. never
2. once or twice
3. lots

4.Has he/she supported you in ANY way?

1. very rarely
2. sometimes
3. yes, in lots

5.Have you ever trusted him/her in something but later thought you hadn't?

1. never
2. once
3. heaps

6.Does he stick up for you?

1. rarely
2. always
3. sometimes

7.Has he ever lied to you?

1. never
2. once or twice
3. he always does

8.Has he ever landed you money in the time of need?

1. yes, also over the amount I wanted
2. no, not a penny
3. the exact amount

ANSWERS TRIVIA: *a) Sir Harold Kroto; b)Walter Kohn; c)Alfred G. Gilman; d)Martin Luther King Jr.; e) Svetlana Alexievich; f) Karl Landsteiner*

RAMÓN Y CAJAL

Santiago Ramón y Cajal was born the 1stof May in 1852. He was a Spanish pathologist, histologist, neuroscientist, and Nobel laureate.

Biography

As a child Ramón y Cajal was expelled many times from one school to another because of behavior.

He was a great painter, artist, and gymnast, but his father did not support these abilities. In order to modified the character of his son, his father apprenticed him to be a shoemaker and barber. He was well known for his bad attitude as he worked. Finally he decided to work in medicine.

Ramón y Cajal attended the medical school of the University of Zaragoza. He graduated in 1873. After an examination, he worked as a medical officerin the Spanish Army. He took part in an expedition to Cuba in 1874-75, where he contracted malariaand tuberculosis. In order to cure these illnesses, he attended the Panticosaspa-town in the Pyrenees.

After returning to Spain he married Silveria Fañanás García in 1879 and soon he had four daughters and three sons. In 1877, he received his doctorate in medicine in Madridand was awarded the position of anatomy professor of the University of Valenciain 1883. professorships.He was also director of the National Institute of Hygiene, and founder of the Laboratory of Biological Investigations, later named the Cajal Institute. He died in Madrid in 1934, at the age of 82, continuing to work even when he was about to die.

Works and theories

Ramón y Cajal made several contributions to neuroanatomy. He discovered the axonal growth cone, and demonstrated experimentally that the relationship between nerve cells was not continuous.This provided definitive evidence for what would later be known as "neuron doctrine". He made descriptions of cell types associated with neural structures.

He discovered a new type of cell, which was named thecell of Cajal. This cell is found in neurons. Ramón y Cajal's efforts to improve the state of scientific research and education in Spain were part of a broader preoccupation with Regenerationismamong Spanish intellectuals.

Distinctions

Ramón y Cajal received many prizes, including honorary doctorates in medicine from the Cambridge University and Würzburg University and an honorary doctorate in philosophy from Clark University.The most famous distinction he was awarded was the Nobel Price in Physiology or Medicine in 1906 with the Italian scientist Camillo Golgi "in recognition of their work on the structure of the nervous system". The asteroid 117413 Ramonycajal is named in his honor.

Publications

Rules and advices on scientific investigation:

- Histology
- Degeneration and regeneration of the nervous system
- Manual of normal histology and micrographic technique
- Elements of histology
- Manual of general
- New ideas on the fine anatomy of the nerve centres
- Textbook on the nervous system of Man and the vertebrates.

SCIENCE QUIZ (BIODEGRADABLE PRODUCTS)

1) biodegradable product has the abilyty ..

a)to break down relativi and safely
b)to dance
c)to contaminate

2)some products can biodegrade or..

a)clean the enviroment
b)protect the ground
c)or can not be able to biodegrade

3)there are products that can take

a)lees than a year
b)20 years
c)more than 30 years

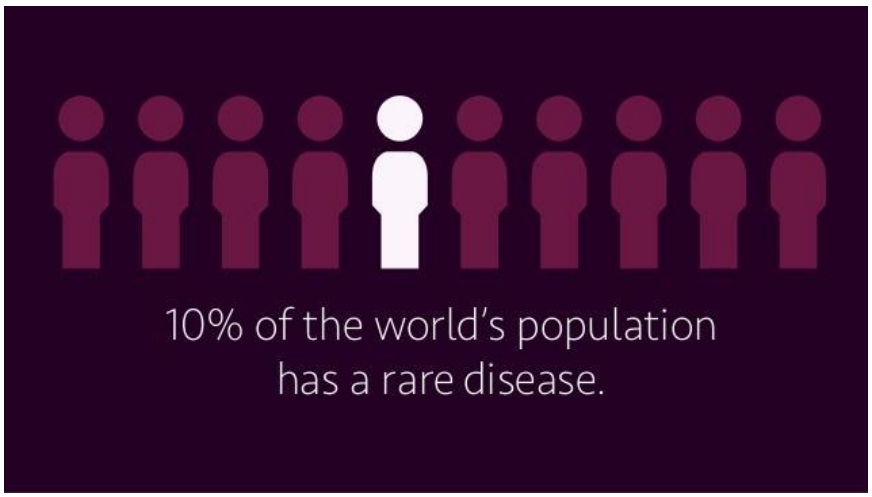
4) mostly the biodegradable products are ...

a)expensive
b)cheap
c)free

5. sustainable disposal products of any product requires that it wastes return...

a)to the earth
b)return to the water
c)return to air

RARE DISEASES: A MEDICAL CHALLENGE



WHAT'S A RARE DISEASE

A rare disease is any disease that affects a small percentage of the population. In Europe it is considered a rare disease when it affects less than 1 in 2000. However in the USA it is defined as rare disease when it affects fewer than 200.000 Americans at any time.

Nowadays, in the European Union (EU) 30 million people are affected by one of the over 7000 rare diseases existing.

Most rare diseases are genetic, and thus are present throughout the person's entire life, even if symptoms do not immediately appear. Many rare diseases appear early in life, and about 30 percent of children with rare diseases will die before reaching their fifth birthday.

It happens very frequently that common symptoms hide rare diseases. It causes a wrong diagnostic and the delay in the treatment.

CHARACTERISTICS OF RARE DISEASES

Despite the broad diversity, rare diseases have some common characteristics.

- Rare diseases are severe to very severe, chronic, often degenerative and lifethreatening
- The quality of life of rare diseases patients is often decreased by a limited autonomy
- Rare disease patients and their families suffer physiological by the absence of help for everyday life
- There is often no effective treatment. In some cases, symptoms can be treated to improve quality of life

***Science quiz*: 1A,2C,3C,4A,5A**

LIVING WITH A RARE DISEASE

Rare disease patients and their families face a wide range of difficulties:

- Because rare disease patients are a minority, the majority of the society ignores its existence
- These diseases do not represent a public health priority and little research is performed
- The lack of scientific knowledge results on the delay of the diagnosis
- Rare disease patients face the lack of information about the disease itself and about where to obtain help
- There are no qualified professionals to provide appropriate quality health care
- Living with a rare disease has implications in all areas of life: school, work opportunities, social relationships. It often causes isolation and exclusion from social community
- The cost of the few existing drugs and care is very high

THE FUTURE FOR RARE DISEASES

Researchers have made a good progress in recent years in the diagnosis, treatment and prevention of a variety of rare diseases. Unfortunately, there is still much work to do because there are no treatments for the majority of rare diseases.

Since 1983, the Orphan Drug Act provides incentives for drug companies to develop treatments for rare diseases. It has made possible more than 340 treatments for rare diseases.

Recently, the National Institutes of Health (NIH) launched a new effort, called the Therapeutics for Rare and Neglected Diseases (TRND) program, to create a research group and push for the development of new treatments for rare diseases.

The future looks positive for rare diseases, although there is still a long way ahead.

Find five characteristics of rare diseases

N	O	E	F	F	E	C	T	I	V	E	T	R	E	A	T	M	E	N	T
O	S	E	J	X	T	K	E	M	H	L	E	F	D	B	O	O	M	Y	J
E	R	U	L	I	R	O	N	A	I	T	S	I	R	C	G	J	S	Ñ	G
F	E	L	M	L	I	M	U	R	N	I	E	A	P	E	Q	S	U	K	D
E	A	I	I	E	X	H	T	O	O	Z	P	R	K	N	X	I	F	O	T
C	O	M	L	F	E	W	J	A	B	C	T	O	F	C	V	L	F	U	B
T	N	I	I	D	E	G	E	N	E	R	T	I	V	E	P	V	E	G	S
I	T	T	M	K	F	T	Y	P	S	F	I	R	Y	N	Ñ	I	P	V	A
V	O	E	M	L	R	G	H	J	D	W	E	R	P	O	L	A	E	B	L
E	L	D	I	U	I	O	W	R	F	I	M	E	R	E	H	O	F	M	G
T	U	A	E	D	E	G	E	N	E	R	B	T	D	V	E	R	G	W	O
R	A	U	D	A	N	R	Q	I	E	A	E	W	E	J	E	G	H	G	O
E	R	T	A	V	D	H	V	D	A	S	T	Q	A	W	P	I	K	I	L
A	D	O	U	R	A	E	M	O	Ñ	O	L	E	O	N	R	O	B	O	T
T	H	N	T	I	G	R	E	R	I	Z	O	T	N	U	S	V	R	B	T
M	C	O	O	D	A	R	E	V	O	G	E	L	A	I	U	T	P	O	R
E	T	M	N	C	A	R	M	E	A	F	G	Y	K	Ñ	N	R	Y	K	H
N	A	Y	O	I	A	K	O	J	S	A	P	O	T	M	I	G	H	A	L
T	W	D	E	G	E	N	E	R	A	T	I	V	U	R	K	H	O	T	I
A	B	S	C	E	N	C	E	O	F	H	E	L	P	I	O	G	D	E	R

QUIZ

Choose the correct answer:

1. How many rare diseases exist?

a) 6000
b) 7000
c) 2000

2. The cost of drugs for rare diseases is…

a) High
b) Affordable
c) Low

3. Rare diseases have in common:

a) They have an effective treatment
b) They are a priority for public health
c)There are no qualified professionals

4.What percentage of children with a rare disease dies before reaching 5 years?

a) 50%
b) 30%
c) 40%

5. Since 1893, drugs companies have made possible more than…

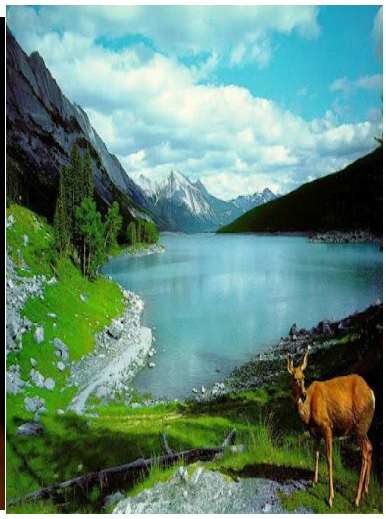
a) 415 treatments
b) 200 treatments
c) 340 treatments

The Environment

By Andrew Sangiorgi

What is the natural environment?

The natural environment is all everything naturally on Earth. It also encompasses the interaction of species.

What about the Global Warming?

The Global Warming dangers are growing. Scientist are concerned about long term effects of Global Warming on the environment. The planet is warming, and fast. A report concluded that the Planet will warm everywhere 2.7 celsius degrees in 2100.

Climate change is causing longer droughts, severe floods and harsher environment.


How can we help?

Healthy environments are becoming more important as climate is more severe. But there are many easy, cheap activities that can help environment.

Reducing vulnerability and building resilience to ecological changes are best viewed as development changes. Health and productivity of ecosystems are the foundation of livelihood and food security.

Answers Quiz Rare Diseases:1) b; 2) a; 3) c; 4) b; 5) c

MARIE CURIE:

EARLY LIFE:

Maria Sklodowska, better known as Marie Curie, was born in Warsaw in modern-day Poland on November 7, 1867. She had a bright and curious mind and excelled at school. But tragedy struck early, and when she was only 10, Curie lost her mother, Bronislawa, to tuberculosis.

A top student in her secondary school, Curie could not attend the men-only University of Warsaw. She instead continued her education in Warsaw's "floating university," a set of underground, informal classes held in secret. Both Curie and her sister Bronya dreamed of going abroad to earn an official degree, but they lacked the financial resources to pay for more schooling. Undeterred, Curie worked out a deal with her sister. She would work to support Bronya while she was in school and Bronya would return the favor after she completed her studies.

For roughly five years, Curie worked as a tutor and a governess. She used her spare time to study, reading about physics, chemistry and math. In 1891, Curie finally made her way to Paris where she enrolled at the Sorbonne in Paris. She threw herself into her studies, but this dedication had a personal cost. With little money, Curie survived on buttered bread and tea, and her health sometimes suffered because of her poor diet.

Curie completed her master's degree in physics in 1893 and earned another degree in mathematics the following year. Around this time, she received a commission to do a study on different types of steel and their magnetic properties. Curie needed a lab to work in, and a colleague introduced her to French physicist Pierre Curie. A romance

developed between the brilliant pair, and they became a scientific dynamic duo. The pair married on July 26, 1895.

EXPERIMENTS:

Marie and Pierre Curie were married scientists who discovered radium (on December 21, 1898). They announced their findings a week later, on the 28th of December. After forty-five months of additional work, the pair first isolated radioactive radium salts (from mineral pitchblende) at their Paris laboratory (on the 20th of April, 1902). The following year, they shared the Nobel Prize in science for their groundbreaking work.

FAMILY:

Pierre Curie-Wladyslaw Sklodowski-Bronislawa Sklodowska

Marie Sklodowska, 4th child and 4th daughter. Called "Manya" as a child in Poland. A top student & received several scholarships. Discovered Polonium, Radium, and Radioactivity. Married Pierre Curie. Had two daughters, Irene and Eve. Very close to her father and never cut her Polish ties.

Not only did Marie Curie win two Nobel Prizes, but her family has been the recipient of five total Nobel Prizes. She won two, her husband, Pierre Curie, won one. Her daughter, Irène Joliot-Curie, won the Chemistry Prize in 1935 with her husband. Her second daughter was also the director of UNICEF when it won the Nobel Peace Prize in 1965.

NOBEL PRIZES:

1903 Prize: The 1896 discovery of radioactivity by Henri Becquerel inspired Marie and Pierre Curie to further investigate this phenomenon. They examined many substances and minerals for signs of radioactivity. They found that the mineral pitchblende was more radioactive than uranium and concluded that it must contain other radioactive substances. From it they managed to extract two previously unknown elements, polonium and radium, both more radioactive than uranium.

1911 Prize: After Marie and Pierre Curie first discovered the radioactive elements polonium and radium, Marie continued to investigate their properties. In 1910 she successfully produced radium as a pure metal, which proved the new element's existence beyond a doubt. She also documented the properties of the radioactive elements and their compounds. Radioactive compounds became important as sources of radiation in both scientific experiments and in the field of medicine, where they are used to treat tumors.

HOROSCOPE

Aries: strong people

Taurus: patient people

Gemini: bipolar people

Cancer: imagination people

Leo: extrovert people

Virgo: employee people

Libra: lovely people

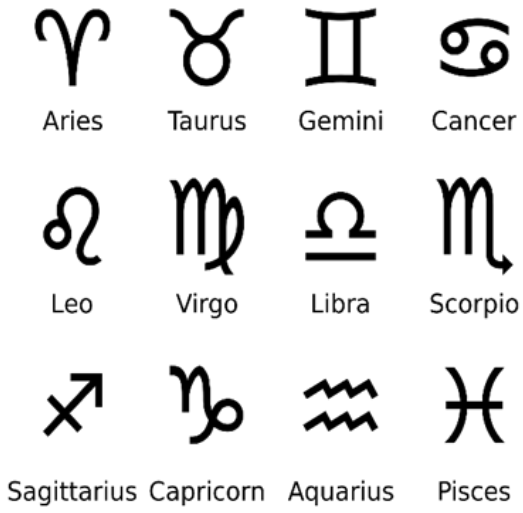
Scorpio: intuitive people

Sagittarius: sincere people

Capricorn: impulsive people

Aquarius: active people

Pisces: sweet person



Do this amazing test :

1. What category are snakes classified in?

A. Amphibians **B.** Reptiles **C.** Mammals

2. Which of the following life cycles of the butterfly is correct?

A. Larva, egg, butterfly, pupa **B.** Egg, pupa, larva, butterfly **C.** Egg, larva, pupa, butterfly

3. Which category do spiders belong to?

A. Insects **B.** Arachnids **C.** Reptiles

4. What group do bats belong to?

A. Mammals **B.** Birds **C.** Reptiles

5. What is the hottest planet in the solar system?

A. Mercury **B.** Venus **C.** Mars

6. How many layers are there in the rainforest?

A. 2 **B.** 3 **C.** 4

7. What is the name of the top layer of the rainforest?

A. Canopy **B.** Emergent **C.** Subterranean

8. What is the correct term for moisture that falls to the ground from clouds?

A. Precipitation **B.** Condensatio **C.** Evaporation

9. Which of Newton's three laws applies to the following statement? For every action there is an equal and opposite reaction.

A. Newton's First Law **B.** Newton's Second Law **C.** Newton's Third Law

10. What do plants need in order to grow properly?

A. Carbon **B.** Hydrogen**C.** Helium

ELECTRICITY

What would life be without electricity to power your favourite video games, television shows, telephones and even the lights you read by at night?

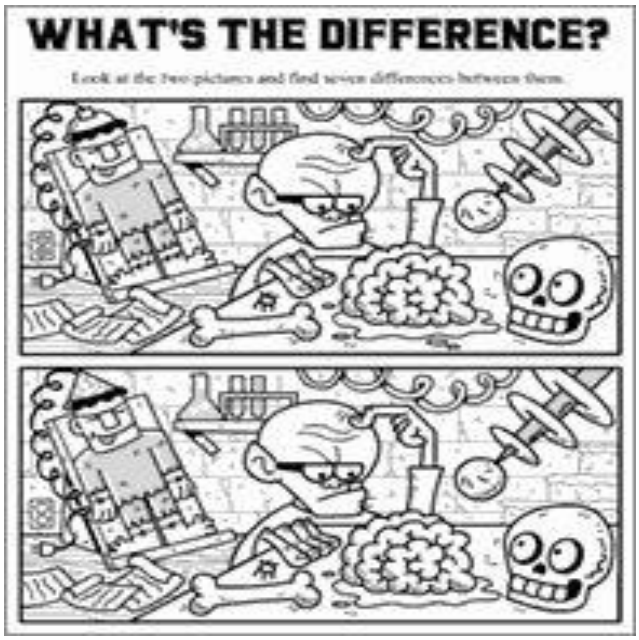
Just think… without electricity, you wouldn't be able to enjoy your daily Wonder of the Day! What a terrible thought! But don't worry. Electricity does exist and it permit us to enjoy life in so many ways.

Electricity is the group of physical phenomena associated with the electric charge. It's a form of energy and it occurs in nature, so it was not "invented". Electricity gives a wide variety of well-known effects.

Most people give credit to Benjamin Franklin for discovering electricity. Benjamin Franklin had one of the greatest scientific minds of his time. He was interested in many areas of science, made many discoveries and invented many things, including bifocal glasses.In 1752, he conducted his experiment with a kite, a key, and a storm. This simply proved that lightning and tiny electric sparks were the same thing.

In 1831 electricity became viable for use in technology when Michael Faraday created the electric dynamo (a crude power generator), which solved the problem of generating electric current in an ongoing and practical way.

Swan and Edison later set up a joint company to produce the first practical filament lamp, and Edison used his direct-current system (DC) to provide power to illuminate the first New York electric street lamps in September 1882. Later Nikola Tesla became an important contributor to the birth of commercial electricity.



HOROSCROPE

A horoscope is an astrological chart or diagram representing the positions of the Sun, Moon, planets, astrological aspects, and sensitive angles at the time of an event, such as the moment of a person's birth.

There are 12 zodiac sings:

Capricorn: Dec. 22-Jan. 19 Aquarius: Jan. 20-Feb. 20

Pisces: Feb. 19-Mar. 20 Aries: Mar. 21-Apr. 19

Taurus: Apr. 20-May. 20 Gemini: May. 21-Jun. 20

Cancer: Jun. 21-Jul. 22 Leo: Jul. 23-Aug. 22

Virgo:Aug. 23-Sep. 22 Libra: Sep. 23-Oct. 22

Scorpio: Oct. 23-Nov. 21 Sagitarius: Nov. 22-Dec. 21

1. Which sign is?

2. Draw the correct sign in the correct place.

a) Capricorn.
b) Leo.
c) Aries

3. Write the missing letters.

a) A_ uar_ us.
b) _ irg_.
c) Sc_ rp_o.

MARS-ONE

With space programs closing down, the future of space exploration could be seen as quite bleak.

With crowd sourcing and renewed public interest in space travel, we can see the beginnings of a new space age. MARS-ONE is a wonderful project envisioned by Dutch entrepreneur Bas Lansdrop.

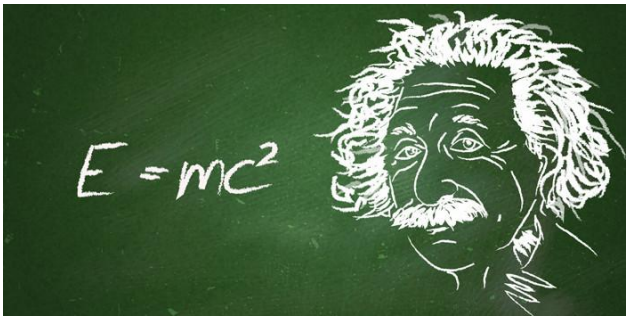
The plan is to send communication satellites to the planet in 2018. MARS-ONE is planning to land the first people on Mars. This is not just a round trip, these people would be setting up a permanent colony, which should be established by 2023.

The people at MARS-ONE hope to introduce a reality TV show, which will provide a large part of the income for the mission. It is expected to only put the first four astronauts on Mars will cost approximately $6,000 million. MARS-ONE has identified potential suppliers, such as space X, for the components of the mission. They claim that the cost would be significantly reduced making it a one-way trip.

This could be the very beginning of the human colonization on Mars, leading to access to rare earths and other minerals on the planet´s surface, as well as further research and technological advances, and possibly an answer to the steadily increasing population on Earth.

The Living Unit is a Lander that has a unique, inflatable living section and airlock used by the astronauts when leaving the sealed, habitable settlement. The Living Unit will be set in place by the Rovers and filled with breathable air by the Life Support Unit prior to the arrival of the astronauts. The Lander contains construction materials for the astronauts to construct rooms, floors and install electrical outlets. The Lander itself contains the ¨wet areas¨, such as the shower and kitchen.

ALBERT EINSTEIN



Albert Einstein was born in Wurttemberg, Germany in March 14, 1879. Albert Einstein was a German physicist who developed the theory of relativity. He is considered the most influential physicist of the 20th century. Albert Einstein had a passion for inquiry that eventually develop the theories of relativity. He create a formula of the relativity: E=mc2. He was very interested in science and mathematics. His ambition was to obtain the diploma of a subject teacher for mathematics and physics.

He did not like lessons as they were held with strict discipline and as he was forced to learn. When he was 15, he left school without any degree and followed his family to Milan. To make up for the missed degree he attended school in Aarau from 1895 to 1896 when he successfully took his A-levels and began to study in Zurich. Six weeks later the family moved to Munich, where he later began his schooling at the Luitpold Gymnasium. Later, they moved to Italy and Albert continued his education at Aarau, Switzerland and in 1896 he entered the Swiss Federal Polytechnic School in Zurich to be a teacher in physics and mathematics. In 1901 he gained his diploma, he acquired Swiss citizenship and he accepted a position as technical assistant in the Swiss Patent Office. In 1905 he obtain his doctor´s degree. He finished his studies in July 1900.

Albert Einstein is the first child of the Jewish couple Hermman and Pauline Einstein but all development of young Albert was a normal one. In November 1881 Albert´s sister Maria (called Maja) was born. A short time later the Einstein family went to Munich and then to Italy. They were very happy. Albert Einstein died in 18th of April, 1955 by an epidemic.

QUESTIONS

WHAT IS NASA DEVELOPING

A)GOING TO MARS

B)a spaceship

C)going to saturn

WHAT IS THE NASA´S NEXT PROJECT

A)explore china

B)EXPLORE THE SPACE

C)explore the moon

IS THERE WATER ON MARS

A)YES

B)no

C)I don't know

Nobel prize winners

There are some winners in physics.

Henry becquerel won the price in 1896 he discovered the radioactivity inspired in Marie Curie he investigate further this phenomenon. They examined many subtances and minerals for signs of radioactive subtances. They extract two previusly unknown elements.

After **PiereCurie** and **Marie Curie** dicovered the radioactive

Elements poloniun and radium, Marie investigate their properties.

Rabindranath Tagore - From Unknown to Famous Fairly unknown in Europe at the time, Bengali poet and Nobel Laureate Rabindranath Tagore attracted western readers with his aura of mysticism

Albert Einstein - Not Only the Theory of Relativity

Although famed for his theory of general relativity, it was his law about light that gave Albert Einstein the Nobel Prize in Physics 95 years ago.

Martin Luther King Jr. - A Champion of Peace

Martin Luther King Jr. was awarded the 1964 Nobel Peace Prize for his struggle for civil rights and social justice. He held his acceptance speech in Oslo, Norway, on 10 December 1964.

IN MEMORIAN

Sir Harold Kroto 1939-2016 Sir Harold Kroto was awarded the 1996 Nobel Prize in Chemistry for the discovery of carbon atoms bound in the form of a ball - fullerenes. He passed away on 30 April, 76 years old.

Walter Kohn Passes Away Walter Kohn passed away on 21 April, 93 years old. He was awarded the 1998 Nobel Prize in Chemistry for his development of the density-functional theory. This presented new opportunities for calculations involving chemical structures and reactions.

Lloyd S. Shapley 1923-2016 Lloyd S. Shapley, awarded the Prize in Economic Sciences 2012 "for the theory of stable allocations and the practice of market design", passed away on 12 March, 92 years old.

Alfred G. Gilman Passes Away Alfred G. Gilman, 1994 Nobel Laureate in Physiology or Medicine, died on 23 December, 74 years old. He was awarded for the discovery of G-proteins and the role of these proteins in signal transduction in cells.

Chemistry Prize

Nobel Prize in Chemistry The Nobel Prize in Chemistry was awarded jointly to **Tomas Lindahl, Paul Modrich** and **Aziz Sancar** "for mechanistic studies of DNA repair".

"I'm not a politician. I'm not used to talk on two phones at the same time." Life is getting busy for Tomas Lindahl, awarded the 2015 Nobel Prize in Chemistry. In this short interview, Tomas Lindahl also talks about his research and early days in Sweden.

"Shock. Surprise. Excitement" Paul Modrich was on vacation in his little cabin in the woods in New Hampshire when he got the news through e-mail that he had been awarded the 2015 Nobel Prize in Chemistry. "I'm in the right place at the right time."

Aziz Sancar: "I'm honored to get this recognition" "My wife took the call and woke me up". Chemistry Laureate Aziz Sancar on being awarded the Nobel Prize.

The Nobel Prize in Chemistry 1901-2000 During the beginning of the 20th century chemistry flourished, and that time is intimately connected with fundamental developments.

QUESTIONS ?

1 IN WHAT YEAR WAS BORN ISAAC NEWTON?

A-1655

B-2001

C-1643

D-1740

2 WHERE DID ISAAC NEWTON STUDY?

A-EL VALLE LAS TABLAS

B-STANDFORD

C-ALFONSO X EL SABIO

D-TRINITY COLLEGE

3 WHAT WAS ISAAC NEWTON?

A-A TEACHER

B-DOCTOR AND PHYSICIST

C-PHYSICIST

D-MATHEMATICIAN AND PHYSICIST

4 WHAT DID ISAAC NEWTON DISCOVERED?

A-PRINCIPIE AND DARK HOLES

B-PRINCIPIA AND OPTCS

C-PRINCE AND DARK HOLES

D-OPTICS AND PRINCIPIA

THE ELEPHANT´S TOOTHPAST

You will need

- A clean 16 ounce plastic soda bottle
- 1/2 cup 20-volume hydrogen peroxide liquid (20-volume is a 6% solution, ask an adult to get this from a beauty supply store or hair salon)
- 1 Tablespoon (one packet) of dry yeast
- 3 Tablespoons of warm water
- Liquid dish washing soap
- Food coloring
- Small cup
- Safety goggles

What to do?

Hydrogen peroxide could irritate skin and eyes, so you should put on those safety glasses

1. Add 8 teaspoons of the coloring you prefer.
2. Add 1 tablespoon of liquid dish soap into the bottle and swish the bottle around a bit to remove it.
3. In a small cup, mix the warm water and the yeast together and remove for about 30 seconds.
4. Now is when starts the best part. Pour the yeast water mixture into the bottle (you can use a funnel) and watch how it starts.

How does it work?

The foam you made is special because each tiny foam bubble is filled with oxygen. The yeast acted as a catalyst , take out the oxygen of the hydrogen peroxide. Since it did this very fast, it created lots and lots of bubbles. Did you notice the bottle got warm. Your experiment created a reaction called an Exothermic Reaction –the meaning of that is that it not only creat a foam, you , it created heat! The foam produced is just water, soap, and oxygen so you can wash it up with a sponge and pour any extra liquid left in the bottle down the drain.

ISAAC NEWTON

Isaac Newton was born on January 4th ,1643 in Woolsthorpe, England. He was a physicist and mathematician, he is recognized as one of the most influential scientist of all time an a figure in the scientific revolution. He studied in Cambridge and in Trinity College. Newton died in London on March 31, 1727

DISCOVERIES :

1. PRINCIPIA:

Newton's Principia formulated the laws of motion and universal gravitation which dominated the view of the scientist for the next three centuries. Newton removed the doubts about the validity of the heliocentric model of the Solar System.

2. OPTICS:

Optics was another area of Newton's interest. He tried to explain how colors occur. He discovered that sunlight is a heterogeneous blend of different rays each ray represents a different color, refractions cause colors to appear by separating the blend into components

COMPLETE THE WORDS :

. S_IE_C_

. _EW_O_’ S

. _AGA_I_E

. THE V _L_E

. TE_C_ER

. G_AVI_ATI_N

. WO_K

. M_R_

WRITE THE ANIMAL :

JUMP AND IS IN AUSTRALIA:
_____

IS GREEN AND LIVE IN THE WATER:
_____

HAVE A BIG EARS:
_____

THE ANIMAL CAN FLY , IS VERY SMALL AND HAVE LINES:
_____

THE ANIMAL HAVE A LONG EARS AND IS SMALL:
_____

IS WHITE AND BLACK AND IT IS IN CHINA:
_____

GLOBAL WARMING

1.WHAT IS GLOBAL WARMING?

Global warming is the gradual heating of Earth's surface, heating of Earth´s surface oceans and atmosphere.

2.THE CAUSES OF GLOBAL WARMING

Global warming is primarily a problem of too much carbon dioxide (CO_2) in the atmosphere which acts as a blanket, trapping heat and warming the planet. Scientists have spent decades figuring out what is causing global warming.

To bring all this information together, the United Nations formed a group of scientists called the Intergovernmental Panel on Climate Change, or IPCC.

One of the first things scientists learned is that there are several greenhouse gases responsible for warming, and humans emit them in a variety of ways. Most come from the combustion of fossil in cars, factories and electricity production.

2.1.THE GREENHOUSE EFFECT

Greenhouse gases act like a mirror and reflect back to the Earth a part of the heat radiation, which would otherwise be lost to space. The major natural greenhouse gases are water vapor, carbon dioxide, methane and ozone.

3.THE CONSEQUENCES OF A WARMING WORLD

Over the last century, global average temperature has increased by more than 1º F (0.7ºC). The 2001-2010 decade is the warmest since 1880.

In fact, nine of the last 10 years. This warming has been accompanied by decrease in very cold days and nights an increase in extremely hot days and warm nights.

4.WHAT CAN WE DO?

Individual, regional, and national actions can all add up to global solutions.

Biodegradable products

A “Biodegradable “ product has the ability to break down safely and relatively quickly by biológical means, into the raw materials of nature and disappear into the environment. These products can be solid biodegrading into (which we also refer to as compostable)

Sustainable disposal of any product requires that it wastes return to the earth and are able to biodegrade . Nature biodegrades everything is make back into básic building Blocks, so that New living things can be made from old .

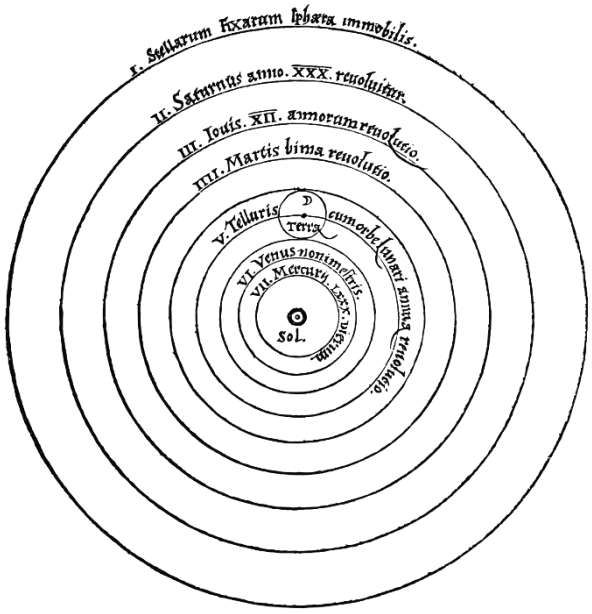
Some products May produce harmful toxins as they break down while others. Can take more than 30 years to break down . Or can not break down in land files . Read product's label and reviews when Shopping for biodegradable items to ad to your house . You most likely use more biodegradable products on a daily basic in your home than you are conscioly aware of.

Some of These items incluye food scraps and coffe grounds ,papel towels ,toilet paper , Newspaper, Junk mail...

SUN THEORY

HELIOCENTRISM

Heliocentrism ,is the astronomical model in which the Earth and planets revolve around the Sun at the center of the Solar System .Heliocentrism was opposed to geocentrism, which placed the Earth at the center.The notion that the Earth revolves around the Sun had been proposed as early as the 3rd century.
Until the 16th century that a geometric mathematical model of a heliocentric system was presented, by the Renaissance mathematician, Nicolaus Copernicus , Copernican Revolution . Johannes Kepler elaborated upon and expanded this model to include elliptical orbits, Galileo Galileo presented observations made using a telescope. Astronomers realized that the sun was not the center of the universe . There is no a specific location that is the center of the universe.
Three apparent proofs of the heliocentric hypothesis were provided in 1727 by James Bradley , in 1838 by Friedrich Wilhelm Bessel and in 1851 by Foucault. Bessel proved that the parallax of a star was greater than zero in the same year Friedrich Georg Wilhelm and Thomas Henderson measured the parallaxes of the stars.



MODERN USE OF GEOCENTRIC AND HELIOCENTRIC

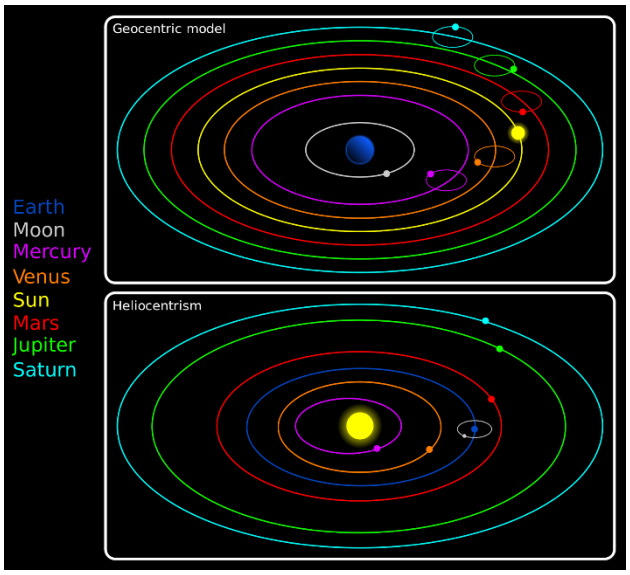
In modern calculations the terms geocentric and heliocentric are often used to refer to reference frames. The origin in the center of mass of the Earth , of the Earth-Moon system, of the Sun plus the major planets, or the entire solar system can be selected.

COPERNICUS

The idea of placing the sun at the center of the universe was not a particularly new one. But few either saw advantage to it and many considered it physically impossible.
Copernicus was aware of earlier writings which suggested a moving earth. The earth was not a particularly fit object to be the center of the universe but that the sun was a more divine object and thus more fit for the center. Heliocentric model apart was its simplicity.

COPERNICUS MODEL HANDLED THE BASIC OBSERVATIONS

-Like the geocentric model, the earth was believed to be round.
-The earth rotated,and thus the stars,sun,and planets appeared to move around the earth.
-Mercury and Venus were closer to the sun than the earth and so always appeared near the sun.



-Aries : the love in your life will be successful.
-Tauro : a not friendly person, behave better.
-Geminis : peaceful, keep in your own way, you can do it.
-Cancer : you have to be extrovert, try to speak in public.
-Leo : you are going to be successful in the next month.
-Virgo : you are a person with a big heart, you are doing right.
-Libra : your life is very successful, but maybe you should open your social life.
-Escorpion : you live in a different world because you are always in love.
-Sagitario : do not be so ambitious, open your heart to different persons.
-Capricornio : you are so friendly one day you will choose the right way to shine.
-Acuario : you love been with friends, that will help you in life.
-Piscis : this month you will meet a great person and you will fall in love with him or her.

FUTURE PLANS

PHYSICS

A visualisation of the future,the present,and the past light cone in 2D space.
In physics, time is a fourth dimension.Physicist argue that space-time can be understood as a sort of stretchy fabric that bends due to forces such as gravity. In the flow of time is relative to the observers.The faster an observer is traveling away from a reference object,the slower that object seems to move through time.
While a person can move backwards or forwards in the three spatial dimensions,
many physicists argue you are only able to move forward in time.
One of the outcomes of Special Relativity Theory is that a person can travel into the future by traveling at very high speeds.While this effect is negligible under ordinary conditions,space travel at very high speeds can change the flow of time considerably.As depictedin many stories and movies.

COMPUTER SECURITY also known as cybersecurity or IT security,is the protection of information sistems from theft or damage to the Hardware, the Software,and to the provide.It includes controlling physical access,data and code injection,and due to malpractice by operators, wheter intentional,accidental,or due to them being tricked into deviating from secure producers.

The field is of growing importance due to the increasing reliance on computer systems in most societies.Computer systems now include a very wide variety of smart devices,including smartphones,televisions and tiny devices as part of the Internet of Things and networks include not only the Internet and private data networks,but also Bluetooth,Wi Fi and other wirereless networks.

5	3			7				
6			1	9	5			
	9	8					6	
8				6				3
4			8		3			1
7				2				6
	6					2	8	
			4	1	9			5
				8			7	9

Stephen Hawking

Stephen William Hawking was born on 8 January 1942 (300 years after the death of Galileo) in Oxford, England. His parents' house was in north London, but during the second world war, Oxford was considered a safer place to have babies. When he was eight, his family moved to St. Albans, a town about 20 miles north of London. At the age of eleven, Stephen went to St. Albans School and then on to University College, Oxford; his father's old college. Stephen wanted to study Mathematics, although his father would have preferred medicine. Mathematics was not available at University College, so he pursued Physics instead. After three years and not very much work, he was awarded a first class honours degree in Natural Science.

Stephen then went on to Cambridge to do research in Cosmology, there being no one working in that area in Oxford at the time. His supervisor was Denis Sciama, although he had hoped to get Fred Hoyle who was working in Cambridge. After gaining his Ph.D. he became first a Research Fellow and later on a Professorial Fellow at Gonville and Caius College. After leaving the Institute of Astronomy in 1973, Stephen came to the Department of Applied Mathematics and Theoretical Physics in 1979, and held the post of Lucasian Professor of Mathematics from 1979 until 2009. The chair was founded in 1663 with money left in the will of the Reverend

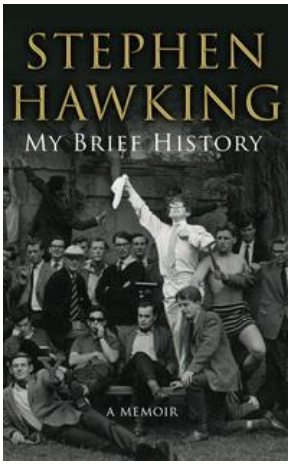
Henry Lucas who had been the Member of Parliament for the University. It was first held by Isaac Barrow and then in 1669 by Isaac Newton. Stephen is still an active part of Cambridge University and retains an office at the Department for Applied Maths and Theoretical Physics.

Stephen Hawking has worked on the basic laws which govern the universe. With Roger Penrose he showed that Einstein's General Theory of Relativity implied space and time would have a beginning in the Big Bang and an end in black holes. These results indicated that it was necessary to unify General Relativity with Quantum Theory, the other great Scientific development of the first half of the 20th Century. One consequence of such a unification that he discovered was that black holes should not be completely black, but rather should emit radiation and eventually evaporate and disappear

Stephen was diagnosed with ALS, a form of Motor Neurone Disease, shortly after his 21st birthday. In spite of being wheelchair bound and dependent on a computerised voice system for communication Stephen Hawking continues to combine family life (he has three children and three grandchildren), and his research into theoretical physics together with an extensive programme of travel and public lectures. He still hopes to make it into space one day.

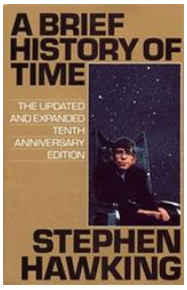
Books

Professor Hawking has published many books tackling the fundamental questions about the universe and our existence. Stephen has also published many scientific papers and lecture notes.



My Brief History

My Brief History recounts Stephen Hawking's improbable journey, from his post-war London boyhood to his years of international acclaim and celebrity. Illustrated with rarely seen photographs, this concise, witty and candid account introduces readers to the inquisitive schoolboy whose classmates nicknamed him 'Einstein'; the jokester who once placed a bet with a colleague over the existence of a black hole; and the young husband and father striving to gain a foothold in the world of academia.



A Brief History of Time

Stephen Hawking, one of the most brilliant theoretical physicists in history, wrote the modern classic A Brief History of Time to help non-scientists understand fundamental questions of physics and our existence: where did the universe come from? How and why did it begin? Will it come to an end, and if so, how?

Public Lectures

Into a Black Hole 2008

Is it possible to fall in a black hole, and come out in another universe? Can you escape from a black hole once you fall inside? In this lecture I talk about some of the things I've found out about black holes.

The Origin of the Universe 2005

Why are we here? Where did we come from? The answer generally given was that humans were of comparatively recent origin, because it must have been obvious, even at early times, that the human race was improving in

knowledge and technology. So it can't have been around that long, or it would have progressed even more.

Space and Time Warps 1999

In science fiction, space and time warps are a commonplace. They are used for rapid journeys around the galaxy, or for travel through time. But today's science fiction, is often tomorrow's science fact. So what are the chances for space and time warps.

Life in the Universe 1996

In this talk, I would like to speculate a little, on the development of life in the universe, and in particular, the development of intelligent life. I shall take this to include the human race, even though much of its behaviour through out history, has been pretty stupid, and not calculated to aid the survival of the species.