KIDS NEWS E+

#1
FEBRUARY
2018

PhYSICS

PSI PHYSICS

ALBERT, STRAWBERRY ICE CREAM FOR U

THE UNCROWNED QUEEN OF SCIENCE

You have just opened a brand new magazine. Even though it is mainly prepared by pupils from six European countries, it is not a classical school magazine. You can look forward to nine issues of this magazine. Within two years teenagers and their teachers will try to show you their views on various school subjects. And that is, in a simplified way, the main content of the Erasmus+ project entitled Let's cross the boundaries of primary education together. The first issue is dedicated to physics.

It's my beloved, unruly queen of science. It blends with all disciplines - from philosophy, biology, mathematics to history, and guides us through our lives. Immediately after birth we were weighted and measured - weight and length are significant physical quantities; before we started walking, we often fell - we were looking for the center of gravity; we listen and also make sounds – so we can speak about the frequency. The world is primarily perceived by sight - light, colors. Why someone wears glasses, why we don´t see behind the corner, how the telescope or the microscope works? All the devices around us – a watch, an electric kettle, a mobile, a television, an airplane, a toilet, a lift - how does it work? That's physics again. And those ones - more inquisitive are asking: Why do they change day and night? How do stars emerge? Why do the planets turn around the Sun? Would you get energy from lightning? Is it possible to travel in time? We still do not know the answers for a lot of questions, but it's great to think of them and look for the answers.

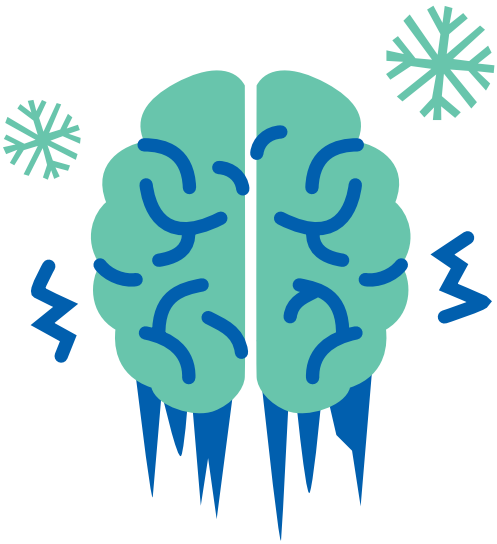
And here physics meets philosophy. I teach Physics at Primary School, Okružní 1235 in Most. So far we try to explain and answer simpler questions with my pupils. We do different experiments, we derive patterns, count, try what works, what doesn´t work on the other hand. We try to find how to use the knowledge of Maths, Chemistry, Biology, Geography, and other school subjects. We have found out that physics influences our everyday life and thus with everything what we learn at school.
I love working with inquisitive pupils. I myself often go to different courses and workshops and I like searching for new information to be a good guide for the pupils in this exciting field of physics which is constantly developing and it does not stop surprising us.

Drahoslava Vohnoutová

#MAKEPANCAKES

2 EGGS
200 G FLOUR
400 ML MILK
LITTLE BIT OF SALT

COOL BRAINS



EMPEDOCLES (490 B.C. – 430 B.C.)

Let me tell you a story about an ancient Greek physicist and philosopher, Empedocles. He was the one who introduced the idea that everything consists of a combination of fire, water, air and earth. He also believed he was immortal and, in order to prove it, he ascended Etna volcano with his students, and jumped into the crater (of course, he didn´t survive!).

Aggelos Fragkiadoulakis, Greece

FRANTIŠEK KŘIŽÍK (1847–1941)

With pleasure I would like to introduce you a Czech physicists František Křižík. He was a technician, industrialist and inventor. He invented the arc lamp with automatic control or light fountain. He also improved electric trams and other things.

Tereza Kubíková, Czech Republic

MAX PLANCK (1858–1947)

While most of Planck's colleagues thought that almost everything had already been dicovered, Planck proved them wrong by founding the field of quantum mechanics. He introduced constant h, which describes that energy can only have discrete (and not continuous) values. These energy portions are known as quanta.

Jan Großhennig, Germany

SONIA FERNÁNDEZ-VIDAL (born 1978)

She is a Spanish writer, researcher, entrepreneur and scientific disseminator. She worked at the European Center for Nuclear Research (CERN) in the new particle accelerator project Large Hadron Collider (LHC) but we like her because she combines her research with giving lectures of Physics, teaching and writing books about Quantum physics special for children and youth.

Kristel Nguetgna, Spain

EDUARD SLAVOLJUB PENKALA (1871–1922)

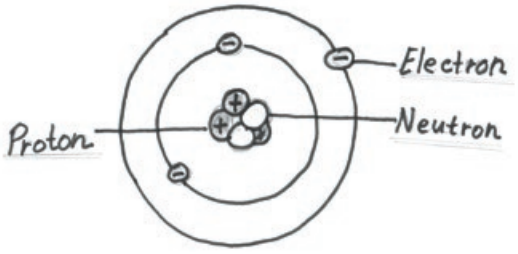
He was a Croatian engineer. A hot water bottle and rotating toothbrushes were among his first inventions. His greatest and most famous invention was an automatic mechanical pencil. Penkala reported it in 1906 and a few years later he also presented the first fountain pen.

Hana Jagec, Croatia

NIELS BOHR (1885–1962)

He was a Danish physicist who described the first quantum model of atom. He was a part of team that discovered a practical use for fission of the uranium nucleus. He also conceived the principle of complementarity: that items could be separately analysed in terms of contradictory properties, like behaving as a wave or a stream of particles. And used it not only in physics but in philosophy too.

Julie Christensen, Denmark



WINDOW TO SCHOOL

MOST (Czech Republic)

In the end of last year, pupils from classes eight and nine from our school tried to practise their knowledge of Physics, Maths and other natural science. They participated in an international competition named „Náboj Junior“ for the first time.

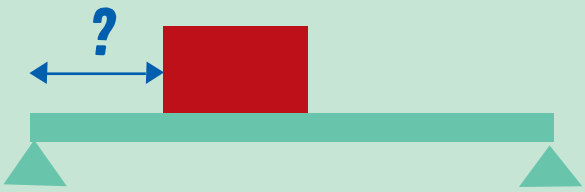
The competition is prepared for teams consisting of four members of secondary schools from Czech Republic, Slovakia and Poland. The competition takes 120 minutes and the teams try to solve as many tasks as they can. Every next task is more difficult. Náboj wasn't about thoughtless use of already known things. The tasks required a certain amount of invention and wit. Our team achieved 15th place among the 30 participating schools.
Soon after the end of the competition you can see the international comparation of all teams. Even in it, we took qiute a good position.
The competition was interesting and funny experience. We cooperated in team and each of us could add something. We had opportunity to solve tasks when it was not enough to know right formula or definition. We had to engage physically – we had to run for each task. We are looking forward to it next year again.

Mariana Krausová

Can you solve this task?

THE SHELF

Marco has bought a very rare homogeneous brick with dimensions of 10 cm, 20 cm a 25 cm. He wanted to put this brick on the shelf in the room. The shelf is strong enough, has a negligible weight and a length of 1 m. The shelf is fixed to a wall at both ends weighing a maximum of 20 kg. So Marco can not put the brick in any place on this shelf. How close can be placed one site of the shelf from the left edge?



NEXT TIME I WILL BUY SOMETING LIGHTER

ODENSE (Denmark)

In Denmark our education in Physics is based on 6 areas of focus from the curriculums of the 3 subjects of Physics, Biology and Geography, in which the students will be tested at the end of Grade 9. The students must be able to show that they can conduct different experiments and explain the theory behind them. Most of the time we are working "hands on" and very often we do field trips.

Sebastian Sørensen

SANT BOI DE LLOBREGAT (Spain)

Last days we worked on electricity projects. We like creating electric circuits and there is an exhibition of our work in the second floor's corridor in our school. For example you can see a discotheque model, a ship, a house or Christmas landscape. But my favourite is the wind mill. The project is called Wind mill or Mill & lighthouse.
The materials needed are: two switches, a battery, a light bulb, a mill, foam, a methalic pipe, tape, cables, a wooden board, a motor and white and blue paint. It is like a beach with a wind mill with a light at the top. It has been done cooperatively but the main idea's author is a girl called Melanie. We have drawn it and you can see the model in the photos too.

Júlia Sánchez

PUZZLE

CAN YOU MATCH THE PICTURES TO THE WORDS?

clock

personal weight

thermometer

tachometer

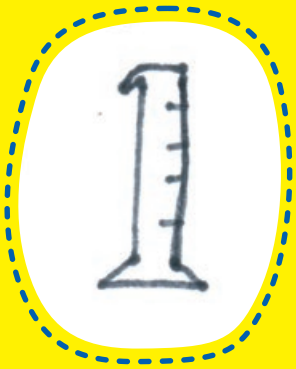
bulb

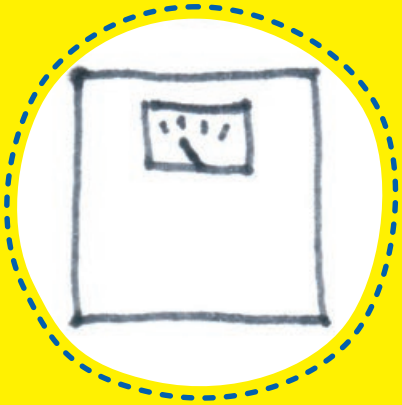
graduated cylinder

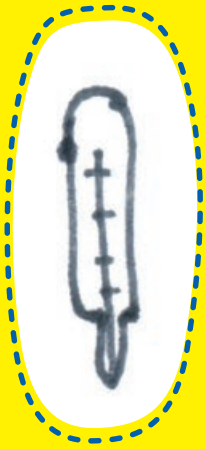
forcemeter

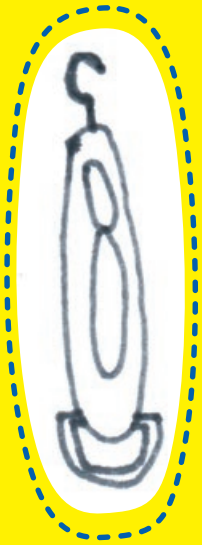
ruler

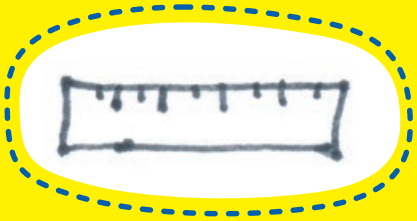
calculator

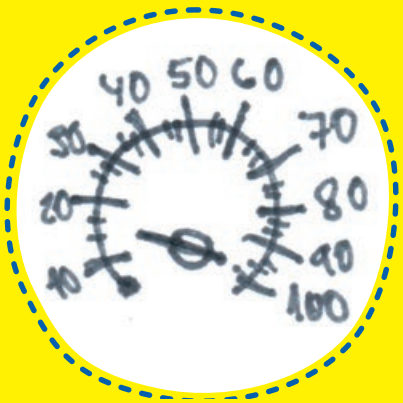












CAN YOU FIND AN INVENTOR?

1. Ohm law

a)  → B

b)  → K

c)  → M

2. What did T. A. Edison invent?

a) plastic → Ž

b) radiation → Č

c) periodic chart → Š

d) bulb → Ř

3. Velocity

a) v=s/t → I

b) t=v/s → E

c) s=t/v → A

1 2 3 4 5 6

4. What is measured by the measure cylinder?

a) force → L

b) weight → Ě

c) volume → Ž

d) velocity → K

5. Where was Einstein from?

a) Austria → É

b) Germany → Í

c) Czech R. → Á

d) Slovakia → Ů

6. What did Newton invent?

a) cat door → K

b) feed for hamsters → D

c) dog collar → J

d) horse breed → P

CAN YOU DISCOVER PHYSICAL VOCAB AND LEARN THEM?

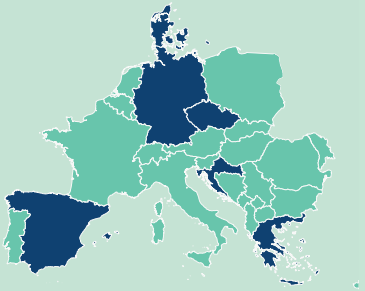
T W Y Y M D E E P S T L
A E G M W Q H T F K X Y
K I Y T I S N E D F X H
M G F P O E M Y W V C I
A H S O M J K D X U R S
G T Q I R Q O X Q K U U
N O T S Y C L T H G I L
E Z E T C C E R E V E L
T M U E Z I T X W Q M H
I U O M T H T F D X J C
S J A T M R D P U Z A S
M B I F A Y R Y O J Z P

OPTICS
FORCE
TIME
WEIGHT
LIGHT
ATOM
DENSITY
SPEED
LEVER
MAGNETISM

Alexandra Sarminová, Czech Republic

PARTICIPATING SCHOOLS

Základní škola, Most, Okružní 1235 (Most, Czech Republic)
Oberschule Westercelle (Celle, Germany)
Osnovna škola Strahoninec (Čakovec, Croatia)
A. E. Sygxrona Ekpaideftiria Trikalon (Trikala, Greece)
Rosengårdskolen (Odense, Denmark)
Escola Barrufet (Sant Boi de Llobregat, Spain)



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VOCABULARY

FORCE
SILA
SÍLA
KRAFT
KRAFT
DINAMI
FUERZA

ATOM
ATOM
ATOM
ATOM
ATOM
ATOMO
ÁTOMO

DENSITY
GUSTOĆA
HUSTOTA
MASSEFYLDE
DICHTE
PIKNOTITA
DENSIDAD

MAGNETISM
MAGNETIZAM
MAGNETISMUS
MAGNETISME
MAGNETISMUS
MAGNITISMOS
MAGNETISMO

OPTICS
OPTIKA
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OPTIK
OPTIK
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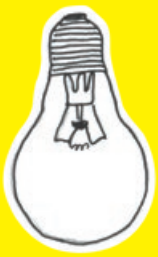
ÓPTICA

WEIGHT
TEŽINA
HMOTNOST
VÆGT
GEWICHT
VAROS
PESO

CUT AND COLLECT
#MEMORYGAME

TIME
VRIJEME
ČAS
TID
ZEIT
CHRONOS
TIEMPO

LIGHT
SVJETLO
SVĚTLO
LYS
LICHT
FOS
LUZ



TEMPERATURE
TEMPERATURA
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THERMOKRASIA
TEMPERATURA

SPEED
BRZINA
RYCHLOST
FART
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TACHITITA
VELOCIDAD

TIME
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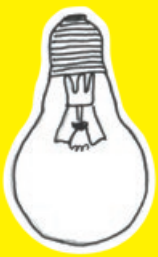

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THERMOKRASIA
TEMPERATURA

SPEED
BRZINA
RYCHLOST
FART
GESCHWINDIGKEIT
TACHITITA
VELOCIDAD

PHYSICS MAKES ME THINK HOW TINY ME AND MY PROBLEMS ARE AND HOW BIG THE UNIVERSE IS. IT MAKES ME CURIOUS AND I WANT CONSTANTLY TO LEARN MORE.

EVANGELIA KOUKIA, GREECE

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