Дата:12.09.2022

Група № 13

Урок № 3-4

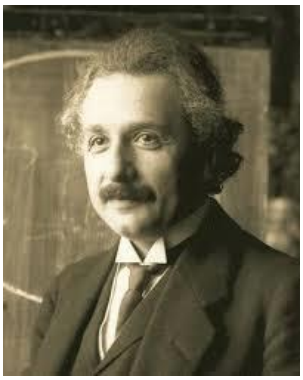
Тема уроку: ***«EINSTEIN'S TRIUMPH AND TRAGEDY. BATTERIES, RESISTIRS AND OHM'S LAW»***

Мета уроку: Ознайомити здобувачів освіти з новим лексичним матеріалом; вивчити нову лексику; узагальнити знання граматичного матеріалу.

Матеріал уроку:

1. Прочитайте та перекладіть текст.

Albert Einstein was a famous scientist who completely changed the way that people saw our world and the universe. Einstein created many theories which proved that things like gravity, light, energy and matter were connected with each other. At first, very few scientists could understand Einstein's theories but as time passed other scientists showed that he was correct.



Albert Einstein was born in Ulm, Germany in 1879 and grew up in Munich. He wasn't a good student at school and only did things he was interested in, like science and mathematics. At a very early age young Albert started wondering about the mysteries of the universe.

After school Einstein went to Switzerland and tried to become a teacher there, but he couldn't find a job. He went to work at the Swiss patent office in Bern where he studied what other people had invented.

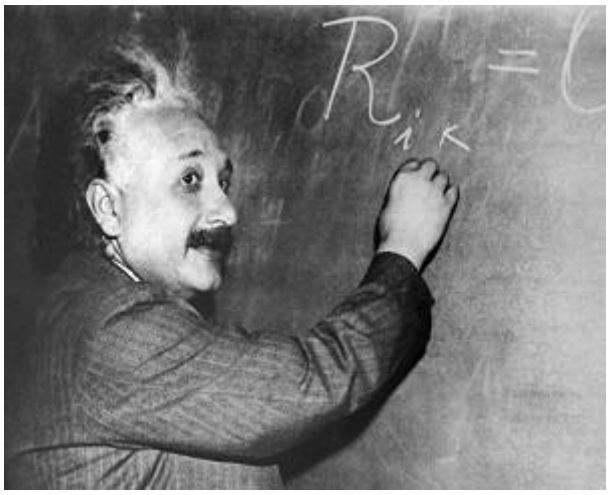
After divorce from his first wife, a classmate of his, Albert went to Berlin where he married his cousin Elsa. He lived in Berlin for a long time and there he developed many of his scientific theories. Einstein became so well-known that he was invited to universities around the world to talk about his discoveries. In 1921 he received the Nobel Prize for Physics.

In the meantime things were starting to change in Germany. Einstein was against the Nazis and their ideas of controlling the world and killing Jews. The Nazis, in return, hated him and his theories and they burned most of his books.

Einstein decided to leave Germany and go to the United States. When World War II broke out in 1939 Einstein discovered that German scientists were working on a bomb that could kill thousands of people. He wrote a letter to the American president to warn him and suggested that the Americans start building one too.

In 1941 the American government started the Manhattan project which led to the construction of the atomic bomb. Two of these bombs were dropped over Hiroshima and Nagasaki to end the war against Japan. Einstein was horrified when he heard the news. He wanted the world to use atomic energy for peaceful purposes.

For the last twenty years of his life, Einstein lived in Princeton where he continued his scientific work.



He died on April 18, 1955.

Einstein, as everyone knows, did something remarkable, but what exactly did he do? Even among educated men and women, few can answer. We are resigned to the importance of his theory, but we don't comprehend it. It is this circumstance which is largely responsible for the isolation of modern science. This is bad for us and bad for science; therefore more than curiosity is at stake in the desire to understand Einstein. Step by step Einstein came to his fateful mass-energy equation. "The mass of a body is a measure of its energy content", he wrote in 1905, and gave his now-famous formula, $E = mc2$, where E is energy content, m is mass (which varies according to speed) and c is the velocity of light.

When Einstein was 26, he put forward an idea which changed the world. His idea revolutionized our conception of the physical universe; its consequences have shaken human society.

Einstein's achievement is one of the glories of man. Unfortunately, the scientist's great idea first was used not for the benefit of man, but for his destruction. When he realized the ominous consequences of his fatal equation and the responsibility he bore and vehemently protested against the military use of his discovery. But in vain. Besides, it became clear that the benefits of the so-called peaceful use of nuclear energy become also highly questionable. Some great ideas may lead to still greater disasters. This was the triumph and tragedy of the genius.

2. Дати відповіді на запитання.

1. When and where was Einstein born?
2. What sciences he was interested in?
3. Where did he study?
4. When did he receive the Nobel Prize?
5. Einstein was against the Nazis, wasn't he?
6. What was happened in 1939?
7. Can you name Einstein's famous equation?
8. Did Einstein's great idea change the world?
9. What facts produced a strong impact on Einstein's moral outlook?
10. Could Einstein have foreseen the tragical consequences of his discovery?

3. Переписати на вивчити слова.

carbon – вуглець, вугілля
to immerse – погружати
dipped – втоплений
electrolyte – електроліт
potential difference – різниця потенціалів

of the order of – порядку (напр. порядку кількох вольт)

electromotive force, EMF – *електрорушійна сила, ЕРС*

positive (negative) pole – позитивний (негативний) полюс

strictly – строго, точно

zinc – цинк

carbon rod – вуглецевий стрижень

manganese oxide – оксид марганцю

ammonium chloride – хлористий амоній (нашатирний спирт)

goo – мастило, речовина для склеювання

flour – борошно, дрібний матеріал

glue – клей

nickelic hydroxide – гидроксид нікелю

potassium hydroxide – КОН, їдкий калій, каустична сода

(connected) in series – послідовно (з'єднані)

sulphuric acid – сірчана кислота

lead oxide – оксид свинцю

irreversibly damaged – невідновлювано пошкоджені

discard – відбракувати

electroplating – гальванічне покриття

to maintain – експлуатувати, підтримувати

to power – живити, надавати живлення

to imply – означати, мати в собі, передбачати

electronic device – електронний пристрій

casing – облонка

,

obvious - очевидно
iron bar залізна решітка
***to* attract** притягувати,
***to* repel** відштовхувати
nail гвоздь,
paper clip скріпка для паперу
***to* scatter** розкид(ув)ати
***to* surround** оточувати
***to* exert** викликати (дію)
source джерело
sink приймач, стік

***to* diverge** переломлювати
***to* converge** з'єднуватись
***to* suspend** підвішувати
Bathurst Island острів Батерст (Канада)
Wilkes Land Земля Уілкса (Антарктида)
resemblance подібність
loop контур

4. Перекладіть українською.

1. Exists a small potential difference.
2. Electric field between the poles.
3. Potential difference across the poles.
4. Cells connected together.
5. The outer casing of the cell.
6. Rather dirty mess.
7. The battery has to be discarded.
8. The word is "accumulator" used for a rechargeable battery.
9. The direction of flow of electricity in an electrolytic cell

Усі виконані завдання надсилайте на електронну адресу **gr.ev@ukr.net** з підписом у темі листа «ПІБ, № групи та назва навчальної дисципліни»