**5th LYCEUM-TRIKALA**  **ERASMUS+**

‘***’BATTERY RISKS WHEN NOT RECYCLED’’***

 The main features of batteries are life cycle, capacity and voltage.

§ Battery capacity is measured in Ampere (Ah). A battery with a capacity of 100Ah has the ability to provide 100A current for 1 hour (h) or 50A for 2 hours, and etc.

§ A factor affecting capacity is the battery discharge time. The sooner it discharges the more it reduces its capacity and provides less current.

§ The number of cycles of the batteries determines the time resistance. The more it is the longer the battery is running.

§ One battery makes a full cycle when discharged to the point specified by the manufacturer and recharged up to 100%. The number of cycles is shaped according to the discharge rate of the battery and is inversely proportional to it

§ Batteries can also be differentiated according to their voltage. The batteries used in standalone photovoltaics are 2Volt, 6Volt, 8Volt or 12Volt

***MERCURY***

Mercury is a heavy metal, silver-white in color and the only one which at a normal temperature remains in a liquid state.

It is resistant to the environment with a tendency to bio accumulate in the tissues of animals and plants. It is also a powerful poison. When it is released into the environment, it evaporates in the air and enters the human body by breathing.

***EFFECTS***

Mercury is toxic to the ecosystem and living organisms.

It is fatal to humans, and causes serious negative neurodevelopmental effects .

It also damages the cardiovascular, immune and reproductive system.

 It causes kidney damage and neurological disorders.

 Mercury still affects the human mind, the spine, the kidneys and the liver.

It affects our senses and long-term exposure can lead to symptoms such as personality changes, lethargy and coma.

 It can harm the embryo, since it affects fetal development by blocking the mind and the nervous system from normal development.

Children are more sensitive than adults to mercury poisoning

 Many animal categories, especially some birds, already have side effects from mercury poisoning.

***Divine acid***

Sulfuric acid is an inorganic, strong, caustic acid. It is completely soluble in water and It is also a component of the batteries

***EFFECTS***

Sulfuric acid is corrosive and irritating, causing irritation to the skin, the eyes, the respiratory tract and the digestive tract.

Contact with eyes may cause blindness.

Swallowing sulfuric acid can cause burns in the tongue, throat, esophagus and stomach.

Symptoms can range from nausea and vomiting, to cardiac arrest.

***Carcinogenicity actions***

Prolonged exposure to concentrations of sulfuric acid is carcinogenic for humans.

Pathological symptoms occur mainly in the larynx and to a lesser extent in the lungs.

***Environmental effects***

Sulfuric acid causes degradation of surface and groundwater. Its effect on amphibian life is immediate by causing death in fish and any other life.

***Lead***

Lead causes increased blood pressure, anemia, brain damage, and behavioral disorders in children.

It can cause damage to the kidneys, liver, blood, dermatitis / allergies, lung damage / persistent respiratory problems and carcinogenicity.

Organic compounds of lead are absorbed by the skin, while inorganic from the intestine and lungs.

Lead in human body after absorption is found in three parts "tanks":

1. In blood and soft tissues, where they are swiftly exchanged.

2. In the skin and muscles, where the exchange takes place at medium speed.

3. On the frame, where it is more stable and found to be 90%. Lead is eliminated from the kidneys, bile, sweat and milk.

***Nickel***

Nickel, as a trace element, is essential for the human body, but when taken in large quantities it can be dangerous to man, causing various problems

Nickel enters the human body by inhalation, drinking water, eating food, smoking and contacting objects with nickel coating with human skin.

Nickel and its salts cause dermatitis, cancer development, respiratory failure, cardiac abnormalities and allergic reactions.

. It causes cancer in the lungs, sinuses, the prostate and the larynx. Additionally, renal cancer, gastric and sarcoma cancers have occurred.

It creates problems in the smooth functioning of the heart and lungs while contributing to the development of asthma, chronic bronchitis and vertigo.

It causes skin problems and contributes to the development of contact dermatitis, causing after a few hours of skin contact pruritus, irritation of the contact area and symptoms of redness, edema, lichenification, and exfoliation.

It damages marine flora and makes certain types of seafood unsuitable for consumption.

It causes poisoning, inhibition of growth and photosynthesis, selective accumulation and absorption in some species.

***Cadmium (Cd)***

Cadmium is a relatively rare, soft, slightly blue, toxic metal, discovered by Sotomayor in 1817 in zinc dust.

 It is a toxic and carcinogenic substance.

Ιt is known to be carcinogenic to humans.

Epidemiological studies show lung cancer and kidney damage.

Bone disorders and hematological disorders have also been observed.

A wider range of organ toxicity has been demonstrated in animals.

Concerning the negative effects of cadmium on the human body, according to research on cancer, it causes Obstructive Pulmonary Disease.