INSEF ABSTRACT BOOK

INDIAN SCIENCE & ENGINEERING FAIR (INSEF)

INSEF Regional Fair – Bangalore

November 11th, 2017

Conducted By

VAGDEVI VILAS INSTITUTIONS

in association with

Science Society of India

http://sciencesociety.in

on November 11th, 2017 at

Vagdevi Vilas School (Varthur Branch)

Sy no.124/5 & 218, Nekkundi Dommasandra road, Varthur, Bangalore – 560 087

(The abstract text provided is exactly as submitted by the participants)

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**Title: Predicting Vehicle Behaviors and Outcomes in Chaotic Traffic
using an Uncontrolled Intersection**
Name: Niveditha Subramanyam Iyer Std: 10
Guide: Dr Skanda Vivek
School: National Public School - Koramangala, Bangalore

ABSTRACT:

Adopting advances in transportation, such as self-driving cars and algorithmic travel time predictions, to Indian roads can be daunting. Many street intersections in our cities have neither traffic lights nor human controllers. During rush hour these intersections appear chaotic as approaching vehicles compete to cross over. We captured and analyzed the video footage of traffic at one such intersection. Using Game Theory we found that pairs of vehicles competing to clear the intersection behaved like players in a game. Each vehicle could choose from five distinct options: Yield, Go, Veer Left, Veer Right or Preempt (the competing vehicle). Whenever options to veer left/right or preempt were not viable due to the traffic density, the 5x5 payoff matrix collapsed into a 2x2 "Game of Chicken" wherein the outcomes coincided with the pure-strategy Nash Equilibria but mixed strategy equilibrium was not observed. Instead, the heavier the class of one vehicle versus the other, the higher was its likelihood of winning by passing through the intersection first. Using these predictable patterns in vehicle behaviors, we developed a cellular automaton simulation of the traffic. This can be used to train autonomous vehicles and improve travel duration estimates for the chaotic traffic conditions on Indian roads.

Title: Effect of temperature on multiplication of earthworms.
Name: Arun R & Nikhilesh Singh Std: 9
Guide: Govindan
School: Vagdevi Vilas School, Marathahalli

ABSTRACT:

This is a project to observe the growth rate of earthworms in different temperatures. Procedure for our project- For this experiment we have taken container no. 1 and filled it with water and a placed a sub container no. 1 inside it and filled it with leaves and put 100g red worms. In container no. 2 , we have

taken soil and placed inside it and then placed a sub container in the middle of it and filled it with leaves and put 100g red worms. For the third one we will dig a pit in the vermicomposting unit of our school and place a wooden plank inside so that earthworms don't escape and then put 100g red worms in it. For the last one we are going to dig a pit in the normal ground and put the wooden plank so that the earthworms don't escape and put 100g red worms in it. After all this we will observe the temperatures of the four every alternate day and then weight the earthworms to differentiate between the multiplication rate. We will also take pictures of the same and then make a observation column for it.

Project Code: **BehvSc-03 (Team)**   Online ID:2407

Title: SPIDER WEB CONSTRUCTION STUDY TO SEE HOW IT ACTS AS A POLLUTION CONTROLLING WEB
Name: Amulya.v & baby kruthika Std: 9th std
Guide: shalini.s
School: vagdevi vilas school,Bidadi,Bangalore

ABSTRACT:

Spiders are found worldwide on every continent except Antarctica, and have become established in nearly every habitat with the exceptions of air and sea colonization.   Spiders are air-breathing arthropods that have eight legs. They are the largest order of arachnids and rank seventy in the total species diversity among all other DIVERSITY: 113 families, c.46000 species   colonization. kingdomAnimallia PhylumArthropoda SubphylumChelicerataClassArachnidaOrderAraneaeClerae, 1757 SUBORDERS: Mesothelae   Opisthothelae   See spider taxonomy Another interesting subject we found is spider use electricity to catch prey and airborne particulates thus is helps in pollution control,spider can able to conduct electricity across the surface of the web,which attracts the potential prey .We studied this interesting behavior and recorded through camera.The glue that makes spider webs are sticky is electrostatic and attracted to any charged particles it comes across .The glue's static charge actually interferes with the Earth's natural electric field,so the web is drawn to anything that comes within a few millimeters of it.The web is also capable of grabbing pollution particles like pesticides or fertilizers.In fact ,spider act as environment sensors in order to

investigate local pollution levels without the need for electric sensors.We found that pollution impact on the web construction.As we have seen the following observation in the study area that is chinnapanhalli lake area, where we got diversity of organisms we observed: greater cormorant Painted stork, butterflies like perfecto, common rose butterfly etc.., different mantis species.These many diversities observed because of the presence of 9 different web of spiders in that area at a perimeter of 45.93meter areaAt first weak,morphometry and spider web observedname of spider   Smeringopus pallidus Black wall -3.5 cm-4times it made web/four daysPlexippus paykulli   - 1 cm-2times/four daysTelamonia dimidiate   - 1 cm/4times /four daysweb construction direction of female is south to north ,where as male will fill the pores left in the web,different species web is distinct our innovation in this method is to modify the spinneret function by changing the diet and to design protein enriched food for spider to increase the spider web quality ,to test the constructed web in capturing pollutionOutside the laboratory we observed that spiders like to keep its surrounding clean. (acts as a purifier) It hags its prey which the spider wants to eat later. Not just the prey but also the leaves, cork etc. Another interesting subject we found is spider use electricity to catch prey and airborne particulates thus is helps in pollution control,spider can able to conduct electricity across the surface of the web,which attracts the potential prey .We studied this interesting behavior and recorded through camera.The glue that makes spider webs are sticky is electrostatic and attracted to any charged particles it comes across .The glue's static charge actually interferes with the Earth's natural electric field,so the web is drawn to anything that comes within a few millimeters of it.The web is also capable of grabbing pollution particles like pesticides or fertilizers.In fact ,spider act as environment sensors in order to investigate local pollution levels without the need for electric sensors.We found that pollution impact on the web construction.As we have seen the following observation in the study area that is chinnapanhalli lake area, where we got diversity of organisms we observed: greater cormorant Painted stork, butterflies like perfecto, common rose butterfly etc.., different mantis species.These many diversities observed because of the presence of 9 different web of spiders in that area at a perimeter of 45.93meter area

Title: **WESTREN GHAT NATIVE MEDICINE INFUSION OF P SANTALINUS ESSENTIAL OIL IN COCONUT OIL AND SIDA CARDIFOLIA MADE KSHEERA BALA THAILA USED FOR INFANT SKIN CARE:**

Name: Akshita.a & Thanuja.k.r Std: 8th std
Guide: shalini.s
School: vagdevi vilas super school,marthahalli

ABSTRACT:

My guide's mother is good in native Ayurvedic medicine preparation, so from them we get inspired and tried this medicine preparation. As no other allopathic medicine will be used for infant skin massage. Since many years this medicine is been used by my guide and her mother as an effective skin care for infant skin.This is a traditional method of preparation of baby massage oil in western Ghats for infant skin, as it is having higher rate of moisturising and skin care property.Baby massage is an ancient custom in India, the home of Ayurveda, and is considered to provide many physical and emotional benefits to the growing child,it helps in development of healthy sleep patterens,and promotion of skin health. In Ayurveda skin issues as a manifestation of imbalances of the blood tissue (rakta dhatu). The baby's body is changing so quickly that it is not uncommon for there to be vata imbalances.If breastfed, the baby is also getting plenty of harmones from the mother,a form of agni and pitta,which can also turn into ama(toxins) is not produced properly.Like the mother ,there is a natural cleansing of the organs and fluids in the baby that happens right after delivery The baby is very immature for the first several months. It is used to being soaked in amniotic fluid. The skin goes from that environment to a dry environment, where it comes in contact with clothing, bedding, urine (Which has a different composition than the baby's urine in the womb), and fecesThis is a traditional method of preparation of baby massage oil in western Ghats for infant skin, as it is having higher rate of moisturising and skin care property.Baby massage is an ancient custom in India, the home of Ayurveda, and is considered to provide many physical and emotional benefits to the growing child,it helps in healthy sleep patterens,and promotion of skin health. In Ayurveda skin issues as a manifestation of imbalances of the blood tissue (rakta dhatu). The baby's body is changing so quickly that it is not uncommon for there to be vata imbalances.If breastfed, the baby is also getting plenty of harmones from the mother,a form of

agni and pitta,which can also turn into ama(toxins) is not produced properly.Like the mother ,there is a natural cleansing of the organs and fluids in the baby that happens right after delivery The baby is very immature for the first several months. It is used to being soaked in amniotic fluid. The skin goes from that environment to a dry environment, where it comes in contact with clothing, bedding, urine (Which has a different composition than the baby's urine in the womb), and fecesAs the P .santalis is useful in treating bilous affections skin disease , bone fracture, leprosy, spider poisoning, hiccough, general debility and mental aberrations (Arokiyaraj etal.,2008) .s.cordifolia (Nadkarni 1976,Kirthikar and Basu 1981) are cool ,sweet and produce strength and beauty .The bark of the root with seasmum oil and milk is used in curing facial paralysis and sciatica when caused by the inflammation of the nerves(Nadakarni 1976,Kirthikar and Basu 1981).So this preparation is made out of these three main ingredients.Many year old preparation of infant skin oil is preserved by our effort.Native intelligence to prepare infusion essential oils has introduced to world.Easy method with less ingredients leads many to follow this medicine preparation at their home levelMaterials and Method:The preparation is proceeded by heating 250ml of coconut oil in iron pan,2 table spoon of jeera and ajwain leaf is added to it, now oil begins to boil, the oil is taken out of the heat. p.santalinus root is rolled on the smooth surface called' sanae kallu' by adding little water , about two table spoon of p.santalinus paste is added into the hot coconut oil, The paste is collected inside the silver bowl , This is added to the the boiled coconut oil . Oil leaves out the moisture and it produces the spluttering sound.Once the infusion mixture is prepared ,ready oil will be left like that for overnight ,to arrest the rosewood essential oil in the coconut oil.Now the oil is mixed with 100ml Ksheera bala thaila (made out of s.cordifolia, seasame and milk mixture). Using a muslin cloth the oil is filtered and stored in glass jar . Observation:1) The oil prepared is applied on the potato skin and checked for seven days2)The prepared oil is applied on the hand and five different observations have taken3)The prepared oil is given for lab test to check whether it is having all the phytochemical properties as it is there before preparation.Result:1) The oil prepared is applied on the potato skin and checked for seven days2)The prepared oil is applied on the hand and five different observations have taken3)The prepared mixture retained the essential oil quantity at last 1) The oil prepared is applied on the potato skin and checked for seven days2)The prepared oil is applied on the 5 different hands and observations have taken3)The prepared oil is given to Bangalore test lab for

analysis .Phenolic compound presence is tested like the presence of beta-sitosterol,lupeol,(-)epicatechin.Result:Desirable amount of presence of phenolic compound is tested with two variables ,that is before medicine preparation and after.Both the where result found was the same that is 59%

Project Code: Bio-02 (Jr)   Online ID:2236

Title: Impact of plant growth with water on demand (capillary irrigation)
Name: Rishabh Krishnakumar Menon Std: 8
Guide: Krishna Madhavi P. A
School: Sishu Griha Montessori and High School, Bangalore

ABSTRACT:

The aim of the project was to explore the possibilities of differences in growth and yield of two plants of the same type, when one of them was watered in a regular manner and the other through capillary irrigation. The crop, soil, type of wick and crop were selected after careful research and parameters of monitoring were decided. Our project aims at studying the impact of water conservation through capillary action by wick on biochemical activity and yield in kitchen garden irrigation. Also explore the possibility of applying this in rural farming. At the end of the growth cycle, the protein and chlorophyll content of both the test and control group plants were studied. We found out that the capillary irrigated plant gave more yield and its leaves had more chlorophyll and protein but its pods had less of protein. The normally watered plant had more protein in its pods but less protein and chlorophyll in its leaves.

Project Code: Bio-03 (Team) (Jr)   Online ID:2288

Title: Electricity power generation out of waste water.
Name: Abhiram Bhat K & Sharvan R Jain Std: 8
Guide: Venkata Ramana Reddy M
School: Vagdevi Vilas School,Marathahalli

ABSTRACT:

There is a shortage of electricity in many developing countries and a lot of waste water is drained out. Our main objective is to make a cheaper microbial fuel cell that can generate a little more electricity than its predecessor. Management of waste water has become a big threat to life forms in big cites.1. Lot of waste water flows into lakes . 2. Storage of electricity is another big problem in

India.Generation of electricity from wastewater will be a very good solution for both the problems.Biomass and household is a resource to generate electric current .Till now, a large number of microbes and a waste variety of substrate have been used to produce electricity.We were able to scale up to produce a reasonable range of power which can be stored in batteries for further use.A SUITABLE CATHODE AND ANODE RODS, AN ELECTRONIC CIRCUIT WHICH BOOST THE POWER OF MICROBIAL FUEL CELL FOR AMPLIFYING WERE USED.

Project Code: Bio-04 (Team) (Jr)   Online ID:2387

Title: Study of the Impact of Breathing Practices and SURYA NAMASKAR on Heart Rate, Blood Pressure and Blood Oxygen Saturation Level
Name: Hamsini Ganesan & Pragnya Balijepalli Std: 7
Guide: Madhavi . H.A, Krishna Madhavi and SRS Rao
School: SISHU GRIHA MONTESSORI AND HIGH SCHOOL

ABSTRACT:

Motivation: Due to the bad life style and unhealthy food habits, many people are suffering from diseases such as diabetes, high blood pressure even at young age. Many people do not have time for doing regular exercises due to their busy schedule and lack of discipline. It is well known that practising yoga (both Yogasana postures and breathing practices) has many advantages and lot of study has been conducted to prove this scientifically [See articles in references 1 to 4]. But all these studies are done for longer duration of practice and limited set of volunteers. However, it is not known whether doing the same for short intervals give any benefit. We aimed to study this impact for several breathing exercises and Surya-namaskar.Activities: We selected the following activities and requested volunteers to perform one of their choice from this set: (a) Nadisodhana pranayamam, (b) Bastrika pranayamam, (c) Kapalabathi pranayamam, (d) chanting "om", (e) Surya-namaskar. Volunteers: The volunteers from all age groups from the age of 12 to the age of 70 from both genders were approached to collect the data. Among this set, several volunteers from different groups such as (i) regular yoga practitioners, (ii) People with medical conditions such as diabetes, high blood pressure, smoking habit, etc. are also asked to perform one of the activities. Parameters: The following parameters are measured before and after the activity: (a) Systolic and Diastolic pressure level, (b) Heart rate and (c) Blood oxygen saturation level.Equipment Used: We used the following the

equipment for taking the readings: (a) Omron HEM-7120 Blood pressure monitor and (b) Newnik Blood oxygen level monitor.Procedure: We followed the steps given below for collecting the data and recording it.(a)Details about the volunteer collected and noted: (a) age, (b) gender, (c) Medical conditions and (d) physical activity level in their lifestyle. We also noted down the time of the day at which data is collected.(b)Volunteer performs the activity for short duration of 3 minutes (for breathing exercises and Chanting OM) and Surya-namaskar for 10 rounds.(c)Physical parameters were recorded before and after each of the activity.(d)This data was entered in a computer to analyse the pattern in the data.

Project Code: Bio-05   Online ID:2084

Title: Fight Allergic Rhinitis Associated With Sneeze By Jaggery
Name: Surya George Std: 11
Guide: Dr. Bency Tom
School: St.Augustine's G.H.S.S Muvattupuzha

ABSTRACT:

The purpose of my experiment is to investigate the use of jaggery to control sneeze due to allergy. This idea occurred to me. I had a strong response to certain allergens in the form of continuous sneezing (Allergic Rhinitis). Once by chance I consumed jaggery available at my home. It gave me immense relief and helped halting my sneeze. With help of a certified lab, namely CARe KERALAM, I analysed the contents and chemical composition of jaggery. In addition to this, I consulted Ayurvedic, Homeopathic and Allopathic physicians and enquired whether they use jaggery as a medicine against sneeze. The answer was negative.
Jaggery is a herbo mineral product and traditional sweetener without any side effects. Generally, it contains sugars, few minerals and trace amounts of vitamin B. It is a nature's gift for curing Allergic Rhinitis by blocking histamine H1 receptors which causes allergic symptoms. It contain inorganic component magnesium. Mg has an antihistaminic action. It(Mg) is transported through blood, vitamin B6 in the jaggery helps in transporting Mg. The inorganic component Mg along with vitamin B6 in jaggery helps to reduce Allergic Rhinitis. When Jaggery dissolves in the mouth it is mixed with saliva and a small portion is absorbed sub-lingually.   From our survey we found that non-fermented jaggery (jaggery prepared from fresh sugarcane juice) has more medicinal value than fermented jaggery (jaggery prepared from fermented juice).   My present finding is that jaggery has a potential in controlling Allergic Rhinitis.

Project Code: Bio-06   Online ID:2229

Title: STUDY OF THE IMPACT OF ULTRA-VIOLET (UV-C) RADIATIONS AND VACUUM ON SHELF-LIFE OF CUT PAPAYA

Name: Kavya Pandey Std: 9
Guide: Krishna Madhavi P. A
School: Sishu Griha Montessori and High School, Bangalore

ABSTRACT:

The objective of this work was to use ultra-violet-C (UV-C) treatment for cut papaya, and to evaluate the effect of its combination with storage in vacuum and refrigeration on quality of fruit with enhanced shelf life. Exposure to UV-C radiation before packing and refrigeration could be a useful nonchemical alternative to maintain quality and reduce postharvest losses in the fresh-cut industry. The study of biochemical parameters like titratable acidity, pH, vitamin-C content and total soluble solids in cut papaya inferred that the rate of ripening slowed down to a greater extent when stored under vacuum as compared to UV-C exposure alone. Microbial activity tests showed that an increase in ripening process was observed on day 5, while the samples were edible till day 3 post vacuum storage.Across the world there is wastage of fruits and vegetables due to microbial activity on pathogens at the surface of the fruits and vegetables. UV-C radiations are non-ionizing and unlike other chemical methods, do not leave a residue. Short exposures of UV significantly reduce the microbial activity and enhance shelf-life. Papaya being one of the largest consumed fruit in the world, this fruit has been chosen for the study. Biochemical parameters and microbial activity was studied for all the samples.

Project Code: Bio-07 (Team)   Online ID:2263

Title: Innovative therapeutic approach using Parthenium hysteroporus against multidrug resistant Staphylococcus aureus

Name: BHAVANA D & Deepa. S Std: 9
Guide: Nateshan A
School: A.P. Model School, Gudupalli

ABSTRACT:

Recently, scientific interest in medicinal plants has burgeoned due to the increased efficiency of plant derived drugs & raising concern about the side effects of modern medicine. Therefore, the aim of the study was to find the effect

of the antibacterial activity of methanol and aqueous extracts of Parthenium hysterophorus from Agastya International Foundation Campus, Kuppam, Andhra Pradesh was tested in vitro for their antibacterial activities against, multidrug resistant Staphylococcus aureus using the well diffusion method. The present study showed a therapeutic approach, highlighting the importance in producing new bioactivity compounds from Parthenium hysterophorus having antibacterial activity. According to inhibition zone diameters, most effective from methanolic extract of Parthenium hysterophorus (inhibition zone of 15.4 mm) followed by water extract of Parthenium hysterophorus. The presence of the inhibitory compound in the culture exhibited decreased growth rate of the indicator strain indicated by the time kill assay. The zone of inhibition of the antibiotic inoculated plate of indicator strain was only 4.2mm when compared to the antibiotic and plant extract inoculated plate with the inhibition zone of 12.4mm against the indicator strain. This indicates the inhibitory potential of the plant extract to be used in the combinational treatment of antibiotic-phytocompounds against multidrug resistant Staphylococcus aureus. The findings of this study paves the way for further research to identify the specific bioactive compounds that is responsible for its claimed antibacterial activity against methicilin resistant S. aureus which is clinically important pathogen.

Project Code: Bio-08 (Team)   Online ID:2337

Title: "Antimicrobial Activity of Silver"
Name: Suhas S. Vasishta & Dinesh P. Std: 9
Guide: Bhavisha Wala
School: Vagdevi Vilas School, Bidadi

ABSTRACT:

The purpose of the project is to study antimicrobial properties of silver metal. Different metals are prescribed in Ayurveda and we wanted to test whether silver metal as traditionally known in India for its antimicrobial activities actually shows antimicrobial effects.Objectives of the project:1. Preparation of colloidal silver.2. Preparation of antimicrobial wipes/bandages and deodorant using colloidal silver.3. Study of antimicrobial activity of colloidal silver on diseased plants.Materials & MethodsPreparation of colloidal silver-Two wires were taken with alligator clips at its ends. Three 9 volt batteries were taken and were joined with 2 alligator clips. The other end of wires with clips were clamped with silver (999.99 pure silver) pieces and dipped in saline distilled water. When the current

is passed through it, the positive wire releases silver ions and makes the water cloudy in appearance. This colloidal silver is collected and further used for preparation of antimicrobial wipes/bandages and deodorant. Effect of colloidal silver on diseased plants is being carried out and plants are monitored regularly.

Project Code: Bio-09 (Team)   Online ID:2352

Title: SERINE-THREONINE DEAMINASE FROM Tamarindus indica
Name: CHARAN S. GOWDA & AVIKSHITH.P Std: 9
Guide: RAGHU N
School: VAGDEVI VILAS SCHOOL, VARTHUR, BANGALORE

ABSTRACT:

Threonine deaminase enzyme is abundantly present in some fabaceae family members . Tamarindus indica was chosen in this study as its availability and high activity for threonine deaminase. L-isoleucine and L-leucine acts as allosteric inhibitors respectively.

Project Code: Bio-10 (Team)   Online ID:2364

Title: A NOVEL APPROACH TO INHIBIT THE MICROBIAL
GROWTH IN FOOT SWEAT USING PLANTS EXTRACT AND
POWDER
Name: DHANUSHREE R & CHINMAYI J Std: 9
Guide: BHANU PRIYA K
School: THE NEW CAMBRIDGE HIGH SCHOOL, VIJAYNAGAR,
BANGALO

ABSTRACT:

We notice that very often, when someone takes off his shoes, a strong stench is released. This because of bacteria which are grown in sweat. Foot bacteria overgrowth produces a pungent odor, proliferation of microbes results in intense itching, blisters, and reduces our of the day. Keeping the feet clean and dry reduces the incidence of skin disease of the feet. The socks containing some of the plant extracts or powder, act as a biocide that protects the feet from fungal and bacterial infections. In addition, these materials may protect the skin by increasing its stability and integrity, reducing irritation and secondary infection.In this project the socks was worn along with plant extract or powder and bacterial growth was observed. Different plant extracts were tried and its effect on controlling the microbes is observed.

Title: TRADITIONAL HEALING OF TOOTH INFECTIONS USING SOLANUM VIARM FRUIT
Name: JHANSI N & PAVANI Std: 9
Guide: Dr.Mahadev
School: ZPHS-CHINNAGOLLAPALL, GUDUPALLI (M)

ABSTRACT:

Toothache and tooth infections are very commonly found in children and other age group infections caused by bacteria and worms. In our project we tried to make an extract for toothache using Solanum viarum plant fruit a natural weed found in southern parts of India. Plant based drugs are being increasingly preferred in medical science. Hence we find the contents present in the plant. The preliminary phytochemical analysis of crude extracts of leaves, fruits and roots revealed the presence of various compounds such as alkaloids, flavonoids, phenols, steroids and tannins and its activity against the smear saliva of the infected persons along with the bacterial and fungal strains compared with standard antibiotics. The fruit extract showed the antimicrobial activity against the tested strains of S. pneumonia, E. coli, B. subtilis, S. aureus, P. vulgaris and K. pneumonia. Aspergillus niger, Penicillium notatum, Fuserium oxisporium, Trichoderma viridae and Standard antibiotics such as kanamycin, penicillin, cefotaxime and tetracycline. The fruits paste extract and other parts of S. viarum can be used to cure the tooth infections. Further studies should be undertaken to elucidate the exact mechanism of action by which extracts exert their antimicrobial effect.

Title: NATIVE MADHUNASHINI ESSENTIAL OIL AS AN EFFECTIVE Anti-Larvicidal
Name: Neha yadav & kaavyaa aravind Std: 9th std
Guide: shalini.s
School: vagdevi vilas school,Marthahalli,Bangalore

ABSTRACT:

OBJECTIVE:Natural plant products from abundant species represent attractive and sustainable starting materials for the preparation of new bioactive substances. India is a treasure house of biodiversity with its various ecological conditions, rich ethnic diversity and vast traditional knowledge.This preparation is also an

approach to prepare a antilarval drug from madhnashini ,which in terms used as antimalarial drug and also as an effective pesticide. Synopsis:Native G. sylvestre is a large, more or less pubescent, woody climber .Leaves are opposite, usually elliptic or ovate (1.25–2.0 inch × 0.5–1.25 inch). Flowers are small, yellow, in umbellate cymes. Follicles are terete, lanceolate, upto 3 inches in length. A valuable medicinal plant belonging to the family Asclepiadaceae.G. sylvestre is reported to be a bitter acrid, anti-inflammatory, anodyne, digestive, liver tonic, emetic,diuretic, thermogenic, stomachic, stimulant, anthelmintics, laxative, cardiotonic,expectorant, antipyretic, and uterine tonic. The aqueous extracts of GS show significant larvicidal activity against culex larvae (44%–89% mortality in Culex quinquefasciatus) . The extracts may also possess activity against the larvae of Anopheles subpictusChichipegenin was evaluated for inhibition of the growth and development of the fall armyworm (FAW, Spodoptera frugiperda) and yellow mealworm (Tenebrio molitor L.) by examining different aspects including insecticidal and growth-regulatory activities, rate of development, time of pupation, adult emergence, and deformities at each life stage . Of those reported in Solutions of these compounds (5 mL, 1 mM) were evaluated in adult volunteers using the method of Maeda et al.,1989 .Phytochemistry:G. sylvestre leaves contain triterpene saponins belonging to oleanane and dammarene classes. Oleanane saponins are gymnemic acids and gymnemasaponins, while dammarene saponins are gymnemasides. Besides this, other plant constituents are flavones, anthraquinones, hentri-acontane, pentatriacontane, α and β-chlorophylls, phytin, resins, d-quercitol, tartaric acid, formic acid, butyric acid, lupeol, β-amyrin related glycosides and stigmasterol. The plant extract also tests positive for alkaloids. Leaves of this species yield acidic glycosides and anthroquinones and their derivativesSo it is a possible approach to extract Gymnema sylvestre essential oil from different plant part like root, leaves and stem, and to use this as an effective larvicide   thus to produce an effective pesticide and to treat malaria. Materials and methods:The collected plant leaves stem and roots were dried at room temperature, pulverized with a mechanical grinder and sieved through 40 mesh, the fine powder of leaves, stem, roots were shredded in separate quarter jar bottle, Ethanol extract of madhunashini is subjected to phytochemical examination,To check the presence of phenolic compound,saponins ,alkaloid sample is given to the Bangalore test lab   Mosquito killer is checked by preparing home level medicine, Mixed madhunashini extract(100ml) with neem kashya (100ml), few pellets of camphor, this preparation is filled in the

commercially available All out refil,checked for 7days ,65% mosquito control was observed in comparision with the commercially available all out Home made insecticide preparation:Madhunashini extract(100ml) is mixed with scooped alovera gel (4table spoon),few garlic cloves crush and green chilli crush ,And the preparation is mixed with a litre of water .And kept undisturbed for overnight,This preparation is filled in spray bottles and given to many vegetable wendors to check the control of insects in their shops,tried at our home level garden for armyworm,

Project Code: Chem-01 (Team) (Jr)   Online ID:2397

Title: ARECHANUT AS A AN ALTERNATIVE INK FOR MARKERS:
Name: shivani.s & Nanditha.s Std: 8th std
Guide: shalini.s
School: vagdevi vilas school,Bidadi,Bangalore

ABSTRACT:

Markers play an important role in writing and in artworks in different ways.Typically the inks used in most markers are made from synthetic materials like the petroleum and chemical solvents .These kinds of materials are hazardous especially to the health of the users and to the environment as well. According to a Planet Ark report in 2006, if 18 million ink cartridges were sent to the dump this would create waste of 3,000 tonnes of plastic, 2,500 ferrous metals, 400 tonnes of aluminium & 26 kilograms (about 58 pounds) of precious metals. On top of all this, that 3,000 tonnes of plastic can take up to well over a couple of hundred years to degenerate .Chuck a printer cartridge into a landfill heap and it will take 450 years to decompose Long before ,ink is usually made from natural products such as berries,barks and leaves extract.They have been used for centuries to create numerous colours when mixed to other substances can be an ink,dye or paint.(lopierre ,lopi) About arechanut: The areca nut contains the tannins arecatannin and gallic acid; a fixed oil gum; a little terpineol; lignin; various saline substances; and three main alkaloids—arecoline, arecaidine and guvacine—all of which have vasoconstricting properties.The betel leaf chewed along with the nut contains eugenol, another vasoconstrictor. In the metabolic system as a digestive and carminative Anti-diabetic Used against certain skin diseases,Improves eyesight ,Helps in relieving asthma Thus for the present study we have used arechanut commercial use as marker ink pens.And areca nut is a local crop of

karnataka ,being a native we have seen how the decoction is produced in 'Addikae mandi' ,used as dyeMaterials And Methodspreparing the arechanut decoction ,by heating 50g of arechanut in 100 ml of water in a sause pan at moderate temperature upto 20-30mins. rusted iron mordant stocks are prepared-by keeping it at natural sunlight for 15 days 1. Fruit peels of pomegranate of 100g + three rusted iron in 100 ml distilled water. 2. Flower petals of marigold of 100 g +three rusted iron nail in 100ml distilled water. add 3 ml of glycerine & gum Arabica solution .Psudeo Code or Algorithm (if applicable)Results / Observations / FindingSample stockModrent(arechanut decoction) Rusted iron stock(prepared with pomegranate peel)Gum Arabica solution Glycerin 150ml50ml10ml3ml 250ml40ml 10ml3ml 350ml30ml10ml3ml 450ml20ml 10ml3ml Alcohol and eraser test on white board Tested with :Acetone nail polish remover, Sanitary alcohol, floor cleaner , Ethanol .Intensity test,Adsorption, colour and consistency test with areca standards &commercial marker ink Uv visible test measured at a visual scale of 0-100 percentage.ConclusionsBy this we conclude that the natural materials are always eco-friendly,non toxic and have medicinal values.As it is having all the property as the commercial markers. Eco-friendly Biodegradable materials are used Low cost materials Non toxic Highly effective as the commercial ink Less time and space consumption Easy method of preparation Good quality ,retain the natural odour ,colour Easily available materials. Giving an ulternative application to the locally available materialsInnovationsWe used to observe our grand parent biting the pan producing colour in their mouth.observing that we developed curiosity of dye out of areca nut we made a stock out of iron nails with displacement colour reaction,so we used these two innovation here

Project Code: Chem-02 (Team) (Jr)   Online ID:2498

Title: Removable ink
Name: Adithiya. A & Hrishikesh H Doddihal Std: 8
Guide: Aranganathan
School: Vagdevi Vilas School, Marathahalli

ABSTRACT:

TOPICRemovable ink AIM To make a different kind of ink which can be removed from a sheet of paper MAKING OF THE INKThe ink is basically made of dilute Hydrochloric acid (hcl) or dilute Sodium hydroxide (naoh). To make the ink we need to add hibiscus indicator (water obtained by boiling hibiscus petals in it) to hcl or Noah. When added to hydrochloric acid it turns to dark pink and when

added to sodium hydroxide it turns green REMOVAL OF THE INK After writing in a paper with our ink we need to dip the paper into dilute sodium hydroxide if the ink is made of dilute hydrochloric acid and vice versa. The reaction leads to the formation of sodium chloride (nacl) which is the salt which we use in cooking hcl+Naoh=Nacl+H2OAs hibiscus flowers are good for health and also helpeps in maintaining our body temperature it is used in our project

Project Code: Chem-03 (Team)   Online ID:2086

Title: eco friendly citric acid
Name: Shalini Raj & Keerthana Murali Std: 10th std
Guide: Sindhu R
School: VAGDEVI VILAS,VARTHUR,BANGLORE

ABSTRACT:

In the present study, the percentage of citric acid yield was estimated from a natural, chemically undefined media consisting of sugarcane juice, a chemically defined synthetic media and from fresh citric fruit juices of lemon and orange, Using simple acid base titrations and phenolphthalein as internal indicator. Citric acid was produced using Aspergillus niger in the natural and synthetic media. Citric acid is naturally present in the citric fruits. Initially the sugarcane juice was alkaline in nature, after two weeks of inoculation the pH recorded shows acidic condition, which indicated the accumulation of citric acid in the media.

Project Code: CompSc-01   Online ID:2401

Title: The Plant Doctor: An Artificial Intelligence Based Collaborative Platform for Plant Disease Identification and Tracking
Name: Kaushik Kunal Singh Std: 10
Guide: Pranav Singh
School: Inventure Academy, Bangalore

ABSTRACT:

Plant disease control is essential for safe and reliable food production and the preservation of natural resources. Farmers apply excessive pesticides and suffer economic hardships due to plant disease outbreaks. The most crucial step to control outbreaks is the identification of diseases for appropriate preventive measures. Most plant diseases can be easily diagnosed by agricultural experts in early stages by visual examination of foliar symptoms. However, farmers have limited access to experts. We introduce 'The Plant Doctor', a mobile app backed

by state-of-the-art Artificial Intelligence for farmers to automatically identify plant diseases in real-time and to track outbreaks using disease density maps of the neighborhood. The Plant Doctor uses Convolutional Neural Networks (CNN), a deep learning model that has recently achieved great performance in image recognition. In our experiments, a deep CNN model was trained with controlled and real-life image data sets of different plant diseases. Multiple test images were classified into diseases using the trained model. The experiment's results prove our hypothesis that a greater accuracy in disease identification can be achieved by a growth in the training dataset with high fidelity images collected under natural conditions. These images are uploaded by users to the training dataset, creating a social collaborative platform with a progressively accurate disease diagnosis. The same database also enables the generation of disease density maps from geocoded images. Our experiments prove that disease identification can be achieved in real-time with a high performance deep CNN with a simple interface for the common user.

Project Code: CompSc-02 (Team)   Online ID:2427

Title: Recharging of Emergency Lamp through Energy of Loaded Spring
Name: SWAPNIL DATTA & RITOSURVA RAY Std: 9
Guide: Vijayakumar Kanyamadugu
School: Vagdevi Vilas School

ABSTRACT:

Emergency lamp is much utilized & very useful Product, as it is portable Light used in travelling & Light stormed areas.The biggest challenge is to Re-Charge the Battery of Emergency Lamp in the remote places or Power Stormed areas.To come out this Problem, we are intended to Develop the Product by using following Principles:1. The stored energy in a spring is equal to the work done on it by some external load. δ = Deflection produced in spring due to the applied load W.2. The generator/dynamo is made up of stationary magnets (stator) which create a powerful magnetic field, and a rotating magnet (rotor) which distorts and cuts through the magnetic lines of flux of the stator. When the rotor cuts through lines of magnetic flux it makes electricity.

Project Code: **Energy-01**   Online ID:2234
Title: Energy generating shirt and neuro pulse transmitter
Name: Chandan surya prathik .perla Std: 11
Guide: Ravi Kumar.p
School: Sri bhavishya educational academy,Vijayawada

ABSTRACT:

I've actually created an energy generating shirt ,which could actually convert the human body temperature into electricity and I create a neurotransmitter .the neurotransmitter is something which got to do with the brain it actually knows what we are thinking and could detect the human emotions . It is based on the laws of the thermodynamics . The shirt could actually convert the human body temperature into electricity and the neurons transmitter is something which is connected to the brain and it knows what we are thinking it actually shows the intensity of your thought so the shirt has the capacity to take a precise action and to give a precise observations about the ECG scan of the human body, it actually looks like any ordinary shirt and it's your it can be just one by people of all ages irrespective of the gender shit actually has its in aligning made out of aluminium foil aluminium foil being in malleable and economically feasible, culturally acceptable, technologically accessible so I choose an aluminium as a constitution and and and the neuro pulse transmitter also work on the same base of theory,The neuro pulse transmitter is something which is one as a spectacle, which is actually connected in the region of temples of human brain So when a person when a person just use it it has the capacity to detect the neuro pulses which go deep inside the brain and they can also detect the intensity of human thought and they could help in predicting the human emotions.Their applications:1.The shirt could actually take a perfect ECG scan of the human body remarkably at a cost less than rupees 100, 2.The regular ECG scanning would cost really high and, they require the patient to be in a place for longer periods of time ,so These type of shirts can be used just by wearing them and continue their daily work.The application of neuro pulse transmitter 1.it could be used as a lie detector as it accounts every single change in human emotions and change in thoughts or pulses in brain2. could be used by the people who are completely paralysed to move their wheelcha

Title: AUTOMATIC SWITCH TO SWITCH OF THE WATER
Name: AYUSH N. SHETTY & LOMESH VANAPALLI Std: 8
Guide: SARITA B
School: VAGDEVI VILAS SCHOOL, VARTHUR, BANGALORE

ABSTRACT:

This project is an innovative solution to operate a machine / motor / liquid pumps for a small duration. If a machine is to be operated for ten minutes, and should be switched off after the duration, it is too difficult and many times we forget to switch it off the system after the prescribed time.This project provides the facility of automatic switch off after the required time duration. This is achieved by using the AT89S52. Four push-to-on switches are connected to one port of the microcontroller. These four switches are to provide four different fixed time constants.A 16X2 LCD is connected to the microcontroller to display the status of the pump. Contrast of the LCD can adjusted by using a preset which is connected to it.   A transistor is used to drive the relay during the active time period. 5V double pole – double through relay is used to control the AC liquid pump. LED indication is provided for visual identification of the relay / load status. A switching diode is connected across the relay to neutralize the reverse EMF. This project uses regulated 5V, 750mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/18V step down transformer.

Project Code: Engg-02 (Team)   Online ID:2152

Title: IOT GARBAGE MONITORING SYSTEM
Name: Chaitanya hs & Ritika Chandavarkar Std: 9th
Guide: Asha Kiran
School: VAGDEVI VILAS,VARTHUR,BANGLORE

ABSTRACT:

For this the system uses ultrasonic sensors placed over the bins to detect the garbage level and compare it with the garbage bins depth. The system makes use of AVR family microcontroller, LCD screen, Wi-Fi modem for sending data and a buzzer. The system is powered by a 12V transformer. The LCD screen is used to display the status of the level of garbage collected in the bins. Whereas a web

page is built to show the status to the user monitoring it. The web page gives a graphical view of the garbage bins and highlights the garbage collected in colour in order to show the level of garbage collected. The LCD screen shows the status of the garbage level. The system puts on the buzzer when the level of garbage collected crosses the set limit. Thus this system helps to keep the city clean by informing about the garbage levels of the bins by providing graphical image of the bins via IOT Gecko web development platform.

Project Code: Engg-03 (Team)   Online ID:2252

Title: Power Generation Through Gravity [PENDULLUM METHOD]
Name: Chirag Buddivanth G & Yeshwin Reddy B Std: 9
Guide: Vijaya Kumar Kanyamadugu
School: VAGDEVI VILAS SCHOOL , VARTHUR, BANGALORE

ABSTRACT:

We would like to propose another resource available that has been largely ignored, Gravity , here is an idea utilizing this force to generate electricity round the clock and largely in any weather.Generation of Electricity through Gravity.Movement of Pendulum: A pendulum is a weight suspended from a pivot so that it can swing freely.Faraday's law: Whenever a Conductor cuts the magnetic lines of Force an EMF is induced in the Conductor.

Project Code: Engg-04 (Team)   Online ID:2488

Title: Sound Proof Bobbin Movement In Weaving Machine
Name: Chaitanya Reddy & Tarang C Rangani Std: 9
Guide: N Govindan
School: Vagadevi Vilas School Marathalli Bangalore

ABSTRACT:

In the normal weaving machine the bobbin movement is through mechanical force applied on both side of the bobbin alternatively By this lot of noise is created and it affects the health of the operators due to sound pollution To create sound proof linear movement of bobbin in weaving machine to avoid the sound pollution1. Permanent Magnets 2. Electro Magnets3. Adhesive 4. DC Power Supply5. Electronic Controller6. Consumables and Hardware MethodFix the permanent magnets below the bobbin spool Fix the electro magnets as per linear motor stator below the Breast Beam Connect the electromagnets to the electronic controller Switch on the power supplyResults / Observations /

FindingsOnce the power is on, the electromagnets get energized through electronic controller. Bobbin spool starts to move to and fro Speed of bobbin movement can be controlled through electronic controller It is observed that no sound or noise is created Hence no noise producedConclusion1. By this method, Noise pollution is reduced drastically2. User friendly 3. Operated on Battery also 4. Variable Speed 5. Benefiting the society 6. The health effect on noise pollution can be minimized7. ECO friendly Sound proof bobbin movement in weaving machine to reduce the sound pollution than that compared to the normal bobbin. In being user friendly and ECO friendly

Project Code: Engg-05 (Team)   Online ID:2248

Title: COMBUSTIBLE GAS LEAKAGE DETECTION
Name: THILAK REDDY.P & CHAITHANYA KRISHNA.C.R Std: 9
Guide: PRAVEENA P
School:

ABSTRACT:

LPG gas is supplied in pressurized steel cylinders. As this gas is heavier than air, when it leaks from a cylinder it flows along floor and tends to settle in low spots such as a basement. This can cause fire or suffocation if not dealt with. Here is a circuit that detects the leakage of LPG gas and alerts the user through audio indications.This LPG Gas Sensor (MQ6), ideal sensor for use to detect the presence of a dangerous Liquefied petroleum gas (LPG) and it has high sensitivity to propane, butane, isobutene, natural gas. The sensor can also be used to detect combustible gases, especially methane. This circuit can detect leakages in your Home, car or in a service station, storage tank environment. This unit can be easily implemented to industrial level by upgrading its ranges.This project is designed to detect the LPG from 200parts per million (PPM) to 10,000 PPM. Whenever there is LPG concentration of 1000 ppm (parts per million) in the area, the OUT pin of the sensor module goes high. This signal drives timer IC 555, which is wired as an astable multivibrator. The multivibrator basically works as a tone generator. A buzzer is connected to produce audible alert signal.This LPG Gas Sensor can be used to make wireless Gas leak detector in home security system .The LPG Gas Sensor Module is designed to enable LPG detection interface to Microcontroller without ADC Channels.In this project we have used MQ-6 gas sensor. Whenever LPG gas is leaked the sensor detects and it passes signal to timer circuit. Here we have used IC 555 timer which acts as astable multivibrator.

Then it will be given to Transistor driver circuit which activates buzzer and LED and alerts the user through audio indications.

Project Code: Env-01 (Jr)   Online ID:2362

Title: To study the effect of electromagnetic radiations emitted by Wi-Fi modem on germinating green gram seeds.
Name: RUSHANK TRIPATHI Std: 8
Guide: BHANU PRIYA K
School: KENDRIYA VIDYALAYA, DRDO, BANGALORE

ABSTRACT:

Wireless communication devices have now become part of our life. Our life styles and livelihoods have directly or indirectly forced us to depend on them. These devices emit electromagnetic radiations. Constantly living in the vicinity of them can lead us into health hazards. This project helps us to understand their impact on physical growth and biochemistry of germinating green gram seeds. Our study is mainly on Wi-Fi modems which are now part of every house hold. This study helps us to create awareness among people about effect of prolonged exposure to these electromagnetic radiations emitted by wireless communication devices.

Project Code: Env-02 (Jr)   Online ID:2363

Title: GREEN BATTERIES
Name: SIDDHARTH SATISH Std: 8
Guide: BHANU PRIYA K
School: SINDHI HIGH SCHOOL, HEBBAL BANGALORE

ABSTRACT:

Commonly used batteries use inorganic salts as electrolytes for power generation such as ammonium chloride,Manganese dioxide, Potassium hydroxide, nickel nitrate, nickel sulphate and others. The disposal of these batteries is hazardous and the leakage of the batteries corrodes whole circuitry. In this project we are trying organic electrolytes that can be replacement to hazardous inorganic electrolytes and will be ecofriendly. Different plant extracts are used and its voltage and current produced is observed. Thus an attempt to design ecofriendly organic battery is made.

Project Code: **Env-03 (Jr)**

Title: A NOVEL STUDY OF GLYCEROL PROPERTIES OF BEETROOT JUICE IN MAKING BIOPLASTIC
Name: SARVESH PRABHU Std: 7
Guide: BHANU PRIYA K
School: SINDHI HIGH SCHOOL, HEBBAL, BANGALORE

ABSTRACT:

Preent day plastic has become big issue and it has become threat to the society. Present day many innovations taking place in making bioplastic.in this project we are trying to make bioplastic using beetroot juice as platicizer. We observed when beetroot juice was kept for some days it became thick and its viscosity changed. Also we came to know that beetroot is used as thickening agent in food recipes and used as skin noisturizer as it makes the skin soft and supple. So we tried using it as an alternate to glycerol in making bio plastic.

Project Code: **Env-04 (Team) (Jr)**

Title: SPECIALLY DESIGNED BIODEGRADABLE SUPER ABSORBENT OF WATER TO OVERCOME DRAUGHT IN AGRICULTURAL FIELDS
Name: Rohit.t & Manish kumar Std: 8th std
Guide: shalini.s
School: vagdevi vilas super school,marthahalli

ABSTRACT:

Objective:According agricultural department statistics ,1002 farmers have ended their lives from 2015-16 in Karnataka. Farmers were in dire stairs due to drought in the last two and   a half year. As many as 140 taluks of the 176 have been declared drought hit. Crop grown during Kharif and Rabi season dried up for want of rain. Keeping this in mind designed a biodegradable superabsorbent, which helps in water absorption, soil aeration, helps in soil conditioner. Thus resolves main agricultural problem water conservationSynopsis:Agricultural use with the aim to ameliorate water holding properties for growing media.Most of the traditional hydrogel on the market are acrylate based product thus not biodegradable ,due to the increasing attention for environment issue protection issue.Thus in present study we evaluated a novel class of cellulose based superabsorbent mixture. such as coconut coir, which is a layer of fibrous materials that is a by-product of the coconut industry. it's structure of hollow and narrow

cells resembles honeycomb giving coir incredible water retention properties and making it a naturally superior absorbent. Locally available sawdust, a very low cost and tested experimentally as an adsorbent. Rice husk, charcoal used as an effective water heavy metal absorber, and vitiveria zizaniodides a medicinal root having the ability to retain water and to avoid soil erosion. Different soil sample in combination with hydroabsorbents are tested ,so to help this combination in many where in agriculture ,and also for different conditionMaterials and methods:All these water absorbers have taken in different combination for present study to check the water absorption and to improve the soil aeration.Measured amount of biodegradable water absorber are taken in different meshed boxes of 8x 5 inches, named as A, B, C, D and E respectively. Each box was having equal amount of samples, but in box F the equal combination of all the samples have taken. The mesh boxes are kept on the top of collecting box, where the collected water coming from root tip is stored, a motor is fit over there to lift the collected water to top again, as a water recycling. For the effective use of water.The different soil sample in combination with hydroabsorber have taken and tested with plant growth ,its health.Result: The biodegradable absorber is subjected to different test, water holding capacity was tested for more than a week, retention values and day time of retention was calculated. The graph is plotted in comparison with A, B, C, D, E and F. The moisture at field capacity increased with 80% was observed. Tests reveals absence of phytotoxicity of the water absorption and calculation trial on cucumber, methi and coriander showed a general overall enhancement of plant growth.Conclusion:Soil condition hinders plant growth and crop yield are low water retention capability, high evaporation rate and soil moisture leaching, degradation& salination of overuse of synthetic fertilizers and pesticides. This is a novel approach to retain water and recycle the collected water

Project Code: Env-05 (Team) (Jr)   Online ID:2462

Title: SORBENT POLYMER MADE OUT OF TOMATO PEEL TO INCREASE THE WATER ABSORPTION CAPACITY IN SOIL

Name: Swetha S & Yashaswini M Std: 8
Guide: shalini.s
School: vagdevi vilas school , munnekolalu, bangalore

ABSTRACT:

According agricultural department statistics ,1002 farmers have ended their lives from 2015-16 in Karnataka. Farmers were in dire stairs due to drought in the last two and   a half year. As many as 140 taluks of the 176 have been decleared drought hit. Crop grown during Kharif and Rabi season dried up for want of rain.The bio absorbent which is made out of tomato peel and with mechanical and water absorption properties are prepared from Natural Polymers. • Biosorbent films composites were prepared by casting thermoplastic starches (Bario Rice/Sago starch at ratio2:3) with natural rubber (0.5 - 10 %) in the presence of a plasticizer (glycerol).Biodegradable gel that can absorb more than 250 times its weight in water could potentially help farmers retain moisture in drought –sickens fields We have chosen tomatoes as natural polymer in our project because Scientists from the University of Murcia, Spain, have studied tomato peel as a potential source of dietary fibre. The skins were found to contain more than 80% fibre, most it insoluble fibre, formed by hemicelluloses. The peel also had rutin, naringenin, chlorogenic acid, and lycopene. It is natural and biodegradable.and Sago is a starch extracted in the spongy enter, or pith, of various tropical palm stems, especially, Metroxylon sagu.No residue will be left in the soil when the gel degrades. And as the polymer used acts as a source of nutrient that helps in plant growthPolythene, it is non-renewable, petroleum based, only used in growing season, cannot recycle in most regions, because of the agrochemical waste and soil, burning of polyethylene mulch can have undesirable environment impacts, such as the release of dioxins as an airborne pollutant, mulch by soil microorganisms are negligible. For these reason, we prepared a biopolymer film using fermented sago pearls and tomato, plasticizer. This designed biodegrade fully mulches in to carbon dioxide and water.As we have performed many experiment like durability, where the 2x2 film prepared are treated with acid and base, Alkaline Hydrolysis Test is carried out by soaking the samples of size 2x2cm in in 20 ml of 0.1M Sodium Hydroxide solution at 70 C. The changes in weight are recorded every 30 minutesTested for biodegradability for four weeks, observed the gradual reduction of films at short term Soil burial test: The burial test is performed to check the biodegradability ,2x2 dimension biofilms are made and kept in mud pot, checked the weight before burial 10 g and seven days of burial it is 9.8 g was observed. Tensile strength:4x4 dimension biofilms has tested for tensile strength of 120Mpg have seen for strain verses the weight pressure. In this film we used tomato as natural rubber which has had rutin, naringenin, chlorogenic acid, and lycopene.It helps in observing sunlight as

desired ,thus it prevent the weed germination.It satisfies all environment factors like temperature ,moisture level, atmospheric pressure ,concentration of acid and metals ,light exposure .Thus it can be used as an alternate 'bio-mulch'Materials and methods: Sago / spoiled Rice starch are blended with natural polymer tomato peel with the presence of glycerol/sorbitol. Sago is a starch extracted in the spongy enter, or pith, of various tropical palm stems, especially, Metroxylon sagu.Films are prepared from spoiled rice / sago starch. Rice and Sago starches (3% w/w) are gelatinized in an autoclave at 120 C, 100 kPa of or 30 minutes/Heated on a pan by maintaining moderate heat of 98.5degree for 20 minutes. Glycerol is added at 30%(w/w) relative to starch. The prepared solutions are homogenized with an ultrasonic homogenizer with 30%power for 5 minutes. Result and observation:Mechanical Properties: Differential Scanning Calorimetry (DSC): Film products of 15mg were encapsulated in zero Aluminium Pans. Sample Pans are heated at 20 C/min from 20 to 200 C. Tm is recorded. Fourier Transform Infrared Spectroscopy(FTIR): Fourier Transform Infrared Spectra are recorded between 4000 and 400 cm-1Water absorption test: 2x2 films are dried for 6o hours at room temperatue and weighed. The samples are then soaked in distilled water at 23 1 C. Samples are weighed periodically every week for 4 weeks. 2x2 film gels before absorption rate was 70%more was observed.Alkaline Hydrolysis Test is carried out by soaking the samples of size 2x2cm in in 20 ml of 0.1M Sodium Hydroxide solution at 70 C. The changes in weight are recorded every 30 minutes.Soil burial test: The burial test is performed to check the biodegradability ,2x2 dimension biofilms are made and kept in mud pot, checked the weight before burial 10 g and seven days of burial it is 9.8 g was observed. Tensile strength:4x4 dimension biofilms has tested for tensile strength of 120Mpg have seen for strain verses the weight pressure. Chemico-physical tests are performed to see the ionic crosslinking between fibres and water. To this mechanical tests, water vapour permeability tests, water up-take evaluation morphological analysis were performedNo damage to roots, no transplant shock, enhancement of plants growingWater absorption test: Dimension of 2x2 biofilm gels are made and tested for water absorption, before absorption it was weighing about 2g and after absorption it is 7gSoil burial test: The burial test is performed to check the biodegradability ,2x2 dimension biofilms are made and kept in mud pot, checked the weight before burial 10 g and seven days of burial it is 9.8 g was observed.

Title: Stray Doggy
Name: Sreekari Pingali Std: 5
Guide: Arumugam N.
School: Inventure Academy, Whitefield, Bangalore

ABSTRACT:

There are an estimated 30 million stray dogs in India, the number increasing by the day. These stray dogs are a health menace to themselves and to us. They suffer from lack of food and get sick as they are forced to eat garbage. The number of sterilized dogs is very few, therefore they are multiplying in number. The number of adoption centers are very few, and this makes it harder for stray dogs to find a home. These are the reasons why I have decided to come up with an innovative approach towards resolving this problem. My project Stray Doggy has three different ways you can help identify stray dogs with ease.1.A simple mobile app that allows anyone to take a picture of a stray dog and upload it on a website which shows pictures and locations of stray dogs on a map of your city. 2.A Dog Face Recognition system that helps identify if the same dog appears in different pictures and locations. This also helps dog sterilization centers to track dogs they have sterilized. 3.Design a simple durable Dog Collar which is cheap and that can be easily be detected by a camera. The collar can be used to identify and track sterilized dogs.

Project Code: **Env-07 (Team)**   Online ID:2393

Title: ALGAL SOLAR PANEL
Name: shilpa.g & swetha.e Std: 9 th std
Guide: shalini.s
School: vagdevi vilas school,Marthahalli,Bangalore

ABSTRACT:

ALGAL SOLAR PANEL We have collected the algae" Tolypothrix' and cladophora, During the time august, given a coconut substrata and water, sufficient sunlight for its growth. After about a week, we found 20%growth of algae. Collected algae Were examined under compound microscope, then extracted with ethanol: acetone, subjected to paper chromatography, the value of Rf,0.68-chlorophyll aChlorophyll b-0.54, B-carotene-0.94. Absorption of spectrum rate is calculated as 428.5,660.5 452.5 for chlorophyll a, chlorophyll b and total chlorophyll count as 36mg/ml.After getting this data we tried to grow more algae and used to zinc and

copper electrode at each end of the container having algae and started generating the elcctricity, We got a little success where a led started glowing through this. Now we are trying with different electrode combination and inserting in different combination of collected algal sample to produce more electricity.Green pigment present in algae helps in trapping sunlight, while it transfer this to energy by that time it releases electrons will be released to the medium, thus it helps in producing electricity.

Project Code: Env-08 (Team)   Online ID:2458

Title: Phytoremediation of Heavy metals and Anibacterial Activity of Schefflera pueckleri against various bacterial species
Name: SATHISH KUMAR K & THARUN KUMAR Std: 9
Guide: Mahadev
School: ZPHS-SODIGANAPALL GUDUPALLI (M)- 517426 KUPPAM

ABSTRACT:

The waste water from the industrial contaminated mines exhibit potential threats for biotic community in vicinity. The present investigation aim in efforts to develop new more cost – effective and eco-friendly Phytoremidiation technology and antibacterial activity of Schefflera pueckleri plant for the effective removal of toxic heavy metals from polluted water. The plant root in water absorbs metals in a wide range concentrations namely lead, chromium and cyanide in the order Pb > Cr > CN during its growth period. Different organic and aqueous extractions of leaves of Schefflera pueckleri were screened for their antibacterial activity against six (6) pathogenic Bacteria by disc diffusion assay. The pattern of inhibition varied with the solvent used for extraction and the microorganism tested. Among these extractions, petroleum ether, Chloroform and Aqueous extracts showed significant Antimicrobial Activity against most of the tested microorganisms. The most susceptible microorganism was Lacto bacillus (6mm zone of inhibition in Chloroform extraction) followed by Bacillus subtilis (4mm zone of inhibition in aqueous) and E. coli. (3.5mm zone of inhibition in petroleum ether extraction). Preliminary phytochemical analysis of different extracts revealed the presence of Anthraquinones, phenolic compounds, Flavonides, alkaloids and terpinoids in all the tested extracts, hence the plant can be used in Phytoremediation and as a herbal medicine.

Title: Why Indian metro cities receive more rainfall?- a scientific analysis

Name: Nikhil N Iyer Std: 9

Guide: Narayan Iyer

School: Twinklers School

ABSTRACT:

Indian cities and metros have been witnessing heavy rainfalls over the years. We also know that the city population has been on the rise. For example, we saw heavy rainfall in Chennai in December 2015. Similarly, there is, in general, an increase in rainfall – example we saw the heaviest rainfall in Bangalore in August 2017. Mumbai is also receiving heavy continuous rainfall.My project tries to analyse the reason behind the increased rainfall experienced by these metros.We know that the occurrence of rain is due to condensation of clouds. When water vapour settles down on dust & ash forming mini clouds – it then grows in size in due time. When it is too large to hold itself, it pours down as rain.My hypothesis is - increase in population in cities increases construction activities, vehicular pollution and other emissions. This results in formation of more dust and ash above the city sky. This leads to enormous cloud formation and precipitation. Thereby resulting in heavy rains within the city boundaries.AnalysisI have analysed the data available from NASA Earth Observation.For this project i have used three parametric data:1. Aerosol Optical Thickness (cm)2. Rainfall (mm)3. Average Land Temperature Night (centigrade)Aerosol Optical Thickness – Indicates tiny solid and liquid particles suspended in the atmosphere. Examples of aerosols include windblown dust, sea salts, volcanic ash, smoke from fires, and pollution from factories.Rainfall – It indicates the average rainfall.Average Land Temperature (Night) – This indicates average land temperature at night time.Visualization with graphical representation was chosen to arrive at the conclusion.I have used the open data set available from Nasa Earth Observation. Specifically i have used Chennai December 2015, when it experienced heavy rainfall. For Mumbai i have used the data of June 2010.Visualization with graphical representation was chosen to arrive at the conclusion.The higher land temperature at night indicates more concrete surface & construction activities surrounding the city. This in turn increases aerosol.We observe that increase in aerosol content in the atmosphere increases the rainfall.The reasoning for

increase in the rainfall for metros of India can be attributed to increase in construction activities.

Project Code: Env-10   Online ID:2490

Title: stop cutting trees to make paper ,instead use waste flowers
Name: LAURIELLE MONTEIRO Std: 9th std
Guide: shalini.s
School: vagdevi vilas school,Marthahalli,Bangalore

ABSTRACT:

Every year, approximately 80, 00,000 tons of waste flowers are dumped into Indian rivers and about 50 tons of waste was laying in the market during festivals. World consumption of paper has grown 400 percent in the last 40 years. Now nearly 4 billion trees or 35 percent of the total trees cut around the world are used in paper industries on every continent. over 50 tonnes of waste was lying in the dumping yard inside the market As we all are aware of the increasing deforestation we also know that one of the main reason for deforestation is making of paper...... Nearly 4 billon trees are cut and used in the paper industry. As this is a matter of growing concern we found a paper which is made out of dried and waste flowers. This will not only clean the environment but also can be an alternative method to prevent global warming. Nearly 80,00,000 flowers are dumped into the Indian rivers, so instead of wasting them we can use them and make the best out of waste......Synopsis:A, flower sometimes known as bloom or blossom is the reproductive structure found in plants that are floral plants of the division magnoliphyta, also called angiosperms.Chemistry's role in flowers comes in during photosynthesis ($6CO_2 + 6H_2O$ + light energy = $C_6H_{12}O_6 + 6O_2$) and respiration ($C_6H_{12}O_6 + 6O_2 = 6CO_2 + 6H_2O$ + light energy). As flower is extended part of stem it follows the same tissues ,in future it convert into fruit part ,so flower has cellulose and starch,as it is the basic component of paper making .As we all are aware of the increasing deforestation we also know that one of the main reason for deforestation is making of paper...... Nearly 4 billon trees are cut and used in the paper industry. As this is a matter of growing concern we found a paper which is made out of dried and waste flowers. This will not only clean the environment but also can be an alternative method to prevent global warming. Nearly 80,00,000 flowers are dumped into the Indian rivers, so instead of wasting them we can use them and make the best out of waste......Enter a temple, mosque, guru dwara or church in India and the first thing you'll probably notice is

the abundance of flowers at the place of worship. There are flower sellers at the entrance, flowers strewn all over the shrine's floor, devotees receiving flowers in the form of blessings – there seems to be no limit. It estimates global production at 1.7 billion (46 percent) , 1.6 billion (43 percent) and 421 million (11 percent) cubic meters respectively with comparable volumes consumed globally.Some calculations:It takes 24 trees to make one ton of uncoated non-recycled printing and office paper.It takes 12 trees to make one ton of 100 percent non-recycled newsprint.It would take a little more than half a tree to make a carton (10 reams) of 100 percent, non-recycled 20-lb. copier paper.One tree makes 16.67 reams of copy paper, or 8,333.3 sheets.One ream (500 sheets) uses 6 percent of a tree.One ton of coated, higher-end virgin magazine paper (used for magazines like National Geographic) uses a little more than 15 trees.One ton of coated, lower-end virgin magazine paper (used for news magazines and most catalogs) uses nearly 8 trees.about 50 tons of waste was laying in the market during festivals. World consumption of paper has grown 400 percent in the last 40 years. Now nearly 4 billion trees or 35 percent of the total trees cut around the world are used in paper industries on every continentMaterials and methods:1.The materials used for this simple process is also very simple...we used 300 gms of extremely dried boughanvilla , rose ,hibiscus and chrysanthemum flowers with 100ml of water.2.Then we grinded these flowers for almost 2 minutes to make a thick paste and pour this paste on a sieve...3.Then dip this sieve in through containing water and lift it immediately and remove the excess water using a sponge to prevent bacterial and fungal growth...4.Invert the sieve on a piece of cotton cloth, let it dry overnight and mould it any shape needed.To test paper strength:1.Take a piece of prepared paper and rubber band it on the waste plastic box2.Add few drops of water on the top of it and keep the coins one above the other.3.Observe the paper strength.To test paper pH:1.Treat the prepared sample in different acidic and basic solution2.Check for the bondingTo test with microscope:1.Take the prepared paper sample 2.Observe this under microscope

Trials	Used flowers	In grams	Paper size obtained
1	Bougainville	1 cup	15cm x 15cm
2	Rose	0.050g	5 x 5 cm
3	Hibiscus	1cup	4x 4 cm
4	Marigold	0.090g	14 cmx 14 cm
5	Chrysanthemum	0.050g	10cm x10cm
6	Nerium	0.170g	10 cmx 10cm

Trial	Flower pulp In gms	Starch powder	Calcium carbonate	Paper size
1	2cups	1 spatula	1 spatula	10 cmx 10cm

Trials	Flowers used	Acacia gum	Old paper pulp	Fenugreek seeds	Paper size obtained
1	2 cups	Half a tea spoon	1 cup	1 spatula	10x 10cm

Result:1.Experimented strength of the various papers obtained, got the result

that flower paper is stable than all other paper 2.Experimented the acid and base study and compared the result with normal paper and recycled paper as well, flower waste paper showed neither acidic or basic result, it is neutral compared to other papers3.View the obtained paper under microscope, got a good result of bonding between the used substances

Project Code: Env-11   Online ID:2494

Title: Decentralizing Disaster Risk Reduction – a novel Monte Carlo approach to identifying vulnerabilities in urban planning
Name: Samyukta Shrivatsa Std: 11
Guide: Payal Sharma
School: Bangalore

ABSTRACT:

A major issue faced by urban areas in response to natural disasters is lack of proper urban planning. This has created systematic gaps in responding effectively to these events, and recent reports of inundation and related hydrological disasters and the subsequent loss of life and property prove the need for a scientific planning system.In this project, an easy to use mathematical diagnostic model for Disaster Risk Reduction in urban areas based on Monte Carlo algorithms was created .The algorithms used were extracted from Geographic Information System (GIS) software. The MyBhumi application was created based on these algorithms to enable easy assimilation of data from different locations.The testing showed that a decentralized approach to collecting data on the probability and possible outcomes of disaster can provide members of a locality with valuable data on the vulnerable locations that can then be used for preventive measures. In addition, relatively unaffected spots were also identified to create 'safe zones'. The data obtained will be able to aid urban architects in identifying the reasons for the failure of planning in the face of a disaster. Providing data to communities will enable them to judge the dangers posed by various hazards and will also encourage awareness of the steps to be taken in case of emergencies.

Project Code: Env-12 (Team)   Online ID:2240

Title: Compostability study of commercial carry bags and alternative for plastic straw
Name: Kaushik H. J. & Kalyan Reddy K. Std: 9

Guide: Dr. Bhavisha Wala
School: VAGDEVI VILAS SCHOOL, VARTHUR, BANGALORE

ABSTRACT:

1. Carry bags from different supermarkets were collected. These bags were of different thickness. Some of these bags were claimed to be compostable. 2. The bags were cut into 15 x 15 cm squares and were left undisturbed to check its compostability in different places like- i) Soil by the side of the roadii) Vermicompost soil – to study whether it is consumed by earthwormsiii) House Terrace – to study weathering effects   4. Compostability and chemical nature of the soil will be studied   5. Work on finding a biodegradable alternative for plastic straw by using leaves is being carried on.

Project Code: Maths-01 (Team)   Online ID:2316

Title: DEVELOPMENT OF USER FRIENDLY INSTRUMENT FOR DUAL MEASUREMENT OF LENGTH AND ANGLE WITH ENHANCED ACCURACY
Name: Adithi Narayanan & Gowri P Std: 9
Guide: Suryanarayanarao S R
School: SISHU GRIHA MONTESSORI AND HIGH SCHOOL

ABSTRACT:

Instruments to measure both length and angle are not user-friendly and they are cumbersome to handle. Our aim is design user-friendly instrument that can conveniently measure length and angle of objects or measure angle from a drawing. Table Protractors instruments like Circular Vernier, Bevel, Digital protractors have good accuracy; however, these are not suitable to measure angles of smaller drawing figures or smaller sized objects. Today, there are very good instruments to perform length measurements with an accuracy of 0.05 mm. These instruments, for example, Digital Vernier Caliper, are very user-friendly and can provide direct readings. Hence we started to look at these instruments whether they can be adapted for angle measurements. With that context, we want to : (a) Study the mathematics related to measurement. (a) Understand the existing measurement instruments. (b) Develop a method to find angles using length measurements. (c) Apply the same to develop an instrument with better performance accuracy than existing angle measurement instruments. (d) Find the instrument accuracy after the adaptation. In addition to the above goals, the instrument : (i) must display both length and angles directly (ii) must be simple to

handle. Handling wise Digital vernier is simple to handle and provides length value directly on its display. By suitable modification, this instrument can be developed for dual measurement: length and angle. This will make Digital vernier more effective from usage point of view. Also bring out the merits and demerits of the instrument and suggest suitable techniques to overcome the demerits.

Project Code: Physics-01 (Team) (Jr)   Online ID:2500

Title: Mobile Radiation Hazards and Its reduction
Name: Hitesh P S & Vasanth Vignesh Std: 6
Guide: Bhanupriya
School: Chinmaya Vidyalaya, Koramangala, Bangalore

ABSTRACT:

Evolution of mobiles has lot of advantages like connectivity, Entertainment, shopping, business,Safety and also helps in simplification of the work. However, Increase of usage of mobile calls for increase in network of towers and boosters across the world. These towers emit high frequency radio waves or micro waves, that can travel very fast. Closer you are, greater the effect. Mobile phones need Radio frequency waves to make and receive calls. These radiations emitted from mobile phones is called electro magnetic radiation. Though this is low power waves, it is understood that the excessive usage of mobile phone causes many health hazards likea)Increase in blood pressure during the call timeb)Direct brain warming during long usage of mobile phonesc)Risk to braind)Memory loss e)Strokef)Blood brain barrier to ...etc to human livesIn our present work we are trying to find the materials which can absorb these radiations and can reduce the damage caused on the living tissue. These materials can be used as sheets or applied along with the paints such that it reduces the amount of radiations passing through it.We used various materials and studied their ability to absorb the radiation when it is passed through them. Eg of materials like Cotton, Silk, Salt,Protein,Tropical Grass (Darbha) "desmotachya bipinnata", Lemon Pumpkin and Chilli. It is found that some materials are good absorbent of the radiation. Also, the combination of two/more materials significantly changed the radiation values. Suitably using this materials either near source of radiation or destination (hospital, human body, kids, old age people, patients..etc) can effectively reduce the impact

Project Code: **Tech-01 (Jr)**   Online ID:2215
Title: Automatic Medicine Dispensing System for Elderly people
Name: Suryanarayan Renjith Std: 7th std
Guide: Mr Nagesh A S
School: Vibgyor High Horamavu,Bangalore

ABSTRACT:

Medicine dispensing systemExisting problemNowadays in our society, old people are staying alone in their homes. The younger generation is not getting time to look after the old people. When the people go for work, their parents are alone at home and most of them may have different types of medicine to take on timely basis. Since most old people may have memory problems, they may not remember the exact time and type of medicines to consume. Ultimately if they don't take medicine properly, it can affect their health.Proposed systemHere I am proposing a device for this problem. Using this solution, we can keep different types of medicines and we can set the timing also. The device dispenses medicine according to the time and interval preset. The alarm will get off once we take out the medicine.In this project, I used one cardboard case which contains different chambers each keeps a particular type of medicine. A servo motor is connected with an arduino module. The servo motor is programmed to take each step with particular time duration. A buzzer is used to give alarm when the medicine is dispensed.

Project Code: **Tech-02 (Jr)**   Online ID:2294

Title: SENSOR BASED INTELLIGENT ELEVATOR TO AVOID ACCIDENTS INVOLVING CHILDREN
Name: Pragun Pudukoli Std: 7
Guide: Mr. Suryanarayana Rao S R
School: Sishu Griha Montessori and High School, Bengaluru

ABSTRACT:

Aim:The aim of the project is to make elevators safer for children. The intelligent elevator will detect when unaccompanied children are around and make itself non-operational. This will prevent accidents when children try to operate elevators unintentionally. The focus of the project is children up to 6 years of age. Uniqueness:Though the existing elevator system can detect objects near the door, there is no mechanism to identify children specifically. When the proposed system detects a child trying to operate the elevator, the system deactivates itself

and generates an audio alarm – thus making it impossible for children to operate the elevator. Once the alarm is reset, the elevator resumes its normal operation. Methodology:The proposed system uses sensors. It uses a height sensor attached to the door to detect the height of the person entering the elevator. If the height measured is below a certain value, the elevator will not operate. It also uses a matrix of touch sensors on the elevator car floor to measure the foot size. The area measured is used to differentiate between children and adults. If only one of the sensor outputs were to be used, there is a possibility of false positives. For example, a child entering the elevator with his/ her hand raised may trigger a wrong decision if only the height sensor was to be used. Therefore, the output from both the sensors would be combined to increase the probability of making correct decisions. A prototype has been developed.

Project Code: Tech-03 (Jr)   Online ID:2486

Title: Spell Wizard Android App
Name: Megha N Iyer Std: 6
Guide: Narayan Iyer
School: NPS, Agara

ABSTRACT:

Spell Wizard Android AppAbstractMy project 'Spell Wizard' helps abled and differently abled (blind) people to learn spellings.This is made using MIT's AppInventor.The following describes the features and its usage:The application has many built-in words that a student can use for learning.1. Click on the Play button & listen to the audio. Spell Wizard will pronounce the word. To repeat the word, press play again. To skip any word, click on "Skip Word" button.2. Click on the Record button and spell the word that you just heard. The built-in Speech-to-Text engine will recognize the spelt word & verify the correctness.3. If your answer is correct, the system will show the spelt word in green background & play a winning audio.4. If your answer is incorrect, the system will show the spelt word in red background and play a correction audio. In this case, it will also show the correct spelling.5. The system also allows to add your own words and create your own word list. 6. To add your own words, click the "My Words…" button. This will bring up a new "My Words" Screen.7. A user can type or paste from clipboard any number of words they want. Note that the the words must be separated by comma.For e.g if you enter the following text happy,sacrifice,positivethen the system will add all the three words into My-words once you click on "Add to my

word list" 8. If you want the system to play words from MyWords then you must check the "Use My Words" checkbox.9. Note that the system picks the word randomly from the list of words stored (both the built-in list and My Words list)10. To set it into a mode where blind people can use, shake the device and the sytem will perform the Play feature, shaking again it goes into the Record mode where the person can spell the word. Internally as you keep shaking, the app keeps the state variable that keeps alternating from Play to Record. It uses the accelerometer sensor to achieve this.11. Happy Spellwizarding :)

Project Code: Tech-04 (Team)   Online ID:2255

Title: DROWSINESS DETECTOR
Name: D CHIRAG CHINVAR & Jivith Gowda Std: 12
Guide: Santhosh
School: CHRIST JUNIOR COLLEGE

ABSTRACT:

According to the USA road safety department's 2015 report Globally about 46-50% major of the road accidents are caused because of the drivers falling asleep in the car.This accounts to somewhere around about 2000 deaths, 71000 injuries,and about $12.5 billion in monetary loss. From a study a method to detect the drowsiness is by monitoring the eye blink pattern of the driver. In a room of about decent lighting we made a person sit in front of a webcam,it detects his face and then starts monitoring his eye blink pattern.When the driver starts to feel drowsy his eye blink pattern changes from the usual pattern and if he continues to be drowsy for about 2 seconds, the camera detects it and sends a message to the raspberry pi and then pi triggers an alarm inside the car and also flashes the double indicator outside the car to warn other drivers.This alarm is heard until the driver wakes up from his drowsiness.To facilitate the working of this device during night times an infrared LED torch can be used which is invisible to the naked eye and the light can only be detected by the camera,hence there is no distraction. This device is made at a very low cost hence it is affordable.

Project Code: Tech-05   Online ID:2261

Title: MICROCONTROLLER BASED GAS ANALYSER FOR
**   MINIMIZING SCAVENGERS' DEATH IN MANHOLES**
Name: Tarran Sidhaarth Std: 9
Guide: Suryanarayanarao S.R

School: Sishu Griha Montessori and High School

ABSTRACT:

Every year hundreds of manual scavenging workers die due to inhalation of noxious gases while clearing the clogged drains. Manual scavenging is banned by a law passed since 2003. The chances of loss of life in manholes are quite high due to toxic gases present like carbon-monoxide, hydrogen sulphide and methane. AimProject aims at developing a low-cost microcontroller based gas analyzer that will detect and analyze the toxic gases and give warning signals to prompt and ensure safety for the scavengers, in the first phase. In the second phase, develop a real-time analysis, create a data base and transmit the data to the concerned workers and the authorities.UniquenessThere is no low-cost device in use for proper assessment of safe level of toxic gases in the manholes. Also, there is no proper data base available to monitor the gas analysis and take appropriate steps and advise the concerned.Design and Methodology A microcontroller based gas sensors to analyze toxic gases like carbon monoxide, hydrogen sulphide and methane will be designed and programmed to give LCD/LED display and sound alarm. In the second phase, data base is created and transferred to the concerned authorities and scavengers.Broadly the methodology adopted is as follows:1.Building a proto type2.Field trials and demonstrations3.Interaction with experts/field workers4.Creating data base Significance and impact1.Enhance safety awareness and governance2.Minimize deaths3.Create data base for monitoring practice of safe working

Project Code: Tech-06 (Team)   Online ID:2279

Title: HOME AUTOMATION
Name: SRUJITH ANCHURI & SUNKARI POORNA CHANDHAR
     Std: 9th std
Guide: LAV RAVI
School: Delhi Public School Warangal

ABSTRACT:

Today we are living in 21st century. It is necessary to control the home from desired location. Home automation is the control of any electrical and electronic devices in our home or office, whether we are there or away. There are hundreds of products available that allow us to control over the devices automatically but they are too expensive and a common man cannot afford it. Think you built a house with Rs.10,00,000 but if you want to automate your home it takes

minimum Rs.3,00,000. Can you afford it? This project presents a low cost and flexible home control and monitoring system using an embedded microprocessor and microcontroller, with IP connectivity for accessing and controlling devices and appliances remotely using sensors and web applications. This proposed system does not require a dedicated server PC with respect to similar systems and offers a novel communication protocol to monitor and control the home environment with more than just the switching functionality. To demonstrate the feasibility and effectiveness of this system, devices such as light switches, power plug, temperature sensor and current sensor can be integrated with the home control system.

Project Code: Tech-07   Online ID:2392

Title: A low cost device for lungs monitoring and building chest congestion model based on quantitative data
Name: Somanshu Bhattacharyya Std: 9
Guide: Suryanarayanarao S R
School: Sishu Griha Montessori and High School

ABSTRACT:

This project aims at developing low-cost device that can capture sound of lungs amplify, digitize and store them. Chest congestion data will be collected from people to create a database of samples. Create a model that doctors can use for preliminary diagnosis. In second phase, it aims at transferring data for remote monitoring and diagnosis.

Project Code: Tech-08   Online ID:2396

Title: A Mobile Application to help senior citizens with degenerative diseases
Name: Sachin Rammoorthy Std: 10
Guide: Madhu Rammoorthy
School: Stonehill International School, Bangalore

ABSTRACT:

Every day, more than 2000 senior citizens go missing from all over the world. Almost 98% of these senior citizens suffer from some sort of memory-impairing disease such as Alzheimer's and dementia. This is a big problem and requires caretakers to watch over senior citizens 24 hours a day, 7 days a week. This is because mental and physical health issues can force the elderly to become

isolated from everyone. A person with Alzheimer's may not even remember his or her name or address and can become disoriented even in familiar places.These statistics really frightened me and made me think - there had to be some way to curb the occurrences of these incidents! But, sadly, I could not find any sort of solution. Thus, I developed Tracker Jacker - an app which solves this exact problem.There has been a recent revolution in technology with respect to geofencing. This is the use of location-based services to track and alert when an imaginary geographical boundary is crossed. When a user installs Tracker Jacker, he/she will be prompted to enter the emergency contacts and set a geofence for the senior citizen. Making use of location-based services, Tracker Jacker will alert these predetermined emergency contacts when the user crosses a set geofence via SMS. Thus, the caretaker(s) can immediately take action and ensure that the senior citizen is safe.I believe that this app has the potential to prevent many missing persons cases and deaths.

Project Code: Tech-09   Online ID:2433

Title: Smart bin
Name: A Hruday Vikas Std: 9
Guide: Srinidhi
School: Vagdevi Vilas School Marathahalli

ABSTRACT:

Smart BinProject Objective : To design and develop a smart waste collection bin which segregates dry and wet waste and collects it separately.Project Synopsis : The project involves design and development of a smart bin which uses a sensor to distinguish between dry waste and wet waste and collects them separately. The smart bin consists of two collection chambers placed side by side and have common cap which is on a pivot. This cap is fitted with sensors, which detect moisture content in the waste. The cap is free to moved in either way allowing it to dispense the waste into dry or wet collection chambers. The cap is initially locked. When a wet waste material is thrown onto the cap, the sensors present sense the moisture in the waste and send a signal to the micro controller which opens the lock on the wet collection chamber allowing the cap to turn in into it. This causes the waste to fall into the wet waste collection chamber. If the sensor does not detect any moisture, then the lock on the dry waste collection side opens and waste will be collected in that chamber.Result : The project was successfully designed and developed and proved to be satisfactoryConclusion :

The Smart bin was successfully built and the result was satisfactoryInnovation : In today's busy world, people do not have the patience to segregate the waste before disposing. This bin allows them to throw all waste into one bin while it segregates the waste for them