

INSEF ABSTRACT BOOK

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Shree K. G. Dholakiya School

Nr. Balaji Hall, Nana Mauva Circle, 150 Feet Ring Road, Rajkot

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

Project Code:BehvSc-01 (Jr) Online ID:2136

Title: Infra-ray Guide for the Blinds

Name: prashansa maharishi Std: 7

Guide: bajranglal soni

School: dugar english medium school sardarshahr

ABSTRACT:

This is a small device by which a blind person can walk without anybody's help. The blind man will use the device in his hand while walking. The model is based on the principle of the reflection of infra-ray from any obstruction in front of him.

Description

The model consists of one infra-ray generator along with transmitter circuit and a receiver circuit with audio alarm. The transmitted infra ray from the infra-ray diode is reflected from any nearby obstruction within the range of 4-5ft. in front of the blind person. The reflected infra-ray is received by an infra-ray sensor. The received infra-ray signay is amplified by an amplifier circuit, which triggers an audio alarm circuit, resulting in a audio signal from the speaker. This audio signal gives warning to the blind person that there is some obstruction in front of him.

Moreover, the blind person using this device can also differentiate any large hole in his path within the range of 4-5ft.

The circuits, speakers and batteries are incorporated in a plastic pencil box.

Attachment

The model is equipped with two more unique attachments.

i) A simple siren circuit is attached with this model, which will help the blind person to cross a busy road and may save him from any unseen accident whatsoever. This is just to draw attention of the other persons to identify the blind person.

ii) The second attachment is very important in respect of a blind person who can understand the lights of different intensities. Such as dim light, sunlight and artificial light or total darkness.

The circuit used here is a simple audio oscillator along with two light dependent resistance (LDR). When lights of different intensities fall on the LDRs their resistances vary accordingly, which modifies frequency of oscillation of the oscillator circuit and different types of sounds are heard

Project Code:Bio-01 (Team) Online ID:2069

Title: EFFECT OF DIFFERENT LIGHT ON FERMENTATION PROCESS

**Name: PITRODA BANSI BHARATBHAI & RAVARANI
DEVANSHI SALIBHADRABHAI Std: 9**

Guide: BANGORIA JINKAL NAVINBHAI

School: MATRU SHREE L G DHOLAKIYA

ABSTRACT:

To find out an innovative way for immediate fermentation process we used curd, gram flour, yeast, different colored light and cardboard boxes of same size. Put four different colour LED lights. we take milk with butter in bowl, yeast with heat water in test tube, rice flour & gram flour in test tube. Keep close all the boxes after putting test tube / bowl with sample switch on the power supply & observe the bowl/test tube after 12 hrs, 24 hrs, 48 hr

Project Code:Bio-02 (Team) Online ID:2088

Title: Effect Of “ KATALU MAYU” fruit Extract On Oral Flora.

Name: Pooja Umeshbahi Patadiya & Charmi Manojkumar

Bhimjiyani Std: 9

Guide: Radhikaben Sagpariya

School: Late Shree S.G. Dholakiya Memorial School

ABSTRACT:

To check effect of KATALU MAYU on human teeth. We checked whiteness of teeth after applying "KATALU MAYU" ON TEETH EVERYDAY.

To check an antibacterial activity of KATALU MAYU. First of all we had took a fruit of "katalu mayu". We obtained crush from fruit and prepared five different samples by adding neem leaves, mango seeds and water in different amount and made different proportion and checked antibacterial activity against Escherichia coli, Staphylococcus aureus. We obtained powder of katalu mayu fruit through drying it in sun light and shade drying. The active contents in the powder was extracted using solvent extraction method and the extracted samples 1 to 3 (Petroleum ether, Methanol, Chloroform) thus obtained were tested for antibacterial activity against Escherichia coli, Staphylococcus aureus. Positive and negative control sample was also maintained. All the extracts showed significant antibacterial activity against both bacteria. **Project Code:Bio-03** online ID:2099

Title: Anti Microbial activities from different extractions of Moringa oleifera seed.

Name: PANARA DARSHI MILANBHAI Std: 9

Guide: Milan Panara

School: G.K.Dholakiya secondary school(Eng.Med.), Rajkot

ABSTRACT:

The primary focus of this project is on unrevealing the potential of Moringa Oleifera seed up to its full scale.

The antibacterial activity of protein extraction of Moringa oleifera seed was examined against Staphylococcus aureus, Escherichia coli, Salmonella enteritidis, Bacillus megaterium, Pseudomonas fluorescent bacteria's. The results evaluated by zones of inhibition showed that the protein extraction does not have antibacterial activity. Ethanolic and aqueous extraction of Moringa oleifera seed was examined on different microbiological bacteria. The concentration of the extracts used was 20 µl (original). The results evaluated by zones of inhibition showed that extraction have antibacterial activity.

The secondary research of this project is on recognizing the PDCASS value of protein extracted from seeds of M.Oleifera, cholesterol amount, polyphenol & flavonoid contains & anti-carcinogenic property of M.Oleifera's seed.

The later part focuses on find out the properties that maybe present in moringa seed's shell.Thus this project is a quest on divulging the miracle plant, M.Oleifera.

Project Code:Chem-01 (Team) (Jr) Online ID:2072

Title: Colour Chalk-stick from corn flour, POP and different Flower extracts

**Name: LIMBASIYA POOJA JITENDRABHAI & RAIYANI
NIYATI JIGNESHBHAI Std: 8**

Guide: Manoj Ramani

School: Late Shree S.G. Dholakiya Memorial School

ABSTRACT:

Chalk-stick is an essential part of school education and directly affected to the teachers health so we have used colored flower and corn flour and POP to prepare color chalk-stick

for that we extracted color from different colored flower (Yellow from Yellow Tagtes, Orange from Orange Tagtes, Pink from euphorbia royleana and Green from Spinach) and mixed it with corn flour then we add POP as a binding material and prepared different samples with different proportions. Mixture of 30% corn flour and 70% POP have the best results among other samples.Then we gave this chalk-sticks to Science and maths teachers of different schools to check binding abilities, work performance, durability and color fedness were tested out for all the samples to get final product.

Project Code:Chem-02 (Team) Online ID:2079

**Title: INK MADE FROM CARBON EXTRACTED FROM
AUTOMOBILE EXHAUST**

**Name: Akbari Prince Pravinbhai & Bhetariya Siddharth
Ramashibhai Std: 9**

Guide: Charu Goswami

School: Shree GK Dholakiya, pachayat nagar road,Rajkot

ABSTRACT:

In the 21 century you will find a lot of pollution in the form of black carbon from AUTOMOBILES,factories,chimneys and many many another smoke releasing places. This is the main problem of this century.In the garages you will find the workers cleaning exhaust pipes and removing carbon from its wall. Carbon is a black colour pollutant which pollutes our environment the most. We found it near our house and thought to use this waste pollution to make some useful things.

We collected some carbon from our nearby garage and our idea was to make ink out of it by taking carbon as a pigment which is lying waste in the garages. We thought of that but later we found that there were no solvent which can dissolve carbon completely but if it dissolves partially than that colour will be of no use.Then we thought a lot and searched a lot and found that carbon can be dissolved in oil and we can use many oils for this purpose.We tried with the oil and carbon also

dissolved in it but later we found that if we apply it on paper it will get absorbed by the paper and that paper will be of no use.

Then we tried with different chemicals such as chloroform, ether, benzene, acetophenone, etc but in that carbon was not dissolved than we decided to keep oil only because carbon is best dissolved in oil but the innovation we do is we tried with many different oils.

We have conducted an experiment to see which oil absorbs the least on paper. We experimented by putting one drop of each oil on a strip of paper and then letting it dry. We noted the results after one hour, two hours and eight hours. We experimented with the oils such as groundnut oil, hair oil, sunflower oil, til oil, castor oil and found that sunflower oil absorbs the least on paper. So, we finally decided to use sunflower oil and it proved for us the best.

We tried to make ink by taking different ratios of carbon and oil but we found the ratio of 5:1 the best for carbon and oil respectively.

We researched for it till one month and now we are trying to add some resins such as glycerol for improving the quality of ink, we are also trying further for improving different qualities of ink such as density, viscosity, thickness, etc of ink.

Thus, by making such an ink we can use the waste pollution to make useful products and we can turn black pollution into black beauties. We are also trying to make gray and brown colours by mixing different colours with our black colour.

Thus, this is the best way of turning black pollution into black arts. We have attached some of the photographs of our experiments, we have also attached some graphs so please have a glimpse over that. Thus, we have reduced one of the main causes of pollution. We can use this ink prepared for drawings and making pollution beautiful.

Project Code: Chem-03 (Team) (Jr) Online ID: 2092

Title: NATURAL HAIR DYE, FROM MANGO SEEDS, GALI LEAVES AND HIRAKASHI

Name: MEHTA DHARA NITINBHAI & PADMANI HITANSEE SNEHALBHAI Std: 8

Guide: JIGNESH D. VAGHASIYA

School: K.G.DHOLAKIYA SCHOOL, RAJKOT

ABSTRACT:

Hair dye has become an important cosmetic item for human beings in these days for worship and other purposes. Prolonged use of synthetic hair dye has shown symptoms of hair loss, graying of hair, and cancer. In view of the above scenario, a process technology has been developed to produce an alternative safe, non-toxic, eco-friendly natural hair dye. The process uses natural ingredients like hirkashi, mango seeds, and gali leaves as bulking materials and no salt or any heavy metals are used.

Preparation

Materials

Mango seeds, gali leaves, hirkashi and water

Method

Mango seeds ,gali leaves and hirakshi dissolve In water for half an hour ,then after applied on hair remain for 2 to 3 hours on hair .then washed the hair so that hair becomes dark black

Data table

Per 100 gm hair dye

Sr No.	Materials	Weight
1	Mango seeds	50 gm
2	Gali leaves	20 gm
3	Hirakashi	5 gm
4	Water	25ml

Project Code:Chem-04 Online ID:2098

Title: The protection of monuments (made from marble or limestone) by coating of calcium oxalate against acid rain

Name: Divyesh Dharmeshbhai Vekariya Std: 9th std

Guide: CHARU GOSWAMI

School: SHRI G.K.DHOLAKIYA SCHOOL , RAJKOT.

ABSTRACT:

This science fair project was conducted to protect the marble and limestone against acid rain.

First I took 3 pieces of marble each weights of 100 grams , on first piece I did not coat anything , on second piece I coated marble sealant , and on third piece I coated calcium oxalate.

After that I put it to dry. And on the next day I put all three marble pieces into different - different beakers and pour 400 ml of vinegar in all three beakers.

Then daily I remove the piece of marble from the beaker and weight it on weighing scale. I do this for 5 days , and following results came :

Coating Dissolving rate of marble tile in acidic solution (in grams)

	Start	Day 1	Day 2	Day 3	Day 4	Day 5	
No coating	100	75	56	43	31	19	
Sealant	100	96	91	85	79	73	
Calcium Oxalate		100	98	95	91	85	79

Thus from these observation it can be said that the marble tile coated with calcium oxalate dissolved the least in the vinegar solution.

Project Code:Chem-05 (Team) (Jr) Online ID:2103

Title: BLACK INK FROM LEAVES OF ARANI WHICH CAN BE USED AS AN EYELINER AND INK

Name: Pansuriya riya riteshbhai & Mehta Sneha Ashvinbhai

Std: 6th std

Guide: Twinkalben tilala

School: SHREE S.G.DHOLAKIYA MEMORIAL PRIMARY

SCHOOL

ABSTRACT:

METHOD:-

First we took 20 gm leaves of Arani (one plant) and dried it into sunlight for six hours. Then crushed it to get fine powder. We have made an emulsion using 'ghee' in different proportion. Then we made a cotton wick and drop it into the emulsion. Let it be there for some time (1 hour).

Then we collected the carbon dust on smooth surface.

Then added 2 drops of oil.

The herbal kajal is ready.

Take a bowl first.

Then put the ash in it. Which we have made from Arani leaves.

Pour some water in the ash.

Then mix both of these. The ink is ready.

Then take a stamp pad and Pour this ink in the stamp pad.

We can use this ink for any stamp pad.

Project Code: CompSc-01 (Team) Online ID: 2132

Title: Science Hub android application to search science related videos

Name: Jadeja Bhavyarajsinh & Busa Karan Std: 9

Guide: Kothari Kalpesh

School: Gk-3, University road, Rajkot

ABSTRACT:

The aim of Science Hub is to provide educational resources for teachers and parents that helps to make learning of science as a fun and engaging students, and also taking important concepts and putting them into a form that students can not only understand but also enjoy. Inspiring an interest in science at a young age can help students grow up with the tools needed to form questions about the world around them and make decisions based on their own reasoning.

Fun activities, facts, projects and experiments can be the first step in fostering a desire amongst kids to learn more about science and technology, subjects that have practical applications in both careers and everyday life.

Our science project based on education. Now a days in India education is very low so to increase this education level we made an application name science hub in this application there are videos of 10th and 12th standard, and also of college level. In which we have included the videos related to the subjects like chemistry, physics and maths. After these videos some question will be asked in application related same video. Thus by these application the education level will be increased.

Project Code:Energy-01 (Team) Online ID:2094

Title: To Prepare low cost small and handy smart pan cap live electric line detector.

**Name: Dholariya Dhruvit Kishorbhai & Jotaniya Vraj Rajeshbhai
Std: 9**

Guide: Manoj Ramani

School: Divine School, Rajkot

ABSTRACT:

Electricity is a part of our everyday life, We don't know that in which wire electricity is passing and in which not.

We have designed a pan cap live line detector that detects presence of electricity without physical connection, and it prevents from electric shock to human body To make this detector we have used components such as IC - CMOS CD4060, transistor, resistor, battery, LED, buzzer, antenna as shown in circuit diagram.

This detector detection of the mains power is based on the principle of electromagnetic fields that spread out from the wire when a current flows through a conductor. When an electric current flows in the wires magnetic field is generated. We can detect this induced electromagnetic field by device that has high sensitivity only. The CMOS type semiconductor device is a device suitable to be used in this applications. So I choose CMOS CD4060 Ics in order to provide clock signal and divide at the same time. Thus output signal is displayed by LED which indicates the presence of electricity into the wire. This pan cap live line detector can detect electricity from 1 meter distance.

Thus We concluded that this device will be helpful in diagnosing a line whether it is live or not which is convenient to electricians to avoid fatal accidents

Project Code:Energy-02 (Team) Online ID:2133

Title: Get methane Gas from Water hyacinth

**Name: siddhapura janvi bhaveshbhai & dethariya nikita rajeshbhai
Std: 9**

Guide: aambaliya kalpesh kanjibhai

School: g.k.dholakiya school,university road , rajkot

ABSTRACT:

construction :- in the gobar gas plant add dry water hyacinth and digest it and produce methane gas then after to use this gas for cooking and external uses

working process:- water hyacinth contains much cellulose that if we cut half of them plant we can use it in in digested and get lots of methane gas from 1 kg dry water hyacinth 4 cubic meter methane gas produced . this supply can be done by the average family for 4 days and by the power of about 10,000 british thermal units in this way the problem of energy becomes soft and the adage of the water hyacinth become also mild advantages: water hyacinth inrease day by day as it does not rise spreading the entire leafet in a greensheet it suffers all the sponges with fish and oxygen without oxygen what is wrong if it is used to fight the harassed water hyacinth at the time of day - night raids

Project Code:Energy-03 (Team) Online ID:2134

Title: Efficient boiler and stove using Water Fuel WATER GAS BOILER

Name: jayat preek & deepika bochiwal Std: 9

Guide: bajranglal soni

School: basic public school gym sardarshahr

ABSTRACT:

With the help of science center at Gandhi Vidya Mandir , Sardarsahar and Engineering college of IASE deemed university we want to start a project at laboratory to develop Water stove model by designing it . And in different phages we will develop boiler based on water gas and water stove model. In this project the students of Gandhi Vidhya Mandir and engineering college collectively learn that how the consumption of traditional fuel used for boiler like electricity, mineral oil coal etc will be reduced by 40 to 60 per cent and it will be tried to enhance the fuel utilization by using water steam. Generally it is studied that when steam of water is flown through heated coal then carbon of coal and oxygen of water steam turns into carbon mono oxide and hydrozen separates from it. In this reaction the mixture of hydrozen and carbon monoxide works as a inflammable gaseous compound. In general language it is called water gas. This concept is turned into technology and a prototype is created at science center. The following weakness was found in this project:

- 1)Today wood coal and mineral coal is less used in homes for cooking purposes.
- 2) It is not cost effective for the ordinary household.

Second Attempt

In second attempt a kerosene stove was taken instead of wood coal stove. The basic principle was that when a steam water is blown on red hot iron particles, hydrozen and oxygen get separated in this process and oxygen reacts with iron to form iron oxide and hydrozen remain as it is. This residual hydrozen is used as a inflammable fuel. For practically see this process water stove is prepared according to the picture. By observing this experiment it was found that about 30 to 35 per cent of kerosene oil is saved. In this scenario the burner was developed and water is sent through gravitational force in the burner. There was need to further develop this model.

Project Code:Engg-01 Online ID:2073

Title: Smart File (File Clip with punching facility)

Name: Gohel Pragati Dipeshbhai Std: 9

Guide: Manoj Ramani

School: Late Shree S.G. Dholakiya Memorial School

ABSTRACT:

Different types of files are being most common stationery in our daily life. we are used to file our important documents. before filing documents we have to punch it.

Here we modified file clip with innovative way which is having inbuilt punching system.

First of all we took one box file and remove its clip then we attached punching blade with one end of clip and the small pipe with the other end as shown in photograph.

After several modification file with punching ability is prepared.

Project Code:Engg-02 (Team) (Jr) Online ID:2074

Title: INNOVATIVE WAY TO PASS AIR THROUGH THE PIPE TO SOAK THE CLOTHES QUICKLY

Name: DANGAR SAUMIL DINESHBHAI & Rangani Jay

Maheshbhai Std: 8

Guide: Manoj Ramani

School: Divine School, Rajkot

ABSTRACT:

Washing and drying clothes are routine task of our life. It take more time to dry clothes in the rainy season and the humid environment. So we have prepared new design of string to dry clothes In this design of string we have used hollow PVC pipe. We made holes on the surface of the pvc pipe and then passed hot and dry air through the pipe and this will help to dry clothes in less time because it will dry both sides of clothes.

We had compared time taken to dry the clothes with tradition string.

We took a PVC hollow pipe and made hole in PVC pipe. and We have stuck aluminium foil on it that will help to hold temperature in it.

We are plan to put a copper wire in between PVC pipe and heat it up to 50 degree Celsius and it will decrease time to dry clothes.

Project Code:Engg-03 (Team) Online ID:2075

Title: FLOATING WATER PUMP: AN INNOVATIVE WAY TO SAVE ENERGY

Name: Gokani Kevin gajendrabhai & JOTANIYA KEYUR

DIPAKBHAI Std: 9

Guide: Rakshit Kanjiya

School: RAJKOT-5

ABSTRACT:

Water is one of basic need of living being. Water supply or distribution is one of most important task for any government and water pump is helpful instrument for water distribution. So we have find-out a new technique for efficient use of water pump.

For that first we took water pump and attached one airtight plastic bowl (in this box we can fill any material as per requirement) which helps the motor to float on water surface. It depends on the density of total system. So this floating water pump can accrue water with more force. We have compared force and flow of water of floating water pump with normal water pump.we also have measure the power consumption of both condition and output water in both the condition.

Project Code:Engg-04 (Team) (Jr) Online ID:2076

Title: To protect crops from birds and animal by using mechanical scarecrow.

Name: Mehta Vardhman Siddharthbhai & Mehta Prayag Rohitbhai

Std: 8

Guide: Rakshit Kanjiya

School: RAJKOT-5

ABSTRACT:

The common form of scarecrow is human figure dressed in old clothes and placed in open field to discourage birds such as crows or sparrows from specific field of farm. Instead of this we have made a mechanical scarecrow which generates noise and has LED lamp to distract birds at night.

If we have big farm then we have to use more scarecrow which take more affords. Instead of that if we use this scarecrow it can generate more noise at day and night for big farm. It has additional function of LED light.

Procedure:

Take an axle of bicycle.

Joint DC generator motor.

Joint axle of bicycle with conveyer belt.

Take plastic fan and joint it with conveyer belt.

Take chain and joint it with other side of conveyer belt.

Take a wooden stand and joint it with metal dish.

When this plastic fan will rotate chain will also rotate and it will generate noise when chain wandered with steel dish.

Project Code:Engg-05 (Team) Online ID:2081

Title: UNBREAKABLE AND FLEXIBLE BUTTONS MADE FROM PVC ABS

Name: BHENSADADIYA JENI ANILBHAI & BASIYA CHARMI

ASHOKBHAI Std: 9TH

Guide: RAKSHIT KANJIYA

School: MATUSHREE L.G. DHOLAKIYA SCHOOL RAJKOT

ABSTRACT:

In our regular life style, we use plastic material for our day to day work. Some of those plastic get wasted after use of them and it is harmful for environment, so it is necessary to recycle plastic.

So we have made buttons from waste plastic named ABS(Acrylonitrile Butadiene Styrene) and PVC(Polyvinyl Chloride)

we have used molding machine to give shape of button.

we have made two types of buttons 1. unbreakable 2. flexible

we can make different shape of button by different dyes.

color can be obtain of our choice by adding color while making button.

Project Code:Engg-06 (Team) (Jr) Online ID:2097

Title: INTERNET OF THINGS WATER LEVEL INDICATOR

Name: DONGA AVADH LALITBHAI & DONGA SHYAM

ARVINDBHAI Std: 8

Guide: JIGNESH D. VAGHASIYA

School: K.G.DHOLAKIYA SCHOOL,RAJKOT

ABSTRACT:

Materials required: Nodemcu ESP8266 IoT development board, LM358 operational amplifier, 10k potentiometer, 9V smps power supply, resistors, capacitors, connecting wires, pcb, soldering iron etc.

Software required: Arduino IDE, Blynk app on a smart phone

Construction: solder the components according to the circuit diagram

Working:

- The ESP8266 is a microcontroller with a WiFi node. During programming the SSID and password of the wifi network which has to be used is installed in the Nodemcu
- The water level in the tank is measured by a float which is connected to a variable resistor called the potentiometer.
- As the water level changes the float moves up or down depending on the level increase or decrease
- The movement of the float turns the potentiometer which changes the voltage of the potentiometer.
- The output of the potentiometer is given to LM358 and then to the analog in of the nodemcu
- The nodemcu measures this value with its analog to digital converter and then forwards it via internet to the Blynk cloud.
- Blynk app is downloaded in a smartphone and an account is to be opened with it
- A gauge widget (a display on which the water level will be shown) is brought on Blynk dashboard and programmed to accept input from our hardware
- The system is now ready to work
- Blynk app downloads the value via internet from the blynk server (cloud) and continuously displays it in graphical form

Project Code:Engg-07 (Team) Online ID:2102

Title: An offline tool which can help to count word during cursive writing process

**Name: GHETIYA HETVI JITENDRABHAI & GAMDHA DIYA
PRAFULBHAI Std: 9**

Guide: HIREN SAKARIYA

**School: G. K. DHOLAKIYA SCHOOL, UNIVERSITY ROAD,
RAJKOT**

ABSTRACT:

An offline tool which can help to count word during cursive writing process. We have prepared offline tool to count hand movement while writing process. Daily writers who have kept daily word count goals for article or newspaper pages are need to count word. Even it is also useful to students for language assignments which is measure by length of pages. So this tool provides an extensive statistic about the number of words, characters and character with space. It is based on hand movement during cursive writing process.

Project Code: Engg-08 (Team) (Jr) Online ID:2104

Title: To make microcontroller based smart walker which stops automatically when stair will come in the way.

**Name: Maniyar Margi Shaileshbhai & Meghani Rajvi Anilkumar
Std: 8**

Guide: Chavda Arjun

School: Shree G.K.Dholakiya High School, Uni. Raod Rajkot.

ABSTRACT:

walker is became an important part of kids life till the age of 10 months to 18 months it helps kids to walk independently stop them to fall down while walking on plane surface but if there is any step of other uneven surface than there may be chance to fall down. So we have done some modification in normal walker

As shown in the figure when the walker is running on the plain area then at that time the walker transmitts the signal from the ultrasonic sensor and the receiver receives the signal.

But when the surface is not plain ie there are steps or stairs or any open underground water tank or any pit then signal from the transmitter will not be received in the regular time(it received signals later).

According to the programming done it micro controller signal will be generate which is further transmited to the breaking system.

Which made with solenoid push pull switch if follows the microcontroller's message and it helps the walker will stops and save the child.

Project Code:Engg-09 (Team) (Jr) Online ID:2106

Title: To Make Four Wheel Mechanism To Park Vehicle Easily

Name: Sinojia Nandan Tarunbhai & Chandasana Hit Dhirajbhai

Std: 6

Guide: Maradiya Darwin Ghanshyambhai

School: Shree K.G. Dholakiya primary School-Rajkot

ABSTRACT:

Now Days,Big and Heavy Vehicles have big problem is how to turn in very short and narrow area like street ,parking ,at traffic signal,mountains road way etc...its not possible in vehicle.

so we have got solution of this problem.We have made this mechanism vehicle it can turn very easily.

we can solve this world's problem with help of this four wheel mechanism vehicle.

we can use it in the Parking-trolley,walker and hover-board also.

For this

✓ First of all take one wooden plate.Then draw parallel four rounds.Then cut it by cutter.Then make a hole between four rounds,also cut it by cutter.Wooden plate put in to the hole.It's both edges are joint by plat with the help of screw. 17 cm wooden plate sticks with it.Then take thin two wooden plates joint it to number 1-4 wheel and 2-3.After that big plate is attach with the big plate.

If we use this mechanism in big and heavy vehicle then problem of to turn it at short and narrow area like street ,parking area, traffic signal and higher mountains road way etc.

we can use it in the Parking-trolley,walker and hover-board also.

Project Code:Engg-10 (Team) Online ID:2107

Title: A New Design of Walker it can be helpful of handicap person for steps up and down

Name: Lalpara Aastha Shaileshbhai & Gami Kruti Maheshbhai

Std: 9

Guide: Mrs. Apeksha Joshi Raval

School: Shree G.K.Dholakiya High School,Uni.Raod Rajkot.

ABSTRACT:

By surfing on internet we found there are so many research works has been done for modified walker but we did not found any walker for helping to steps up and down for physically handicapped person. After surfing we had decided to prepare modified walker for physically handicap person.

A walker is often used by those who are recuperating from leg or back injuries. It is also commonly used by persons having problems with walking or with mild balance problems.

Some people are born with a disabling condition (e.g., Down syndrome) or demonstrate a condition early in life (e.g., autism, bipolar disorder), whereas others acquire disabilities through injury (e.g., spinal cord injury) or a chronic condition (e.g., limb loss because of diabetes), and still others develop a disability in later stages of life (e.g., dementia, age-related mobility disability). The health needs of people with disabilities vary with the type of limitation (e.g., mobility or cognitive) and by the

condition underlying the disability (e.g., spina bifida, Down syndrome). For some, such as people who acquire disability through injury, the nature of their disability can be differentiated more readily from their health status.

Now a day's walker are used to be sell in the market, but with that handicap person do not up and down the steps. But the walker that we had made handicap person used to walk in each & every situation. That is why we have made this walker. It can be used anywhere like even or uneven road, big or small steps. This walker can also be made from iron or woods.

The person walks with the frame surrounding their front and sides and their hands provide additional support by holding on to the top of the sides of the frame. Traditionally, a walker is picked up and placed a short distance ahead of the user.

Project Code: Engg-11 (Team) Online ID:2109

Title: Edible Vessel from Wheat, Rice and Jowar Flour

**Name: KRUPALI DIVYESHBHAI PATADIYA & SALONI
MANISHBHAI VAGADIYA Std: 9**

Guide: KALPESH J. KOTHARI

School: G. K. DHOLAKIYA SCHOOL, RAJKOT

ABSTRACT:

To decrease environmental degradation it is important to reuse waste materials or to decrease the pollution. We have developed a novel composite sheet from edible ingredient that can be use for various applications.

First we have taken wheat, jowar and rice flour in different proportion like 25-50-25, 50-25-25, 25-25-50, 33-33-33. We have made dough of all this items and then we gave shape of spoon, bowl and plate with the help of steel spoon, steel bowl and steel plate, then we bake this entire vessel in 220 degree on oven for 10 to 15 minutes. The spoon, bowl and plate were ready.

But there is no any test so to make it testier we made another mixture of wheat, jowar and rice flour in a proportion of 30-30-30 and remaining 10 percent were field up with black paper, cumin, ajwain and salt, according to the taste (its proportion can be vary as per test). After that we have done the same process of making the dough, molding the vessels and baking into the oven same as previously we have done. And as a result now the vessels made is testier. Now this vessels can be use to serve food items and also it can be eat though it is made up from edible ingredients.

Project Code: Engg-12 (Team) (Jr) Online ID:2112

Title: From waste CFL holder to make a tube light

**Name: KHUNT JENIL KAUSHIKBHAI & Khunt Dipesh
Bhupendrabhai Std: 7**

Guide: Timbadiya Rinkalben

School: LG Dholakiya School, Krushnanagar main road, Rajkot

ABSTRACT:

We had use the wastage circuit of CFL (Compact Floresant Light) to operate tubelight

o First take a make CFL holder and 20 V tube light and four wires.

o Pass four wires from thus holder connect. Two wires too. in Front of side

and two wires back side of the tube shown as the figure.

o Hold the holder and the tube with a wire.

o thus Make a tube light.

Project Code:Engg-13 (Team) (Jr) Online ID:2115

Title: A tool removing a quick rust from the iron

Name: desai Vansh Pravinbhai & Kalavadiya Shrey Nileshbhai

Std: 7

Guide: Chauhan Akash Kiritbhai

School: L. G. Dholakiya School

ABSTRACT:

We had design a tool which is helpful to remove rust from iron quickly for that

Take the first two-inch wooden can non bins and put a small hole in between. Then shape it in the middle of the shape of the Ashok chakra. Then cut it with the diagonal to the horizontal, then cut the glass paper from two inch of each mirror paper. Then the wooden torture knit supplied favicol. Paste the glass paper into it. Then the hall is supplied between lumbrera. Apply it to the Frenchman.

Take a round compartment, cut the portion of it slightly, then the put a hole in it and make a square hole in it, put a small switch in it and put a small hole in the box and put the plug in it. Then tap the two wire of the plug and the two wires of the switch into one and of the plug and tape each other to the end of the switch. Since then in the circle of the circuit wood of the motor. If it is thin between the Fransner's body and the body's body compartment, then roll the tape of the motor body. After that the two ends of the motor and plug in one end of the plug, tapping the tape, giving the power supply to the plug, switch the rotation on the cut cut material will be cleaned by the rust.

Project Code:Engg-14 (Team) (Jr) Online ID:2116

Title: TO MAKE PORTABLE AND LOW COST HAIR DRYER FROM PET BOTTLES

Name: VADALIYA KRUTI ATULBHAI & SHEKHAT TEJASVI BHARATBHAI Std: 7

Guide: KRISHNABEN PRAVINCHANDRA KABIR

School: G K DHOLAKIYA SCHOOL UNI ROAD RAJKOT

ABSTRACT:

We have made portable and low cost hair dryer from waste plastic bottles

First of all we cut the bottle into two parts from center than make holes on the bottom side and arrange one dc motor(12v dc) inside it. And attached plastic fan on the axis of the motor. And connect it with adapter.

Than we make two holes on the other part of bottle and pass tongastone wire through this hole and joined it with 12v dc adapter through the swtch. Now we attached both the bottles with each other so that wire can stay in front of the fan, now wrap gum tap on both bottles When we on the switch fan will blow the air and it will passes through the tonsastone wire (which is hot). This way we can get hot air and use it as a hair dryer then we measured its speed of air and temperature.

Project Code:Engg-15 (Team) (Jr) Online ID:2121

Title: Home made Sharpener for Vexing colour or Pencil

Name: Rathod Rutvi Bharatbhai & Saradava Bansi Manishbahi

Std: 7

Guide: Timbadiya Rinkal

School: L. G. Dholakiya School

ABSTRACT:

First take a DC Motor, Then take a battery sharpener, switch and two wires.

Fix a battery with D.C. Motor then connect power jointer with the battery.

Connect the wire of power jointer and the wire of motor with a switch.

Connect a pulley with the motor then fix this pulley with the sharpener. arrange this all arrangement into the Plastic box.

Project Code:Engg-16 (Team) Online ID:2122

Title: fly wheel bicycle (High efficiency Bicycle)

Name: sweety jaisansariya & vanshika soni Std: 9

Guide: bajranglal soni

School: dugar english medium. school sardarshahr

ABSTRACT:

We need energy in our daily life to complete our routine work and to full fill this purpose we depend on conventional energy sources like mineral oil, coal and etc. that are not good for our health. So we have to do mainly two solution to reduce the consumption these sources. First, we can reduce the consumption of energy by increasing the efficiency of the current scientific equipments and second, we will have to find alternate option like non-conventional energy sources.

By the use of this presented equipment we have tried to increase the efficiency of scientific appliances to make our life easier.

We can reduce the consumption of physical energy by do some improvements or up gradation in current methodology of bicycle and we can also use bicycle to do other work to save the energy. Considering these points I have increased efficiency of bicycle and make it applicable to do work.

What is new:

1. To increase the efficiency of moving sources, engine of rail, motorcycle, bus, truck etc..., we have attached the flywheel with the crank shaft. But till now there has been no implementation of this kind of technology in bicycle. To overcome this deficiency we have implemented this instrument in bicycle.

2. We daily release our muscle energy in morning exercise in gym or garden. But there is no use of muscle energy that is released at the time of exercise. This deficiency is been also fulfilled in this instrument. In this system we have used kinetic energy released by exercise to pump the water.

BATTERY CHARGING DATA

S.N	SOLAR PANNEL v	a	W	Amp	time
1-	10w no.1	12	1.2A	10w	

- 2- 10w no.2 12 1.2A 10w 3.2aw 2hrs
 3- 3w no.312 0.4A 3w
 4- 3w no.412 0.4A 3w

D.C. motor and gear box

s.n. normal start motion time distance

- 1- 1.0am. 1.5amp. 1.2am. $5/1.2=4.16$ hrs

Distance cover by fly wheel

s.n- normal start motion time distance

- 1- 1.0am. 1.7amp. 1.0am. $5/1=5$ hrs

Project Code:Engg-17 Online ID:2129

Title: Sole and Tile generator: A smart way to generate electricity by walking.

Name: Chakreesh Minnal Std: 10

Guide: M.G.Muthuvelu

School: Delhi Public School Bharuch

ABSTRACT:The project is all about producing electricity in a simple and eco-friendly way. This project is a device which uses solid materials to generate electricity which is known as Piezoelectricity. The device will be fitted in the shoes and when we step on it, energy will be produced which will be stored in a power bank. The stored electricity then can be used to charge the mobile phones, and other devices which use less power. It is a simple yet an effective idea which can help in reducing the dependence on alternative current. The main concept behind the project was to find an alternate source of energy which can be used to charge our gadgets which are used on everyday basis.

Piezoelectricity, also called the piezoelectric effect, is the ability of certain materials to generate an alternating current voltage when actuated. Certain ceramics, Rochelle salts, and various other solids exhibit this effect. For example, $(Pb[Zr_xTi_{1-x}]O_3$ where, $0 \leq x \leq 1$), also called PZT, will generate measurable electricity when their structure is deformed by about 0.1% of the original dimension. A piezoelectric disk generates a voltage when deformed (change in shape is greatly exaggerated) .In this project, the generated electricity on a specific time will be recorded and determined if it would be enough to completely charge a Li-ion battery or a high capacity capacitor.

Project Code:Engg-18 (Jr) Online ID:2146

Title: TO GET THE PLACE WHERE ITS HARD FOR THE HUMANS TO REACH WITH THE HELP OF WALL CLIMBING ROBOT

Name: TATSAT BHAVESHBHAI SHAH Std: 7TH STD

Guide: MAHESHWARI AMITBHAI SACHAKIYA

School: SHRI G.K. DHOLAKIYA SCHOOL UNIVERSITY ROAD

RAJKOT

ABSTRACT:

Wheg climbing robot is a robot which can get to the places where its hard for the humans to go like inside big machinery or any metallic surfaces or to take photos to see the problem in any machine part in a very is way. It can be operated wireless also and can carry camera to take photos also.

working pattern

With the power supplied from the battery the motor gives the thrust to the legs attached to its dual shafts. It is very easy to move.

MATERIALS

1. DUAL SHAFT 100 RPM DC MOTOR
2. 200 MAH LI PO BATTERY
3. NEODYMIUM MAGNETS
4. ELECTRIC CASE FOR WIRING
5. USED PLASTIC FILE OR Folder
6. MICROPHONE CAMERA

PROCEDURE

Take a 100 rpm dc motor. Cut the stripes from the plastic measuring 4.5 cm in length and 1.0 cm in breath. Bend them using the candle. Cut the sketch pen from the bottom and stick them to the dual shaft. Now attach four legs on each of the shaft on the sketch pen. Now take up plastic file cut stripes of 3.0 cm in length and 1.0 cm in breadth. Attach the magnets on one of the end of the stripes. Now take the 200 miliampere battery and connect it with the motor using the switch. The wheg climbing robot is ready and can move on metal surfaces.

advantage

it can go to the areas there its hard for human to go.like big machines and can work with the help of hydro electricity and easy to maintain.

disadvantage

It can climb on metallic surfaces only.

Project Code:Env-01 Online ID:2071

Title: BIODEGRADABLE DISPOSABLE PLATE MADE FROM PALM AND TEAK LEAVES

Name: RATHOD ADITYA BHANUBHAI Std: 9TH

Guide: RAKSHIT KANJIYA

School: MATUSHREE L.G. DHOLAKIYA SCHOOL RAJKOT

ABSTRACT:

Today for our environment, we need to find innovative ways to recycle waste product. In this project, we have created a novel process to use the waste palm and teak leaves to make a biodegradable disposable plate.

First I Took dry palm leaves, teak leaves and gum guar. Then I have spread paste of gum guar on upper side of both leaves and put these slides for 3 hrs to make it dry enough. After that I have

pressed this slides in the molding machine at pressure of 70 kg per square cm. Thus we can make different shape and size of plates.

I have compared standard product and my product for water absorption, oil absorption, biodegradability, heat transfer, Moisture, Max. Stress, Migration test, Total ash.

it has many applications and advantages.

Project Code:Env-02 (Team) (Jr) Online ID:2087

Title: To check effect of Neem Seed Kernel Powder and Garlic Husk On Wheat

Name: Meet Bhaveshbhai Radadiya & PADHIYAR DHUVIL BRIJESHBHAI Std: 8

Guide: Manoj Ramani

School: Late Shree S.G. Dholakiya Memorial School

ABSTRACT:

To ensure high yield and quality in production of organic vegetables , crops often require application of additional fertilizer during the season. Due to the risk of contamination of edible plant products from slurry, plant-based fertilizers may be used as an alternative. The purpose of our work was to develop specific high nutrient concentrations (e.g., nitrogen [N], sulfur [S], and phosphorus [P]) that are released quickly after soil incorporation and that are easy to handle during storage and application. To distinguish from traditional green manures that are grown to improve soil fertility, natural fertilizer is used. To further investigate fertilizer pot and field experiments were conducted with Neem seed kernel (*Azadirachta indica*) and garlic husk(*Allium sativum*).

India is a agricultural country. In current era farmers are using fertilizer to get more crops in farm.

To make a natural fertilizer we have taken neem kernel husk in last year and have checked its effect on wheat.To increase the effect of fertilizer and to add some content of insecticide we have added garlic husk.Same as done in last year, in this year also we have compared its effect with NPK and Urea fertilizer and we find that this fertilizer give more crops.

Project Code:Env-03 (Team) Online ID:2091

Title: Eco friendly colors from waste vegetables

Name: KAPURIYA SHREYA DINESHBHAI & DHANKECHA FENIL GOPALBHAI Std: 9

Guide: YOGESH K.KACHCHHI

School: K.G.DHOLAKIYA SCHOOL,RAJKOT

ABSTRACT:

The aim of the project is to prepare chemical free colors from biodegradable waste materials. Like rotten the vegetables and fruits to overcome the problems of chemical containing colors. As the sours of colors are eco friendly, so we can use to make useful products. The result shows positive effects.

AiM:To prepare chemical free color from biodegradable waste.

Preparation -Equipments mixture.

Materials vegetables and fruits,water,acetone.

Method

- First of all, take a waste vegetable or fruits.
- Then after piece them.
- Then after add some water and crush them in the mixture.
- Then after add a acetone as per necessary (requirement).
- Then give proper shape.
- Thus, color will ready.

Data Table:

Per 1 color stick

Vegetable weight

BEET 25gm

SPINACH 30gm

MANGO 20gm

POTATO 27gm

BRINJAL 15gm

Conclusion

Chemical colors are very popular since long time but chemicals are used in that it may. Causes harm to us but here we have tried to make chemical free colors from biodegradable sources. Which neither harms to us nor to environment. So by this process we can replace chemical colors with eco friendly colors.

Project Code:Env-04 (Team) (Jr) Online ID:2100

Title: To Make Bio-Degradable Plastic Which Degrade In Soil Within 8 Hours

**Name: Panasara Mahrshi Nileshbhai & Vachhani Nandan
Dipeshbhai Std: 7**

Guide: Kachchi Akash Ramjibhai

School: Shree K.G. Dholakiya primary School-Rajkot

ABSTRACT:

We know that plastic is very harmful for environment.It can not be decomposed by any how.so we made biodegradable plastic which decomposed in soil.thus we can stop pollute environment.

We Have Made plastic from corn flour ,castor oil,vinegar,gelatin powder.all ingredients is taken in different-different proportion.After Several Experiment we had finalize the proportion.

First Of all we mixed Vinegar-6ml, Castor Oil-5ml, Baking Soda-5ml,

Corn Flour-10gm, Gelatin Powder-40gm. and dissolve them into 10ml Water.

shake it proper.Then put it for drying for 24 Hours. Then heat it on stove at 333k for 5 minute.

Then mold it in molding dish and keep it for 24 hours in molding dish. Then exclude it from molding dish.

We have tested it's Biodegradability, Sustainability, Heat Resistance, Water insolubility.

After experimentation we conclude that this product can be a better natural option of polythene.

Project Code: Env-05 Online ID:2101

Title: COASTAL WATER GARBAGE CLEANER

Name: VISHWA PINAKINBHAI JANI Std: 9

Guide: YOGITA PATEL

**School: K. G. DHOLAKIYA SCHOOL, 150 FT RING ROAD,
RAJKOT**

ABSTRACT: coastal water garbage cleaner is a bin used to clean the ocean . It collects waste from the water without disturbing any marine animals. It also separates oil from the water & makes the water clean. Coastal water garbage cleaner can be used anywhere in the ocean & by anyone. It needs a motor of 110-220 v to work in the ocean . Coastal water garbage cleaner can also be worked with another eco friendly energy..

Project Code: Env-06 (Team) Online ID:2110

Title: A novel process to create composite sheet using groundnut husk, guar gum and coconut tree's skin

**Name: Garsondiya Prachi Shaileshbhai & Topiya Janvi Sudhirbhai
Std: 9**

Guide: Ms. Binal Godhasara

School: Shree G.K.Dholakiya High School, Uni.Raod Rajkot.

ABSTRACT:

To decrease environmental degradation it is important to reuse waste materials and put them to good use. We have developed a novel uses of coconut skin, groundnut husk and guar gum to create a composite sheet that has variety of applications.

First we make simple sheet from groundnut husk and guar gum but its strength is very low. Then we used coconut skin and guar gum. We checked which proportion is best binding capacity we used groundnut husk and guar gum in different proportions like 50-50, 60-40, 70-30, 80-20, 90-10. Then we spared coconut skin. The base composite sheet created was tested for water absorption, oil absorption, moisture. It is light - weight. Our optimization experiments showed that 50 % groundnut husk and 50% guar gum forms the best combination the base sheet.

Collect the groundnut husk and dry in sun it for one day. Take the guar gum with drained husk and crush in mixture grinder and required amount of water and make a sheet and spread on coconut skin. The overall process done easily and does not require any heating. Thus, our sheet is ready to use. It can be used in various applications.

The composite sheet created can be used for variety of application such as, boxes, and file & furniture etc. We also made germination pot using our material. Once the seeds germinate in our pot, it can be directly put in the ground pit without the need to transfer the germinated mud block

into the soil separately. Unlike plastic germination bags, our germination pot is natural & biodegradable.

We did a detailed comparison of the physical properties, biodegradability, and user experience of sheet made from coconut skin and groundnut husk composite sheet standard commercially available sheet from the measurements of water and oil absorption, degradation time in soil etc. We find that our composite sheets provide an ecofriendly and cost-effective alternative to the standard sheet used.

Project Code: Env-07 (Team) (Jr) Online ID:2111

Title: COLOUR CHALK STICK FROM EDIBLE COLOUR

Name: Fichadiya Abhisek Mayurbhai & Dharaiya Kartik

Bhupendrabhai Std: 6th std

Guide: Poojaben Bhatti

School: Late Shree S.G. Dholakiya Memorial School

ABSTRACT:

Method:- Chalk-stick is an essential part of school education and directly affected to the teacher's health, so we have used edible color and POP to prepare color chalk-stick. For that we took color (pink, green, yellow, blue) and mixed it with white cement and limestone then we added POP as a binding material and prepared different samples with different proportions.

Then we gave this chalk-sticks to Science and maths teachers of different schools to check binding abilities, work performance, durability and color fastness were tested out for all the samples to get final product. (Mixture of 33.33% white cement, 33.33% limestone and 33.33% POP)

Project Code: Env-08 (Team) (Jr) Online ID:2119

Title: TO FIND OUT AN INNOVATIVE IRRIGATION SYSTEM FOR EFFICIENT USE OF WATER WITH COTTON THREAD

Name: DIYA DINESHBHAI DUDHAGARA & DOBARIYA RASHMI CHHAGANBHAI Std: 6

Guide: ARJUN JAYESHBHAI CHAVDA

School: G K DHOLAKIYA SCHOOL UNI ROAD RAJKOT

ABSTRACT:

Drip irrigation system is most popular irrigation system for plantation in the farm we made cotton thread irrigation system model using hanging cotton thread in the pipe. At first cotton threads are wound around to the stem and roots of plants. The other end of the thread is connected to the water pipe which is directly connected to the water tank. So plants get water drop by drop (water soluble fertilizer are added in water) through cotton thread. Rest water is collected through the pipe pumping to the water tank so that it can be reused

This way plant can absorb water from water tank through the cotton thread as per requirement. We compared it with drip irrigation system. With this techniques we can save water as well as fertilizer and other supplements.

Project Code: Env-09 (Team) Online ID: 2131

Title: Natural pesticide by wild plant of Rajasthan (solanum xanthocarpum and CITRLLUS COLOYNTHIS

Name: priti bhati & anuradha bhati Std: 11

Guide: bajranglal soni

School: meera nicketan s.s. school gandhi vidya mandir sard

ABSTRACT:

Explosion of population and continuous shortage of agriculture land. has created the problem of shortage of food grains production that is why day by day the tradition of new scientific inventions and resources have developed which is supposed to be correct to face the food problems .but due the use of unnatural means humanity has created more serious problem than food shortage . because we have started the use of chemical fertilizer and pestistates .

In the present recommendation by experiment and invention the plants available in rajasthan which possess the qualities of killing in seeds & weeds Like neem . just like neem there is are another plant with the name (solanum xanthocarpum)the disereption of which is available is aurved Literature which is not consumed or eaten by the cattle's even possessed the qualities of pain killing .the juice of this plant can be utilized as natural pestisid it has been proved by experiment .

Kantakri or Ringani is a wild thorny which is usually found in tropical and moist part of world. It is the most useful fodder of Rajasthan cattle at the time of famine. Rural people are getting tooth and ear pain relief from the smoke of Ringini seeds. We find mention of its use in Dhanvantri's Ayuarvade scriptures as washing wound respite and immunization. At the base of these facts we made a hypothesis for the use of this plant's products as natural pesticide for practical and research work and we got data's by researchical survey . We can to know many experiments that pests, which may harm crops of maize, Great millet, pearl, Millet, Wheat and mustard can be perished by the different percentage level solutions. Since it is used at cattle feed and medResult Katra

1. Katra on plant is destroyed by mixture of 0.02%
2. does not effect on the development of the plant
3. development and formation of Leaves paragan develop& Lives systematically

Result sundi

1. Sundi on the plant destroyed with the spray of 0.02% mixture
2. No effect on the development of the plant
3. leaves development & formation of leaves and paragan develop systematically

Result telia

1. Telia is destroyed on the plant by the spray of mixture of 0.0025%
2. No effect on the development of the plant
3. Formation of leave and paragan develop continue completely systematic

icine contains so it is not injurious for badly structure

Title: Multipurpose Unloading Van

Name: tushar muherjee & nikita saini Std: 7

Guide: bajranglal soni

School: dugar english medium school sardarshahr

ABSTRACT:

Proposal

In today's time hydraulic van is used to unload materials. But it has a problem that it can unload materials in one direction only, that too only in rear direction. Suppose that we have to unload in right or left direction in narrow lanes then it is not possible to do this from these vans. So this model is created keeping this problem in mind

Principle

Following principle is used in this model

- 1) Simple lift principle
- 2) Principle of producing Effective Rotatory force by electrical magnet
- 3) Hydraulic principle based on rule of pressure of liquid

Used Material

Iron rods , Syringe , Liquid, Piston , Electrical magnet, Electrical motor, Gear Box, Aluminium ply, Wood , Nut-bolt, Color

Working method

In this experiment we can make three different models of truck by using three different methods.

- 1) By using simple levers and lift method it was tried to move back of the truck in right and left direction
- 2) In second model by using disposed syringe and piston hydraulic force is produced to move truck similarly as in first model
- 3) In third truck by using electric motor through electrical energy force was generated just like first and second model. So in this model instead of using hand force or hydraulic force electrical force is used.

Use

1. Materials can be unloaded from all three sides . So you can unload your materials at your desired location
2. In this method fuel is saved with time and labour
3. Student can practically learn lift , hydraulic and electrical rules.
4. This is a new concept in van unloading system