

ABSTRACT BOOK

INDIAN SCIENCE & ENGINEERING FAIR (INSEF)
MICROFAIR – RAJKOT

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

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Project Code: Bh Sc-01 (Team)

Online ID:100

Title: To check the effect of holistic music on reading concentration

Subject Category: Behavioural Science

Name: Rahul Chauhan & Yagnik Satasiya, Std: 10th

Guide: HITESH BHUNDIYA

School: Shree Swaminarayan Gurukul Vidyalay, Rajkot

ABSTRACT:

We want to check the effect of holistic music on the reading concentration of the students for that first we have choose the 50 student having same reading ability(with one reading test). Then divide them in to two parts. We provide them two different atmosphere 1 silent ,2 holistic atmosphere and then gave them 5 unknown Sanskrit sloke after half an hour we gave them a blank paper to write the sloke. And than check it.

Project Code: Bh Sc-02 (Team)

Online ID:175

Title: Effect of Music on Study/Learning

Subject Category: Behavioural Science

Name: Vikash Gajera & Krishna Uneaviya, Std: 9th

Guide: Prakash Vacchani

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

Music gives immense pleasure to the life. Each person likes music. Music is helpful to the person to reduce his stress and give relaxation to the mind. People can work more efficiently while listening the music.

So we thought to check the effect of different music on the study and learning. We have done our experiment on students of std 8th C having 40 students. Three groups named group-A, group-B and group-C were formed and were exposed to all three kind of music. Students were listened three different music. i.e. a song, its instrumental version and a soft music. During this time, they had to read sanskrit shlokas from std 9th for 5 minutes. Then they had to write the content whatever they read for five minute Based on this data, we have calculated the average percentage efficiency of reading. The results are shown in observation table attached with the synopsis.

It is shown that the instrumental version and soft music are having more positive effect than the song on reading. It is also observed that soft music is showing consistent positive effect. So we may conclude that soft music is more beneficial for an average student.

Observation table showing percentage efficiency for effect of different music on learning:

Type of music	Group A	Group B	Group C
Song	21.81	19.09	9.09
Instrumental version	19.09	38.18	24.54
Soft music	26.36	24.54	20

Title: Production of natural insecticide from vegetable wastes

Subject Category: Biology

Name: Parth Parekh & Deep Patadiya, Std: 8th

Guide: proyanka parekh

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

Insecticides are having harmful and non biodegradable chemicals which persist in environment for very long period of time. The removal of such a chemical is challenging task.

That is why we tried to make an insecticide from a natural product. We used a spoiled onion (*Allium cepa*), chilli (*Capsicum alum*) and leaves of custard apple (*Annona reticulate*) in following proportion to make insecticide.

- Spoiled onion : 80 g
- Chilli : 20 g
- Custard apple leaves : 20 g
- Water : 20 g

Above materials were mixed in given proportion and mixed thoroughly. The mixture was then boiled till the half of the water evaporated. The remaining content can be used as an insecticide.

We have tried this insecticide on various insects like ants, black ants, and caterpillar. It was able to kill those insects.

If we use such insecticide in a routine life than we will able to cure the environmental problem up to some extent as these materials are nature origin and biodegradable.

Title: Comparative Study of Hydrogen Peroxide and Algae on Seed germination

Subject Category: Biology

Name: Nishi Dhameliya & Shivani Sorathiya, Std:

Guide: Salil Upadhyay

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

In a country like India whose economy is greatly dependent on agriculture there should be a high yield and good productivity of crops. To decrease the time of germination, farmers use chemical fertilizers. Extensive use of such fertilizers can cause harm to the environment and decrease the fertility of land.

For that here we are checking the effect of H₂O₂ and algae on seed germination. Seeds of Vigna radiata (mung), Ara-chis hypogeal (groundnut) and Triticum aestivum (wheat) were taken for experiment. 20 seeds of each were treated for 15 min with H₂O₂ (2 M, 6 % w/v, LR grade H₂O₂) and algae (algae and water were homogenized in a mixture). This homogenized mixture was used for experiment.

Then the seeds were removed and sawed in a dish containing cotton to observe the proper germination. 20 seeds of each were kept untreated (soaked in water) as a control. Each dish was kept in same light and same water was sprinkled on them. They were observed for number of seeds germinated and the results were recorded. The results are shown in a table enclosed behind.

It is observed that H₂O₂ is more effective for Arachis hypogeal and an algae is more effective for Triticum aestivum and Vigna radiata. Observation Table:

Observation on 2nd August 2012

		4:00	6:00	8:00		
FOR MUNG	CONTROL	15	19	20		
	H ₂ O ₂	18	19	20		
	ALGAE	20	20	20		
FOR GROUNDNUT	CONTROL	15	17	20		
	H ₂ O ₂	18	19	20		
	ALGAE	16	18	20		
FOR WHEAT	CONTROL	0	0	0		
	H ₂ O ₂	0	0	0		
	ALGAE	0	0	0		

Observation Table:

Observation on 2nd August 2012 showing percentage efficiency

		4:00	6:00	8:00		
FOR MUNG	CONTROL	75	95	100		
	H ₂ O ₂	90	95	100		

	ALGAE	100	100	100	
FOR GROUNDNUT	CONTROL	75	85	100	
	H2O2 90	95	100		
	ALGAE	80	90	100	
FOR WHEAT	CONTROL	0	0	0	
	H2O2 0	0	0		
	ALGAE	0	0	0	

Project Code: Bio-03 (Team)

Online ID:125

Title: To prepare natural pesticide which work as fly repellent.

Subject Category: Biology

Name: Jinesh Dixit & Karan Dudani, Std:

Guide: Jay Shukla

School: MATUSHREEDL.G.DHOLAKIYA SCHOOL, Rajkot

ABSTRACT:

As we all know at present human kind is fighting ageist many threatening disease and health problem. there are many contagious disease which caused by food and water such as cholera,typhoid and many more. Flies are acting as key spreading agents of such infective disease. So to prevent such disease we have prepared a natural pesticide with the help of mixture of basil leaves,leaves of vicks basil and then mixed it with a eucalyptus oil. We have extract juices from basil leaves,vicks basil leaves and mixed it with mixture than add eucalyptus oil. Than filtered it with cotton filter.We had use it in vaporizer and sry to remove insects and found that it can respell the flies easily and effectively

Title: WEATHER INDICATION FLOWER

Subject Category: Chemistry

Name: DHARMIK CHAUHAN & JAY KHOKHRA, Std: 7th

Guide: RIDDHI RANPARA

School: SHREE G.K.DHOLAKIYA PRIMARY SCHOOL, Rajkot

ABSTRACT:

The project is based on indicating of weather by using an artificial flower. the flower made from blotting paper , when dipped in the solution of cobalt chloride undergoes a colour change, depending on the weather conditions.

Only the chemical cobalt chloride has property on absorb humidity present in air. thus the following colour changes would be indicated by the flower.

- 1) blotting paper turns pink → stormy weather
- 2) blotting paper turns bluish pink → rainy weather
- 3) blotting paper turns light blue → dry weather

For creating the above mentioned three conditions artificially, we prepared 3 artificial chambers and allotted a small fan, wet jute bag or wet cloth and dry ice respectively in the above mentioned 3 chambers.

Thus by the chemical reaction between cobalt chloride solution and atmospheric conditions, the weather can be indicated.

The observation will be made by reacting the different molar solutions with the blotting paper and the above mentioned colour changes would be taken into consideration.

Title: The specific design for solar drying

Subject Category: Energy

Name: MEET MEVA, Std: 8th

Guide: ALPA BEN

School: MATUSHREEDL.G.DHOLAKIYA SCHOOL, Rajkot

ABSTRACT:

During one workshop we prepared different 3D structure from valve tube and match stick such as cube, tetrahedron, pyramid and diamond shape (six pyramid fixed on six phases of cube). From these shapes we have idea to prepare solar concentration unit by fixing mirrors as reflectors. We find the diamond shapes very interesting so we remove one pyramid from bottom and prepared a unit with five pyramid as shown in photograph.

In these unit the pyramid sides facing sky are transparent and sides facing ground are mirrors. We packed whole unit and filled it with smoke. Now when we incident laser beam from upper transparent sides of pyramid we find that beam reflected from bottom mirrors and moved in the units but do not comes out. These observation gives as idea that sunrise incident in this unit have no chance to come out which gives better solar concentration for a long period of time 9 am to 4pm in one position.

Now our solar concentration unit is ready. Than wet & dry samples of wheat, mung, gram and bean was taken in same amount and put in the unit for drying. We observed that within one hour.

(9 am to 10 am) the samples became almost dried. This observation shows that the solar concentration in morning and afternoon

Project Code: Energy-02 (Team)

Online ID:126

Title: Modified Solar cooker

Subject Category: Energy

Name: Nidhi Balasra & Mansi Mehta, Std:

Guide: Mitesh Trivedi

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

LPG is commonly used fuel for cooking. But it is a non-renewable and costly. It is more beneficial to utilize the nonconventional energy sources as they are renewable and cheaper. We have made a solar cooker which can produce enough heat to cook the food.

For that we took the aluminum box, plan mirror and glasses. The arrangement is shown in the figure provided with synopsis.

Further we will try to make solar drier also along with solar cooker.

Project Code: Energy-03

Online ID:174

Title: Harnessing the mechanical energy through the rotor gate

Subject Category: Energy

Name: Jaydeep Sojitra , Std: 9th

Guide: Salil Upadhyay

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

Energy crisis is one of the biggest problems which have to be solved. As the conventional energy sources are depleting day by day we have to increase our dependence on renewable energy sources. These non conventional sources are the excellent sources of energy if we can use them more efficiently. That is why we have made the system which uses the rotor gate placed at the public places. The gear system is connected to the base of a turbine which is placed at the bottom of the rotor gate. The arrangement is shown in figure enclosed behind.

The rotating gate will cause the rotation of turbine. When turbine completes a single turn the small wheels connected to it will complete many rotations which in turn is connected to the generator. It will produce electricity. This electricity can be utilized to fulfill the energy need of a garden.

Title: DISPOSIBLE THURMOS FROM PET BOTTLE

Subject Category: Engineering

Name: RAJVI VALA & NUPUR JOSHI , Std: 7th

Guide: DIKOSTABEN GHETIYA

School: SHREE G.K.DHOLAKIYA PRIMARY SCHOOL, Rajkot

ABSTRACT:

The main aim of our project is to use wastage disposable plastic bottle for making thermos useful in routine life.

For Making this model we have taken two consecutive size of plastic bottle of 1 liter & 0.5 liter. We cut the 1 liter bottle from middle in to two parts. From the upper part we remove the cap and upper neck.

We prepared such four units from four bottles.

Now we take four 0.5 liter bottle and wrapped different insulated material like thermocal, glass wool and plastic bag and one unwrapped (air) these four bottles were covered with two pieces of 1.5 liter bottles as shown in photograph and sealed with cello tape.

Then we took a normal 1 liter bottle and four samples of thermos were prepared by us. filled all these with hot water of same temperature and compared the decreasing temperature consecutively at the thermometer in side the cap of bottle, we also compared the increasing temperature consecutively at the interval of 15 minutes by putting the thermometer in side the cap of bottle as shown in photograph. We done same type of experiment in day light, sunlight and dark light and take observation.

After observing data we conclude that sample 4 (the thermos with the glass wool as an insulator) is the best in comparison of all the sample, as well as it works like a water bottle available in market.

Title: Amalgamation Washing Brush

Subject Category: Engineering

Name: Avinash Chauhan

Guide:

School: Shree P.V. Modi School, Rajkot

ABSTRACT:

Name of the project suggests that it has some uniqueness in it. It consists of brush, soap, & water which we need to wash the cloth normally in India. It has a handy shape just like a normal washing brush but its size is a little bit large. It has a part of ordinary brush. It has a sponge which consists of dried soap. The sponge can be easily made again by the thick solution of the washing soap. There is a switch which compresses the sponge. It consists of nozzles which release the soap-water solution. The nozzles can also be closed. By this we can say that it is a "Sasta Sunder Tikau" way of washing cloth. If we go to take a washing machine it is much costlier than this brush. A normal person can even buy this for less cost. This brush can be made in INDIAN RUPEE 120. This brush is time, water & labor saving. When we normally wash the cloth we first make the cloth wet then rub the soap on it and then clean the cloth by rubbing the ordinary brush. This all is very much time, water and labor consuming. Now to use it is simple. We just need to pour some water inside the washing brush. To use it we first pour water in it (at this stage nozzles are closed) then press the switch to let the dry soap mix with water and a soap water solution is prepared, then open the nozzles then again press the switch, then the solution is released on the cloth and then we can wash the cloth. It is very easy to use this brush.

Project Code: Engg-03

Online ID:114

Title: G.S.M. based flood alert system
Subject Category: Engineering
Name: AYUSH PANARA, Std: 9th
Guide: Charuben Goshwami
School: Shri G.K.Dholakiya school. Rajkot, Rajkot

ABSTRACT:

Many people live near the banks of river and they face a lot of problem due to flood and sometimes many causality also happens. So to save people this destruction I have made G.S.M based flood alert system. In this system I use rain fall measuring system, water level indicating system, transmitting and receiving system through G.S.M system and Alarm system. A rainfall measuring system has to be kept on the hilly areas and when certain amount of rainfall will occur, the water level indicating circuit activated and this circuit will further activate data transmitting system will send a message through G.S.M. On the other side this message will be received by the data receiving system through G.S.M. and this system will further activate transmitting circuit which will activate the Alarm system. By the siren from the Alarm system, the people residing near the bank of river will know that there is a flood coming near to them and they can move to safer place and save their life

Project Code: Engg-04 (Team)

Online ID:118

Title: MULTI TASKING LUGGAGE CARRIER
Subject Category: Engineering
Name: CHARMY JOBANPUTRA & Nifhi gaglani, Std:
Guide: Prakash Vacchani
School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

Tourists always prefer to carry their luggage in a most comfortable way. That is why the luggage trolley is used on a platform, but this trolley is mostly made up to metal which is very heavy to carry the luggage. So we have tried to make a luggage trolley through plastic, which is having less weight and can carry more load than metal trolley. Our luggage trolley can also be fold and put into the bag. So it can be easily moved during traveling. Materials used are plastic pipes, elbows, male – T, female – T, wheels. The size and the arrangement of all materials are shown in the figure. We have tried different load and compared it with metal trolley. The comparison of various parameters is shown in following table.

Title: Multitasking machine for separating Solid Waste

Subject Category: Engineering

Name: Ekta Patel & Prakruti Vaghani ,

Guide: Krishna Kabir

School: SHREE G.K.DHOLAKIYA PRIMARY SCHOOL, Rajkot

ABSTRACT:

My project name is Solid Waste Separator which means to separate different types of solid parts of waste such as from are non-metallic, lighter waste like husk.

Separation by this kind of solids can be utilized in a proper manner as they are recycled.

Now my project works on the principle that separation different types of solid is on the basis of specific gravity of material.

The apparatus' I have used is hopper, conveyer Belt, magnet, shaft with a handle and Table Fan. Firstly we have to power waste material in the hopper which is supported by a plastic stand than the solid waste material will start flowing from conveyer belt. Now the light material will fluidized by air flow which comes from Table fan whole main role is like flower. Next step is to remove them from one or ferrous impurities from waste material Magnet is there which attracts the Iron are and it can be reserved as metal. The mechanical Energy is supplied by the shaft with handle though which the converges left will move accordingly.

It is often said that grain quality can never improve after it is been harvested. So my project can be used in large scale food / grain industry in which different types of solid waste are removed & reused.

Title: SEED DIBBLER

Subject Category: Engineering

Name: Jeet Sanepara & Rushabh Mehta, Std:

Guide: vijyaben modhvadiya

School: SHREE G.K.DHOLAKIYA PRIMARY SCHOOL, Rajkot

ABSTRACT:

Since the beginning of our country, farms have been important to over world as they provide most of the food we eat. Many machines are there which are used for harvesting but it's my project name is seed dibbler means it's a kind of mechanism which pluses or sow the seeds directly into the soil. The material I have used are cotton seeds, a metal pipe, hopper, break wire with clamping crank, battery and pointed instrument .

Firstly hopper is on top which is supported by a metal pipe and at bottom of machine there is a pointer instrument which makes holes in the soil for sawing the seed. Between the metal pipe and a pointed pin I have connected a break wire whose ends is attached at a ground level. As I put a seed on the top, I have to apply the break so that the break wire will make a path for a seed for seed for sowing and as the seed is properly dib in the soil the battery connected with wire will make a beep sound which confirms that our work is done and we can move ahead.

My project is limited for small farm and the farmer who are older and have back pain.

Title: puncher resistive tyre

Subject Category: Engineering

Name: Shivam joshi & , Std:

Guide: DIKOSTABEN GHETIYA

School: SHREE G.K.DHOLAKIYA HIGH SCHOOL, Rajkot

ABSTRACT:

Aim:

To prevent puncture in Tyre and Tube.

Method :

When the Tyre is formulated, First of all a layer of metal Surrounding of tube to be fitted. Over this layer, additional layer of rubber is to be covered.

Benefits :

This Project has Three(3) distinct advantages.

- (1) Saves Time : The above mentioned Tyre prevents Tube from pan drives. Vehicle reaches in time for work. No time wastage at repairers.
- (2) Saves Money : The above mentioned tyre prevents damage to tube, vehicle reaches in time while transporting products like :- Fish, Chemical, food grains, Vegetables owners and users get fresh stocks since no decay
- (3) Halting as life sever : Above mentioned tyre enable all vehicles of Emergency to reach in Time e.g. Ambulance, Police, Fire bridge.

Conclusion :

Time and money saved over and above ensuring help and health of public.

Title: AUTOMATIC WATER LEVEL INDICATOR AND CONTROLLER.

Subject Category: Engineering

Name: MANAN SAVALIYA & SAVAN DALSANIYA, Std: 7th

Guide: Jay Shukla

School: MATUSHREEDL.G.DHOLAKIYA SCHOOL, Rajkot

ABSTRACT:

We have made water level indicator and controller systems based on electronic circuit. to indicate the water level the l.e.d.s are connected with the circuit at different water leve.to control the water level electric circuit is designed in which one lid of circuit is connected at upper level of tank and the other one with the floating material. this circuit has been designed such that it operates the switch of the water pump at maximum and minimum water level.

When the water is filled in the tank its level will raise with which the floating material will came up and when the water level reaches its maximum level both the lids of circuit get connected with each other and the circuit get closed which operate the switch and turn off the water pump. and when water level become low then also both the lids of the circuit get connected with other and again switch is operated which turn on the water pump and it starts filling the tank. with the rise in water level the floating material will also rise which operates the l.e.d.s connected with the circuit at different level of the water. main purpose of this project is to provide a cost effective solution to reduce the wastage of water that is going to drain when pump up in every house hold.

We have made water level indicator and controller systems based on electronic circuit. To indicate the water level the LEDs are connected with the circuit at different water level. To control the water level electric circuit is designed in which one lid of circuit is connected at upper level of tank and the other one with the floating material. This circuit has been designed such that it operates the switch of the water pump at maximum and minimum water level.

When the water is filled in the tank its level will raise with which the floating material will came up and when the water level reaches its maximum level both the lids of circuit get connected with each other and the circuit get closed which operate the switch and turn off the water pump. And when water level become low then also both the lids of the circuit get connected with each other and again switch is operated which turn on the water pump and it starts filling the tank. With the rise in water level the floating material will also raise which operates the LEDs connected with the circuit at different level of the water. Main purpose of this project is to provide a cost effective solution to reduce the wastage of the water that is going to drain every day when pump up in every house hold.

Project Code: Engg-09 (Team)

Online ID:173

Title: AUTOMATIC WOODEN CUTTERDEVICE

Subject Category: Engineering

Name: NIDHI LIMBASIYA & MONIKA CHAUDHARI, Std: 9th

Guide: ASHISH MAKADIYA

School: SHREE K.G.DHOLAKIYA SCHOOL, Rajkot

ABSTRACT:

We had prepared a device for wood cutting for that first we have take one wooden board, on this board one wheel is attached which can be rotated by handle. this wheel is attached with another small wheel with rubber belt and it will attached with crank-shaft and shaft will joined with cutter made up of steel. when we rotate the handle the first wheel is rotate and it will rotate another wheel whose rotation is ten time more than first wheel so it will rotate faster. and crank-shaft will move front and back in strate line and we can easily cut any thing with it without hard work. we can change the force and speed of the cutter by change the daydreamer of wheel.

Project Code: Engg-10

Online ID:157

Title: THREE STAGE F.M. TRANSMETER

Subject Category: Engineering

Name: YATRI UPADHYAY, Std: 9th

Guide: DIKOSTABEN GHETIYA

School: DIVINE HIGHSCHOOL, Rajkot

ABSTRACT:

I have prepare an electronic device which can work as F.M. transmeter. This F.M. Transmitter has 3 R.F. stage. A variable frequency VHF oscillator, a class c driver stage and class c final power amplifier. Power supply for this transmitter is 9 to 12 volts. 12 volts supply, it will deliver/watt R.F. power with 70 cm telescopic antenna, range of this transmitter 1 KM Range can be extended up 5 K.M. by using multi element yagi antenna having reflector, dipole, director elements. Suggested. Yagi antenna design is shown here. Frequency of transmitter can be set within 88 – 108 MHz F.M. band cast band by adjusting the first trimmer or spacing between oscillator coil turns. Adjust output trimmer for maximum range. Do not switch on transmit without connecting antenna R.F. power transistor requires heat sink. To power this transmitter use 9 volts nickel cadmium cell.

Title: Disposable Plastic Bottle with Glass

Subject Category: Environment

Name: VIRAJ BHUNDIYA , Std: 8th

Guide: HITESH BHUNDIYA

School: SHREE G.K.DHOLAKIYA PRIMARY SCHOOL, Rajkot

ABSTRACT:

A Plastic bottle, cutter, fevicol, and feviquick are used to make a disposable plastic bottle with glass.

First of all, a disposable plastic bottle is cut from the middle as shown in the 1st photograph then as shown in the 2nd photograph the cap of the bottle is stuck to the bottom side of the bottle.

Then stick the cap of 2nd bottle on the bottom of the half cut bottle. Then on closing the cap of the bottle as shown in the photograph, a disposable bottle with glass will be ready.

Today in the modern era, the use of disposable bottle is increasing especially the water bottles.

But it can be used only one time and children and the aged find it difficult to drink water directly from the bottle, so with the help of this type of bottle, more than one person can drink water simultaneously and with ease.

Title: Bio-de-gradable packing material

Subject Category: Environment

Name: AYUSH PANARA & , Std: 9th

Guide: Milan J.Panara

School: Shri G.K.Dholakiya school. Rajkot, Rajkot

ABSTRACT:

The world has undergone profound dilemma due to the shrinkage of natural resources and enormous production of poisonous and green house gases. Many of the countries have banned therefore non-bio-degradable material and have promoted manufacture and consumption of Bio-de-gradable material in the entire feasible criterion. To facilitate and nurture “mother nature” and shield human beings as well as other creatures from global warming and drastic effects of green house gases, I invented a Bio-de-gradable material. It can be suitably used as packing material, Shock absorber, Temperature controller. As opposed to hazardous non-bio-de-gradable material, it is made of starch, latex and diminutive polystyrene. The world is in need to replace Bio-de-gradable packing material in place of hazardous packing materials like thermocol and plastic. Bio-de-gradable material can be degraded as per requirement and is supportive to decline pollution and global warming. We can render great service to mother earth by using Bio-de-gradable material.

Title: NATURAL PRESERVATION METHOD FOR GRAIN

Subject Category: Environment

Name: RAJVI VALA & Ayushi Saradava , Std:

Guide: Bhumikaben

School: SHREE G.K.DHOLAKIYA PRIMARY SCHOOL, Rajkot

ABSTRACT:

As we all know that grains are produced on a seasonal basis. In my places there is only one harvest a year. Thus most production of grains such as maize, wheat, rice ,millet etc. must held in storage for periods varying form a few days up to more than a year, storage therefore plays a important role in grain supply chain. One of the reason for losses of grain depends upon the interaction between the grain and the storage environment and variety of organisms. In large scale industry of grains nowadays we are usual to hear the news of grain damages in go down because of not taken proper care, not used day preservative for storage and mostly contamination of moulds because of temperature level of grain and availability of water and oxygen. Thus interaction between moisture and temperature is important for storage of grains for a long time. e.g. maize can be stored for one year at a moister level of 15 percent and temp. of 150C.

Thus I have prepare a home-made method for preservative of grain for a long time without using castor oil or any other harmful chemical. My project is solely depends on CO₂ produced by candle or 'Diya'(ghee or oil).

First of all we have used grains which are cleaned properly than container or a glass container after that enlighten the candle and then closed the lid .

The process going inside the container will be stop as production of CO₂ is sufficient as per the requirement. Now we can conclude that the CO₂ produced will make a large on top surfaces of grain and thus by use of CO₂ the grain are preserved for a long time.

To prove this method effective we have done experiment using an apple.

Firstly we have taken an apple than cut it in to two pieces, One piece is placed in glass jar with a enlighten candle and another is Kept open in contact with atmosphere. After few time (One or two hours)we had seen that the half piece of apple which is outside becomes dark. and the apple which is inside the glass is still in the original condition.

So I conclude that this method is useful to preserve the grains for long time.

Title: Air Cooled Eco-Friendly Mud House

Subject Category: Environment

Name: dhvani fichadiya & vidhi parekh, Std:

Guide: jadeja vaishaleeben

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

In ancient time people made their home from mud and Soil. This mud house can maintain the temperature. So it will be helpful in conservation of electricity. It is also cost effective as the raw material is easily available without any cost. And this is of nature origin and not using any chemical.

We have mixed mud and water and made a paste. Then a wall of house is made with this paste. Then after the soil, dung and wheat grass were mixed and soaked in water for a week. Then this mixture was coated on the wall. It will help to increase the strength.

All components were taken in following proportion:

- Soil = 2.5 kg
- Water = 2 L
- Dung = 25 g
- Wheat = 20 g

Observation Table:

We have measured temperature in refrigerator and at room temperature (During day and night time) thrice. The results observed are shown in following table:

	Within Mud House	Out Side The Mud House
In Refrigerator	14 oC	8 o C
	11 o C	11 o C
	7 o C	7 o C

At Room Temperature (During Day Time)

At Room Temperature (During Night)	19 o C	27 o C
	22 o C	22 o C
	24 o C	27 o C

Title: Effect of different colored light on growth of plant

Subject Category: Environment

Name: UNNATI

KAKKAD

&

vidhisha anadakat, Std:

Guide: tolia nikita s.

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

Plants are the basic life on earth which can produce the food for themselves and for rest of the animals. As they can do photosynthesis by using sunlight, the intensity of light can affect the growth of plants.

So, we thought to check the effect of different colored light on the growth of plant. For that we have made different colored boxes with gelatin paper and sowed a seeds of Vigna radiate (mung). All pots were kept in a different colored box. All the pots were provided with equal water and sunlight. Growths of plants were observed at every 24 hours. Observation table and graph are enclosed with the synopsis.

It is shown that red color gives maximum growth.

Observation Table:

Date/Time	Control	Blue	Green	Orange	Red
5:00p.m.3/8/2012					
No of leaves	0	0	0	0	3
Height (cm)	0	0	0	1.5	2
5:00p.m.4/8/2012					
No of leaves	5	0	3	5	7
Height (cm)	2	1.5	2	2	3
5:00p.m.5/8/2012					
No of leaves	11	7	7	10	15
Height (cm)	3.5	2.5	3	4	5.5

Observation Table:

Date/Time	Control	Blue	Green	Orange	Red
5:00 15/08/2012					
No of leaves	15	10	11	13	13
Height(cm)	2	2	2	3	3.5
5:00 16/08/2012					
No of leaves	20	16	16	19	21
Height(cm)	3.5	2.5	3	4	4.7
5:00 17/8/2012					
No of leaves	24	21	20	26	26
Height(cm)	6	4.8	5.5	6.5	7
5:00 18/8/2012					
No of leaves	29	23	26	30	32
Height(cm)	7.5	6	7	8	8.5

Title: Eco-friendly plastic material

Subject Category: Environment

Name: kausha kotak & dhara hapaliya, Std:

Guide: dhara gandhi

School: SHREE G.K.DHOLAKIYA HIGH SCHOOL, Rajkot

ABSTRACT:

To prepare plastic material first of all we have Take 15 plastic Bottles & loam soil.

Firstly take plastic Bottles and start melting them at high temperature on gas stove.

Then we will get liquid material of plastic Bottles, add powder form of loam soil 4 table spoon.

After that add 3 table spoon cement to make it more durable and long lasting.

Heat this solution for 20 Min. Then take this solution in any steel or metal plate whatever shape we want.

It will be dried up in 5 Min.

Conclusion :

We can make a hard, strong, durable & long-lasting thing from a wastage plastic Bottles.

Project Code: Env-07 (Team)

Online ID:130

Title: Technique for cultivation in drought area

Subject Category: Environment

Name: mohit patadiya & malay chavda, Std:

Guide: hetalben adhiya

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

India is an agricultural country. But the yield of crops is greatly dependent on monsoon. Some part of the country is having drought weather. These parts are suffering from scarcity of water. We have to think for some techniques which can be helpful to the farmers living in such area.

Therefore we made a model which shows a technique which can help farmers to cultivate in drought area with the help of sea water.

For this a farm is covered with transparent glass material through which light can penetrate. The hot and moist air passes through the filter placed in front of sea. It becomes cool and provides moisture to the growing crops. As the moisture cools down it will condense and be converted into water droplets which can be collected and used for irrigation or as a source of fresh water. Through this technique the temperature inside the greenhouse can be maintained about 30 degrees when the outside temperature is about 45 degrees.

This technique can be helpful to get a high yield of crops in a drought area with monsoon irregularities. The hypothetical model is prepared.

Project Code: Env-08

Online ID:156

Title: ELECTRONIC MORDEN HYDROPONIC

Subject Category: Environment

Name: BRIJESH VEKARIYA & , Std: 9th

Guide: DIKOSTABEN GHETIYA

School: DIVINE HIGH SCHOOL, Rajkot

ABSTRACT:

To prepare hydroponic culture more effectively and efficiently we have prepared a small model of it. First I have taken one p.v.c. pipe and made holes at a particular distance of 30cm, now grow the plant in that pipe. Then joined all pipes to each other so that we can provide water at a time by one common supply. Then arrange one l.e.d. near each plant and connect it with 9v dc battery in parallel connection. Now arrange both the lids over each l.e.d. just near the plant root area. Now if we can see that if the plant gets water supply then l.e.d. will glow and if it does not get water then l.e.d. will not glow. This way we can know that the plant will get water or not.

Project Code: Env-09 (Jr)

Online ID:158

Title: a model of de-moistured house

Subject Category: Environment

Name: Dhvani Patni , Std: 7th

Guide: NEELA BEN

School: SHREE K.G.DHOLAKIYA SCHOOL, Rajkot

ABSTRACT:

I had prepared a model of DE-moisture house for that first of all we have prepared a model of house and than arrange a solar plate(not solar panel) on the roof of it ant than attached two tube with it (one for input and another for output),then after we have arrange a exhaust fan at the one end of tube to exhaust the air of room and goes in to the solar plate so that the air of solar plate will come out in the room this way we got the hot air in the room and make our house DE-moisturized.

Project Code: Maths-01 (Team)

Online ID:131

Title: A model to measure a distance of an object at distance

Subject Category: Maths

Name: Janil Barbhaya & Kaushal Ambasana, Std:

Guide: Parmar Jasmin s.

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

It is an instrument through which we can measure the distance of an object lies at distance. It applies the basic principle of geometry. Take a ruler fix a pin which can be moved along the ruler. Now arrange this modal in such a way that by seeing an object separetally with left and right eye the pin matches with the left and right edge of an object respectively. Refer the following the figure.

Title: Simple model to measure the radius of circular/cylindrical object

Subject Category: Maths

Name: Vidisha Dholakiya & palak lathiya, Std:

Guide: Prinka Parekh

School: Late Shree S.G.Dholakiya memo. school, Rajkot

ABSTRACT:

These are simple models to calculate the radius of any circular or cylindrical object. There are two modes.

1. Triangle model.

2. Square model.

1. Triangle model

Cut and isosceles triangle from a hardboard having size of 18x18x12 cm. make a scale on both the equal sides. The scale starts with zero and the figures written at each cm distant indicates the radius of an object. Now place the inverted triangle (base remains upper side) in the cylinder or ring. The figure where the edge of an object touches to the side of triangle indicates the diameter of an object. The figure written on the middle line indicates the radius of an object.

2. Square model:

Make a square with the help of two rulers and two hardboard strips which forms the sides of the square. Place a strip inside the square which connects two sides made with the rulers. This strip can be easily moved along the rulers.

Place an object in a such a way that one edge of the object touches to the side made from hardboard strip of a square which matches the ruler at 0 cm (it's start point). Fix an object by sliding the slider strip on the ruler. Record the figure shown on the ruler which directly indicates the diameter of an object. With the help of this diameter we can measure an area or volume of an object.

This model can be also be used for sphere or solid cylinder.

Title: Effect of magnetic field on flow of water

Subject Category: Physics

Name: Simran Undhad & Rajvi Dangar, Std:

Guide: Apksha Joshi

School: SHREE G.K.DHOLAKIYA HIGH SCHOOL, Rajkot

ABSTRACT:

We had often listen about effect on magnetic field on our body and living organism.

So we have trying to know the actual effect of magnetic field. We all know that there are 90% part of living organism is water. so that we had done on experiment on it. For that first of all we had take bu-rate, pipet, flask, flannel and magnetic bar and one stop watch. Than take 200ml water and filled it in burate than with help of clamp falldown it on flask and measure the time of falling, then same type of experiment could be done with magnetic field. These both experiment can be done many time.

Observation:

Water flows in lesser time in magnetic field as compared to without magnetic field. there fore magnetic field enhances speed of water flow in lesser time