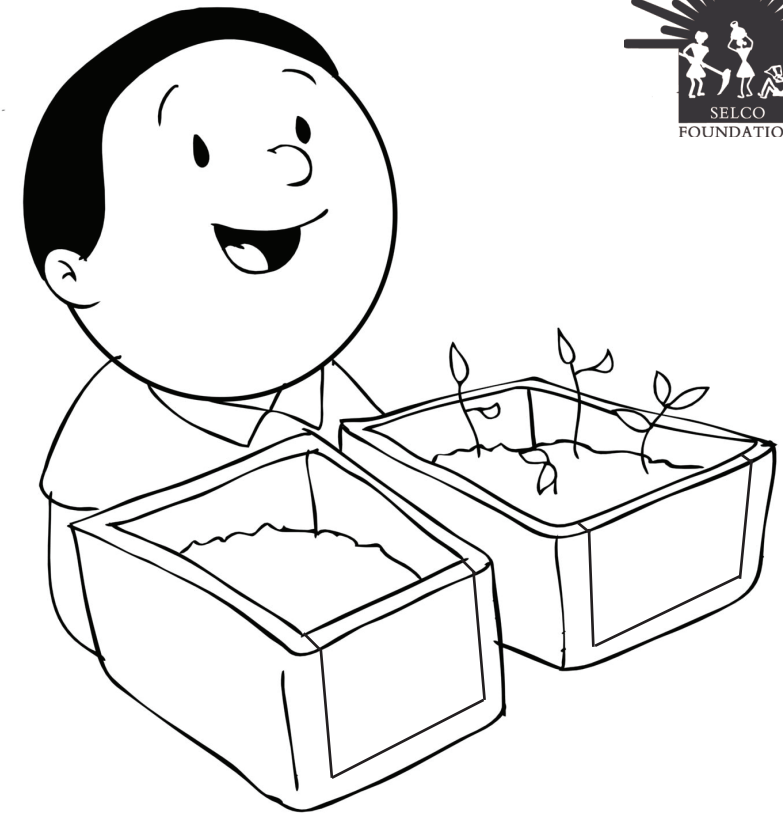
SELCO FOUNDATION



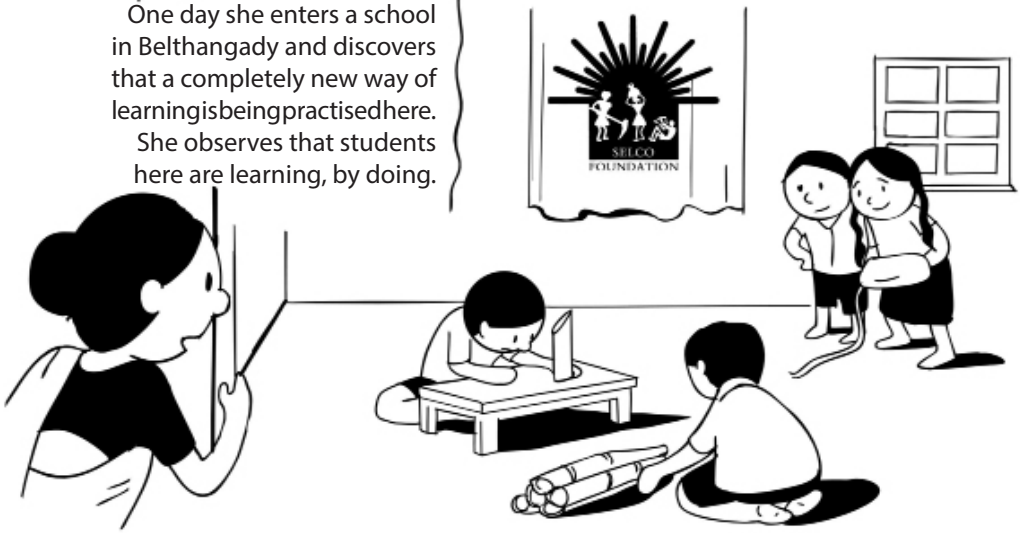
INNOVATION BOOK

Illustrations: Abraham Jacob
Stories and storyboarding: Yashna Jhamb

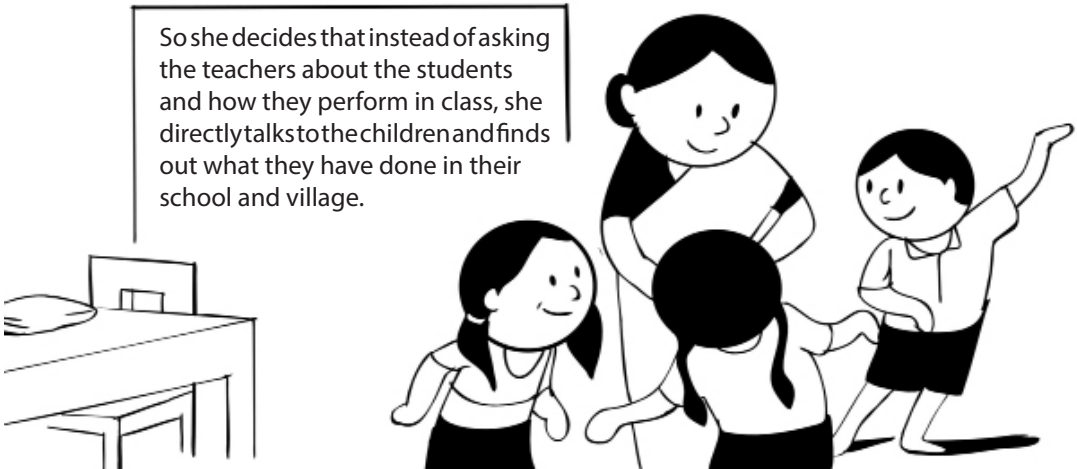
An education reporter visits schools in Karnataka to evaluate and write about various learning styles followed by the institutions.

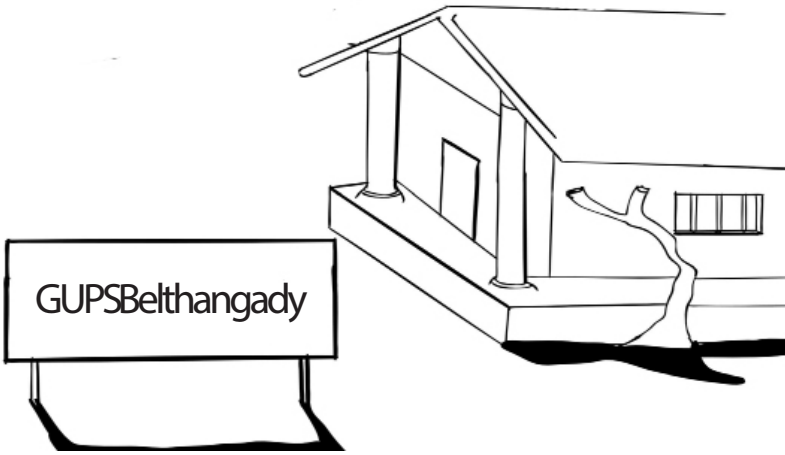
She visits many schools and notices that in almost all of them, a common methodology and trend is followed with respect to the process of imparting education.

One day she enters a school in Belthangady and discovers that a completely new way of learning is being practised here. She observes that students here are learning, by doing.



So she decides that instead of asking the teachers about the students and how they perform in class, she directly talks to the children and finds out what they have done in their school and village.





And the children start presenting..

Ma'am, we made an archimedes screw pump to pump water without electricity

Project done by Ajith and Samshudden

Electricity is a big concern in our village and it is not possible to use a electrical pump to water the farms

Both of us really wanted to do something about this

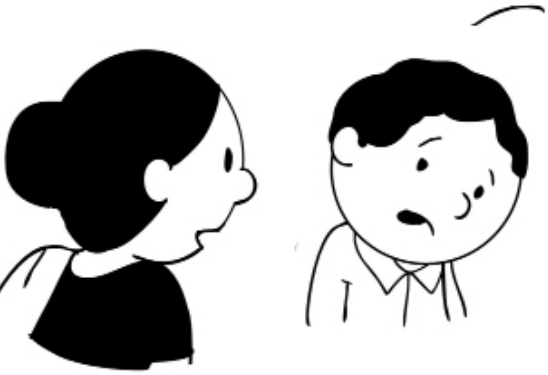
One day our history teacher was teaching us about how people used to manage in the past.

That's when it struck me to use an archimedes screw and I discussed it with Ajith. He agreed and we started building the prototype

He agreed and we started building the prototype

The screw is used predominately for transferring water to irrigation systems and for draining water out of mines or other areas of low-lying water.

A Project done by Sharath



Farmers in my village spends a lot of time in maintaining the farms. Spraying insecticide is one of the monotonous jobs and takes a lot of time.

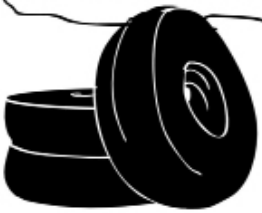
Normally insecticide sprayers have only one nozzle. So I thought, instead of 1 if I make 4 nozzles.

A boom spray, used to spray the insecticides and disinfect the farms faster.

A Project done by Sinan and Praveena

We had a class on reusing waste and there we asked to explore different wastes.

We chose tyres and thought of making outdoor seats with it.So we took 3 tires



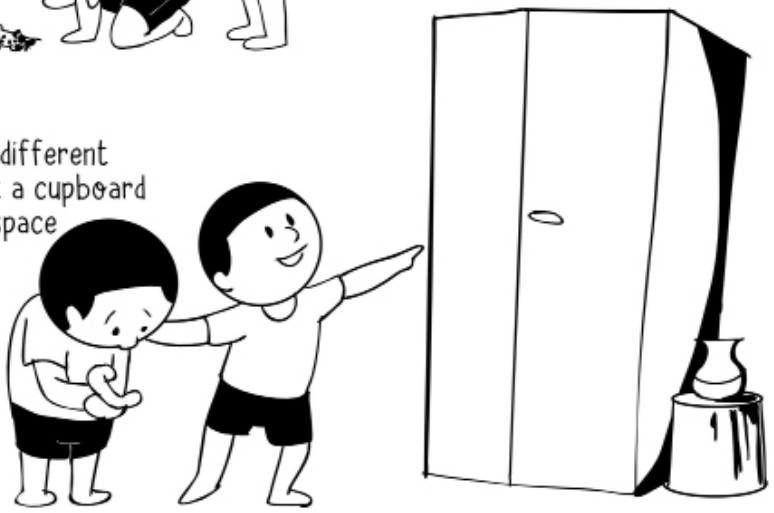
Tied it with a rope

Arranged for some waste fabric. Made a seat roll and filled the tyres.

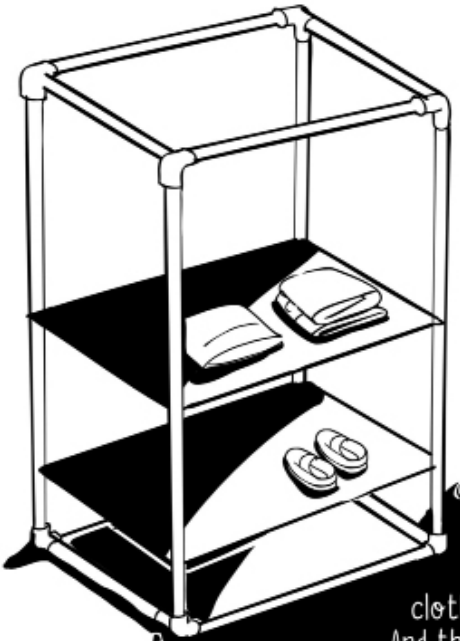
An out door seat with tyres

Project done by Darshan and Girish

We discussed many different things. And thought a cupboard takes up so much space and is very costly. if we make a rack with PVC it'll be so convenient for our mothers



We made some sketches and started making prototypes



We first made a clothes hanging rack And then added a shelf underneath And then added a shelf underneath to put shoes on it

Boom Spray

Archimedes Screw

Clothes Shelf

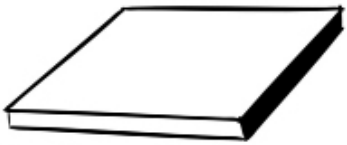
Tyre Seat

A Project done by Sindhushri

I wanted to do something for the new generation. Something that was not expensive and was still innovative.

There is a laptop-Van that goes around and people are free to use those laptops. It is really enjoyable.

But the van driver said that because of the heat the laptops are malfunctioning so they need cooling pads but those are expensive.



I took a wooden piece

Made a hole in it.

Took an old cpu fan

Fixed it to the board and attached a cord to it

A Project done by Akshay

So what have you made akshay?

I made a hybrid street light

I really liked our class on sustainable energy where we learnt about wind and solar energy

I also liked the lamps that are provided by SELCO foundation that work on Solar energy.

The lamps on the streets don't work most of the time as they are on grid supply

I made a hybrid energy model using wind and solar energy to solve the problem.

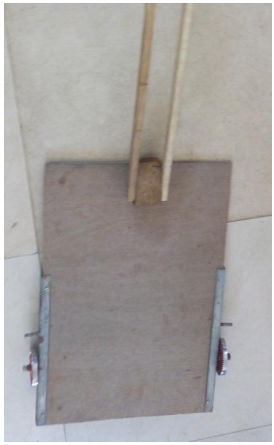
A Project done by Prajwal and Pratheek

A Project done by Vinod

Laptop Fan

Hybrid Street Light

Hybrid Street Light



Mid-day meal trolley

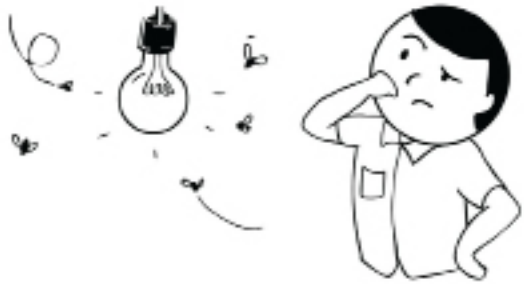
Life Jacket

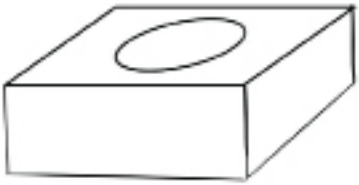
Mid-day meal trolley

Project done by Gautham

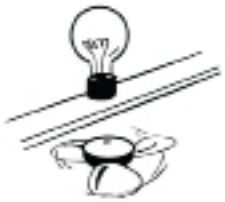
Our teacher had asked us a question in class – how can we reduce the number of mosquitoes or how could we overcome the problem of mosquitoes

That got me thinking and I had an idea of trapping the mosquitoes with the help of blue light, as they are attracted to it





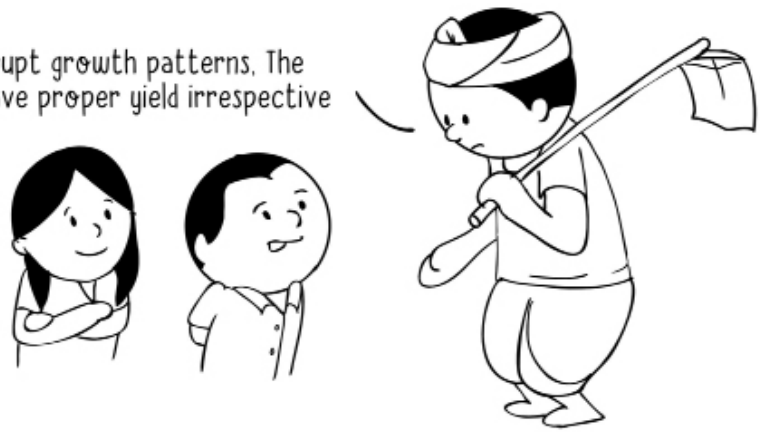
I took a box and made a hole in it

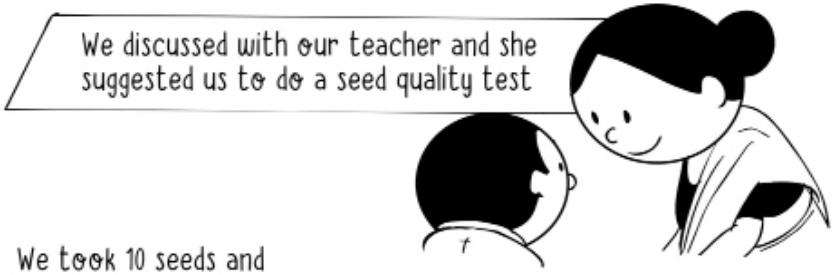


I then fixed a blue light and a fan inside the box

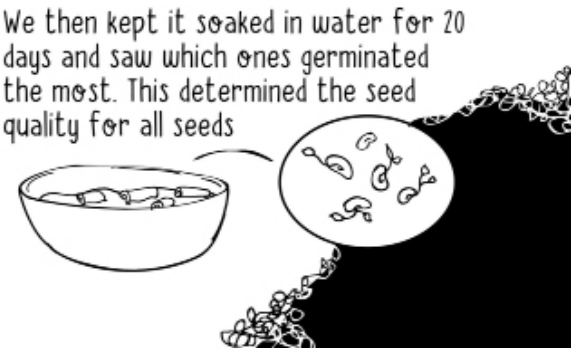
When the light is switched on the mosquitoes are attracted and sucked in by of the fan.


What have you done? i heard you did something for the village farmers?
That's right ma'am! in our agriculture class, we spoke to the farmers and they shared their problems


We have very abrupt growth patterns. The crop does not have proper yield irrespective of timely rain

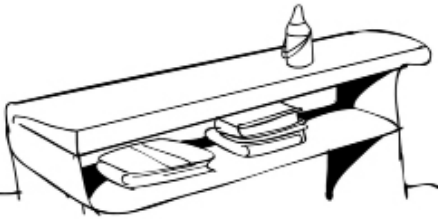

We discussed with our teacher and she suggested us to do a seed quality test


We took 10 seeds and wrapped it into a fabric


We then kept it soaked in water for 20 days and saw which ones germinated the most. This determined the seed quality for all seeds

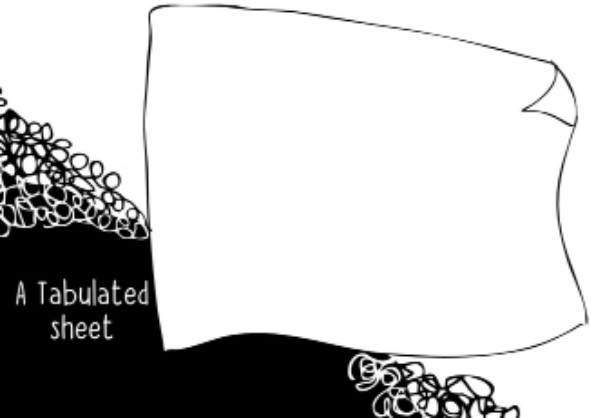
A Project done by Akash and Naufal

Our schools are really far from our homes and we come by foot. But our feet don't ache as much as our backs and shoulder. Our bags are really heavy



We tried leaving are books in the school desks but they were getting lost.

So we discussed and went to the headmistress and she understood our problem and asked us to sit with the teacher and come up with a system.



A Tabulated sheet

So we all discussed and came up with a timetable which allowed us to carry light bags and from 1200 pages of copies we came down to 355 pages

Mosquito trapper

Seedqualitytesting

Solutiontomakeschoolbagslighter

A Project done by Akshay Nireeksha varnashri nayana and varun

We then inverted the top part and stuck it with rods


So Lavanya, Show me what you've made?
Ma'am I've made an innovative gas stove.
Really? How?
Using waste water bottles and a tin!
I took 2 bottles and made 2 holes in it
And attached them with a pipe
I filled one with petrol and one with water and connected it to a tin
I made holes in the tin so that it acts like a burner

Some people came to our village to tell us about a water filter and the importance of clean water. But the cost of it was too high.

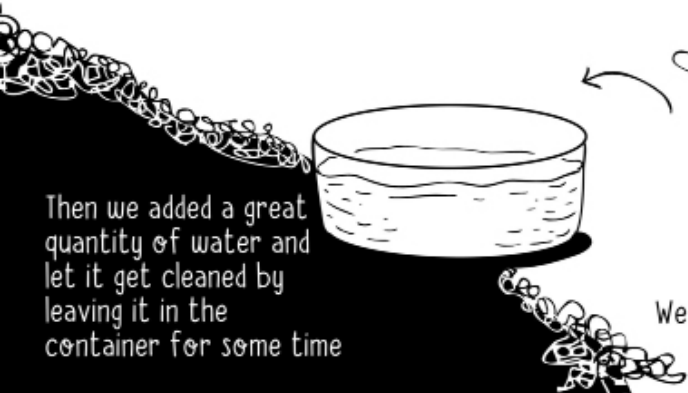
ma'am we know that water borne diseases are very dangerous. We read about Moringa seeds and it's properties and made a cheap water filter using it.

We took the moringa seeds

De-husked the seeds

Grinded it and mixed the powder with little water.

We then strained the paste

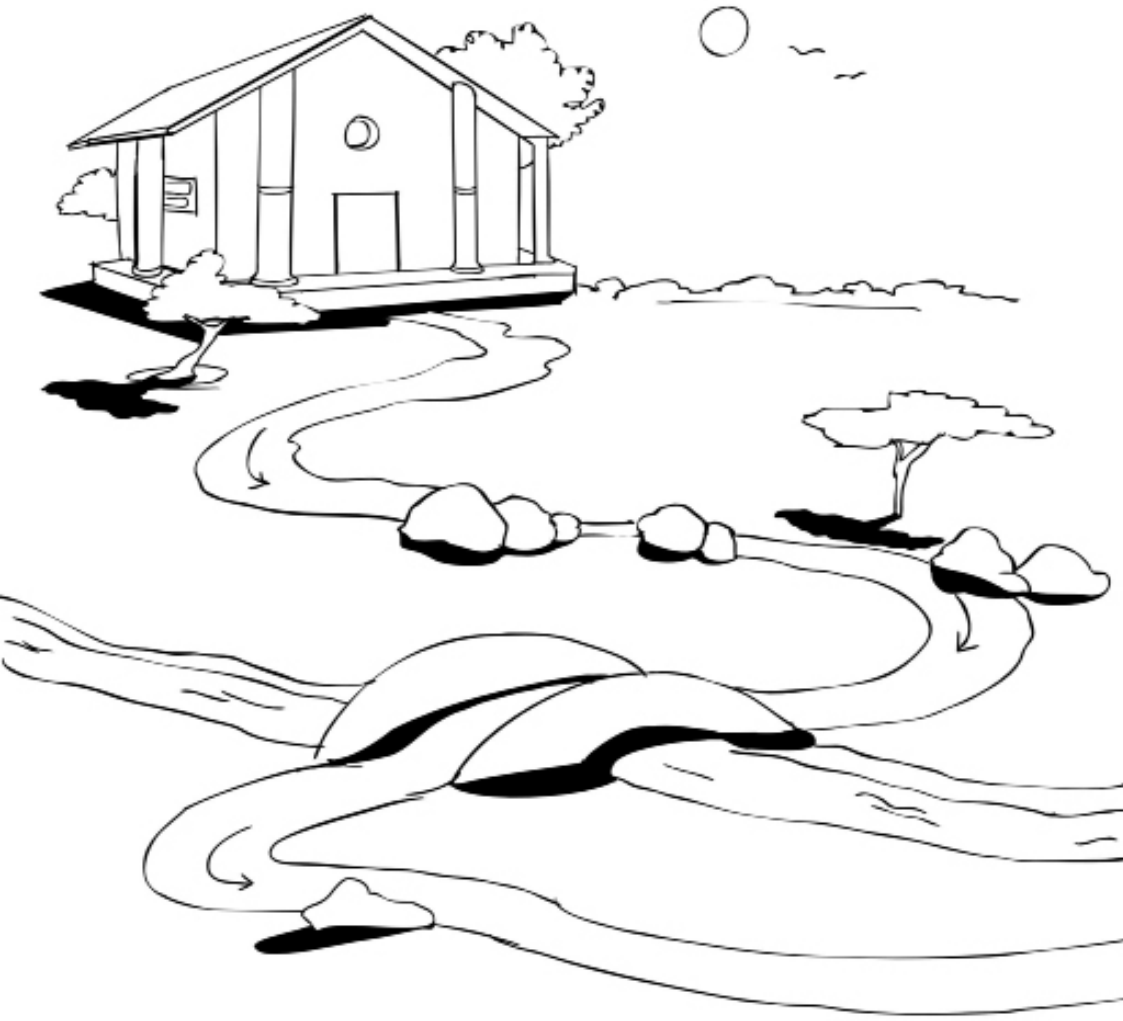


Then we added a great quantity of water and let it get cleaned by leaving it in the container for some time

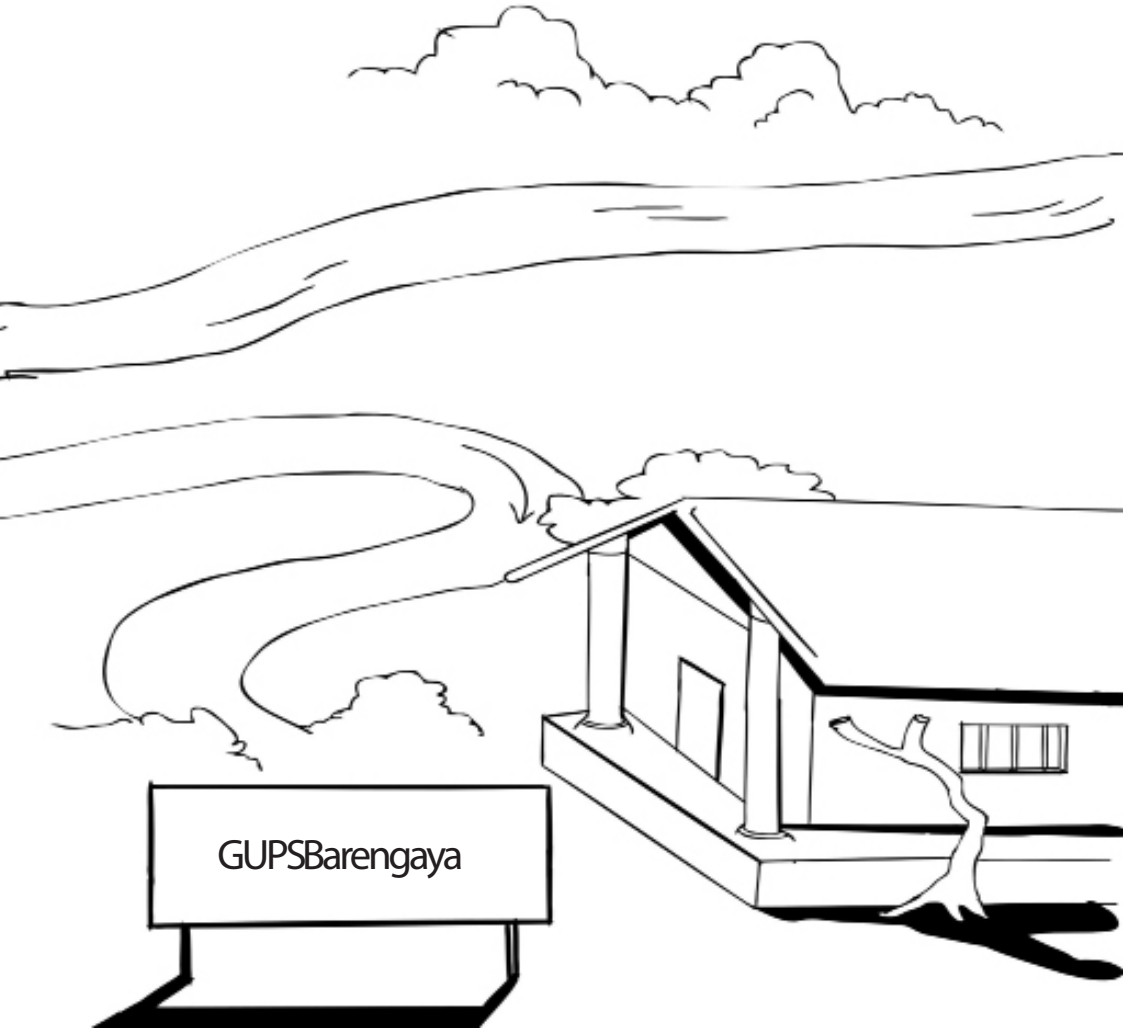
Jewelerystand

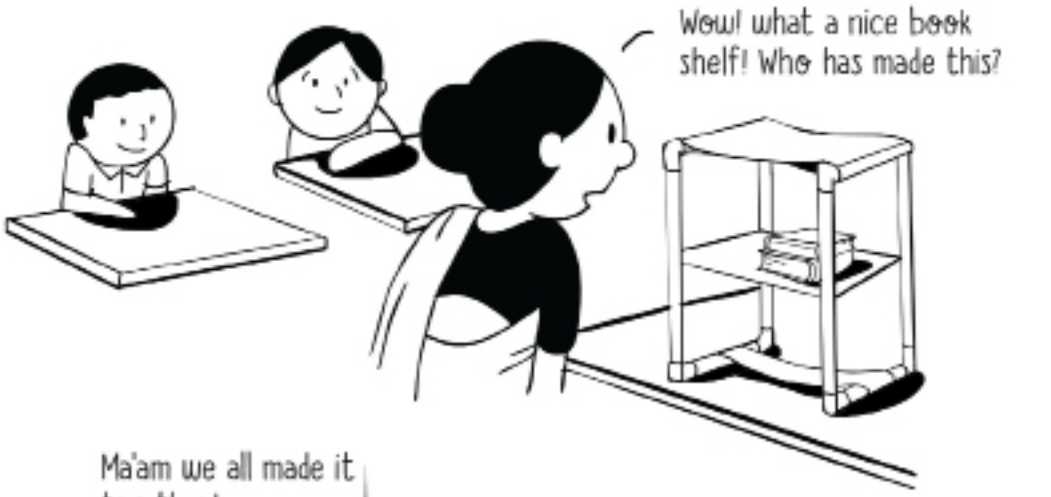
Innovative gas stove

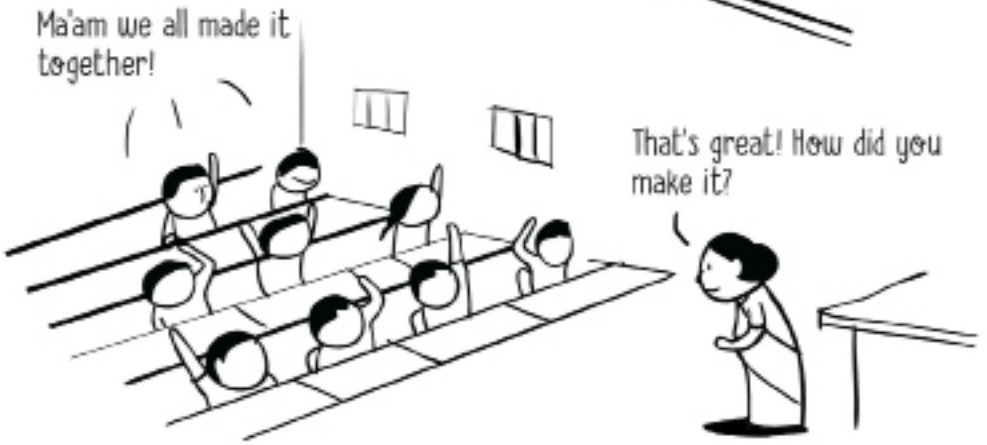
WaterFilterusingMorningaseeds

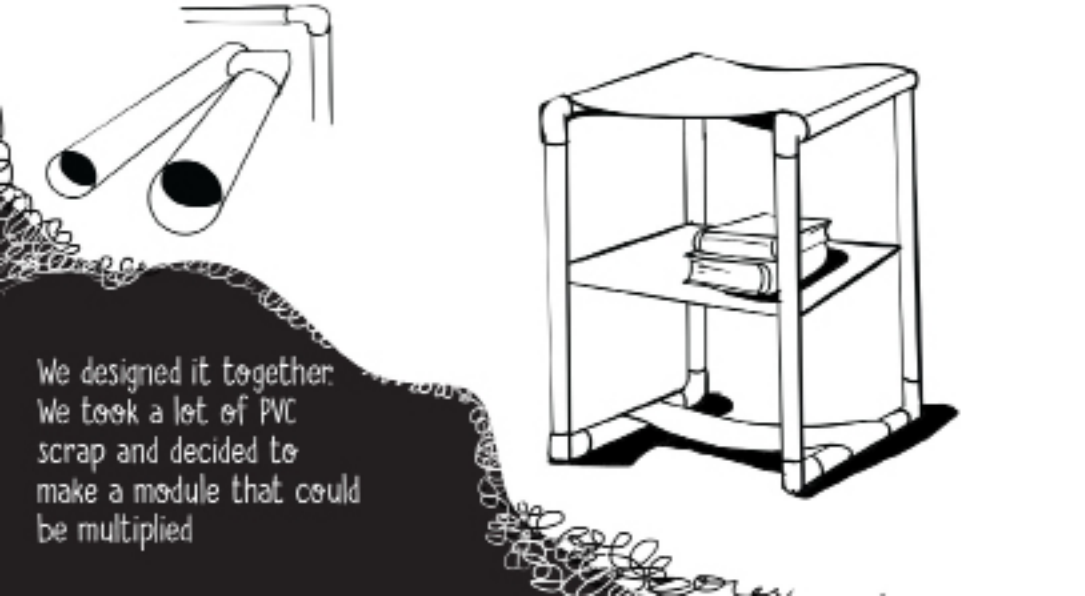


At Belthangady, she finds out about the different schools that are running the Invention Education Program and decides to visit all of them.




Wow! what a nice book shelf! Who has made this?


Ma'am we all made it together!
That's great! How did you make it?


We designed it together. We took a lot of PVC scrap and decided to make a module that could be multiplied

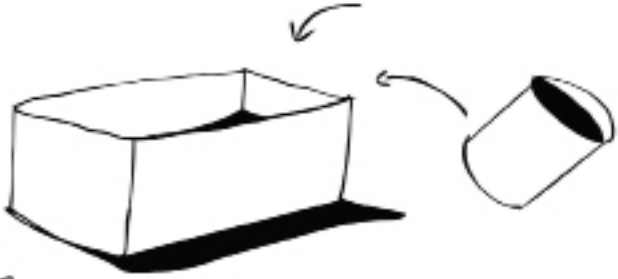

What problem did you address Vikas?
There are many areca trees around us
De-husking the areca nut is a big task
Our parents have to dehusk each of them and it is a very tedious
Areca nut
Pedal
pulling wire
So I made a Areca nut de-husking machine that works just by pushing the pedal

So Vikas, what have you made?

I made a hot box

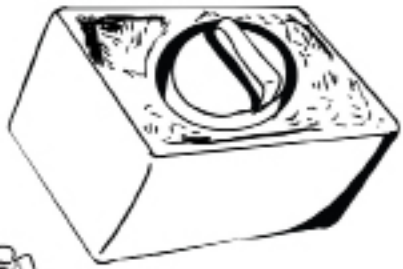
My father usually carries a tiffin when he goes out for work. But the food get's really cold by lunch time

Our teacher usually tells us to use sustainable materials to innovate. So I thought of many materials and chose hay.



I took a box and made a provison for the tiffin. I filled the rest of the box with hay. After that I covered the hay and box with cloth.

A material that allows heat to pass through it easily is called a thermal conductor. Hay is a bad conductor of heat and prevents the food to get cooled.



Book Shelf

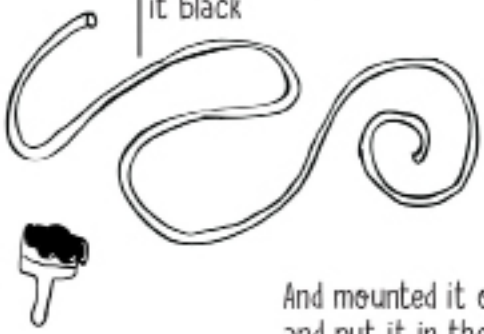
Areca de-husker

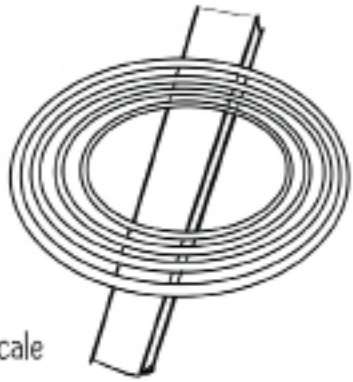
Hot box

Project done by Shri Ram Marathe

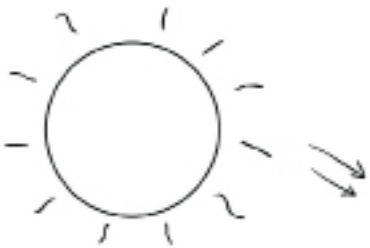
My aim was to make a water heater without electricity and I used solar energy as we get elecricity for a very short time in our village

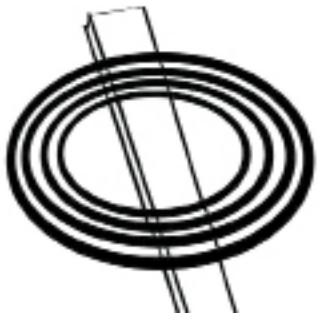
I took a long pipe and painted it black





And mounted it on a scale and put it in the sun



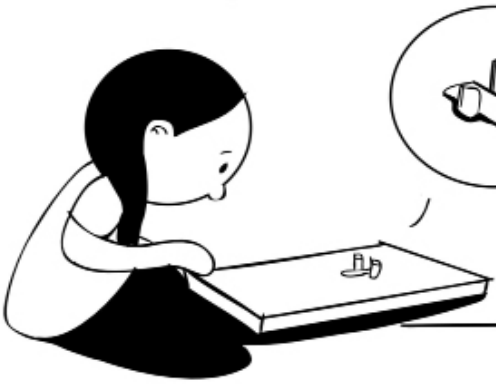


The water gets heated up by 10 degrees by using this set up

Project done by Sinchana

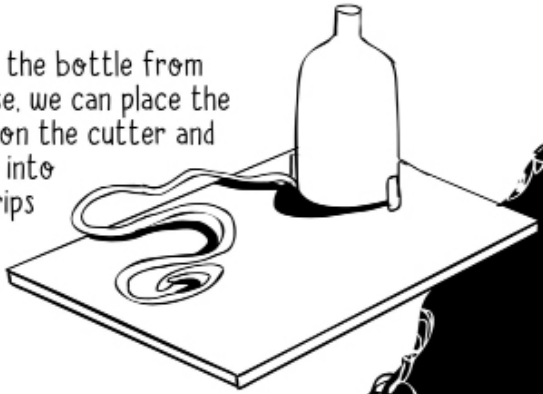
There is a lot of plastic waste around us

Using this waste, I thought of making plastic strips from the bottles



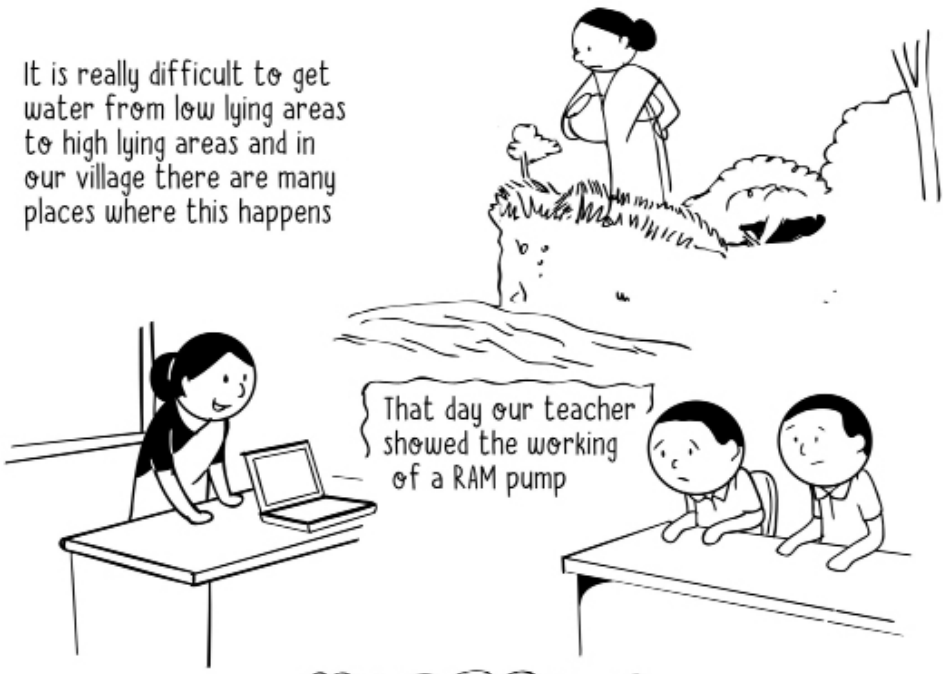
On a board, I mounted a cutter that can strip the bottle

cutting the bottle from the base, we can place the bottle on the cutter and make it into thin strips

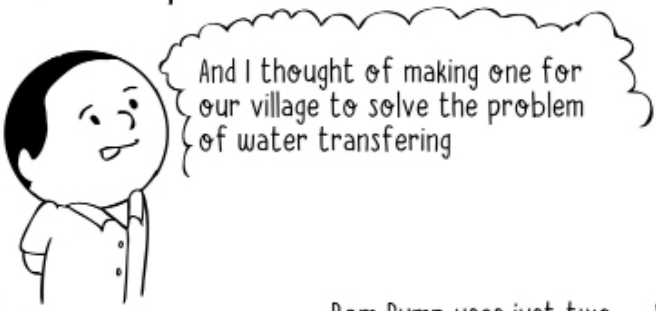


Project Done by Shri Ram Marathe

It is really difficult to get water from low lying areas to high lying areas and in our village there are many places where this happens

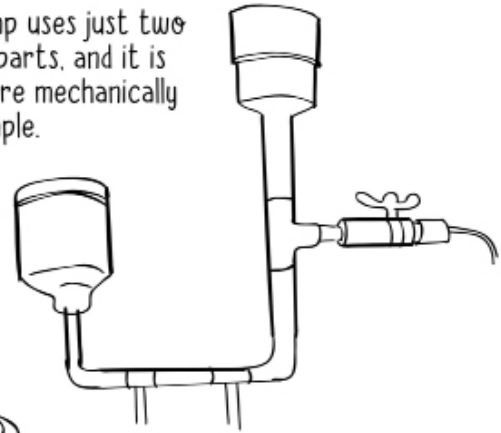


That day our teacher showed the working of a RAM pump



And I thought of making one for our village to solve the problem of water transfering

Ram Pump uses just two moving parts, and it is therefore mechanically very simple.

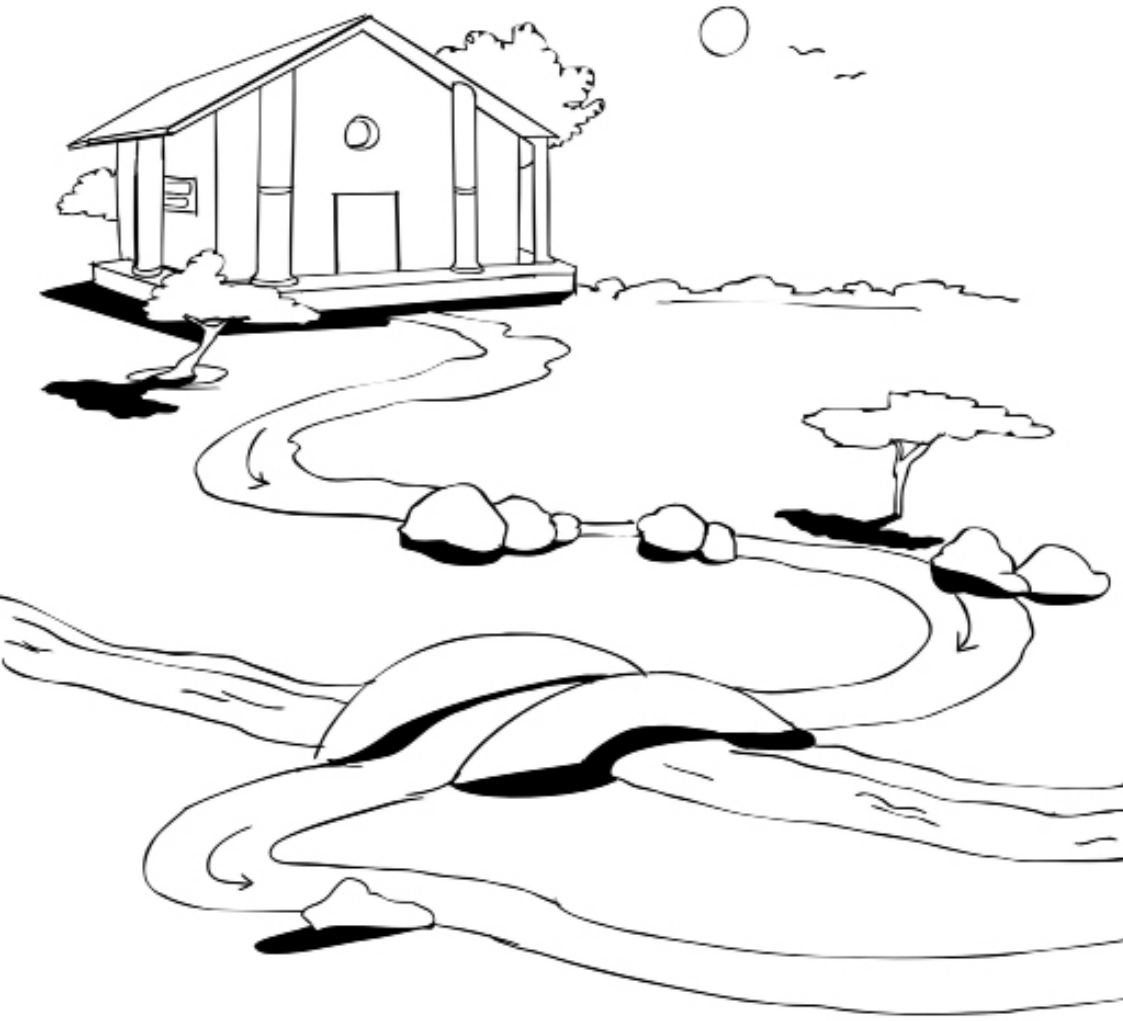


Ram Pump is a pumping device that is capable of pumping water higher than its original source without using electricity or any other power source.

Solar Water Heater

Plastic Bottle Rope

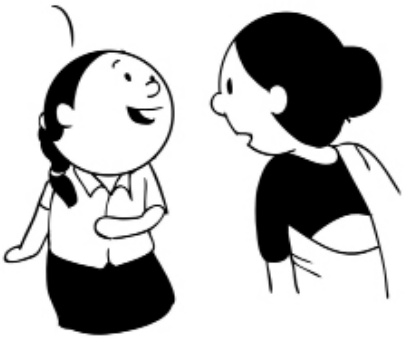
RAM pump




GUPSOdinala

Project done by Nikshitha

During rains our bags get wet even if we use an umbrella

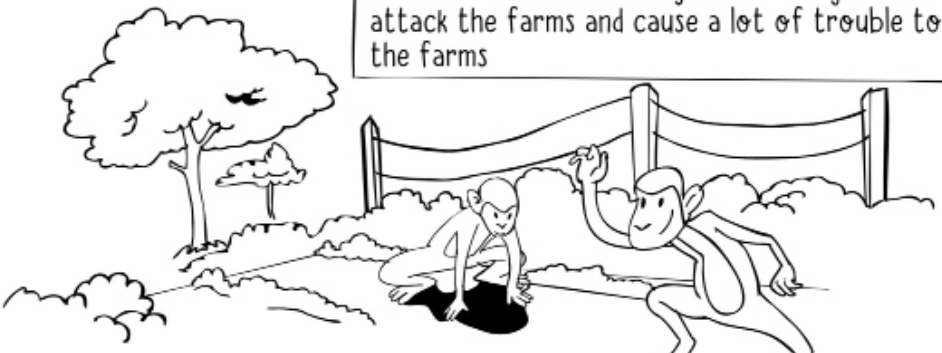


To solve this, I took an umbrella and stuck velcro strips on it.

I did the same thing to long plastic sheets. Now our bags can be protected from the rain

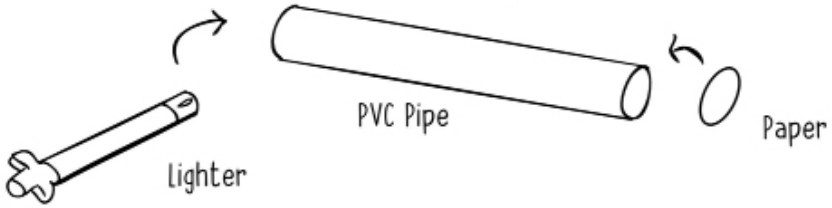
Project done by Akash

There are a lot of monkeys in our village who attack the farms and cause a lot of trouble to the farms



So I Thought of making a air gun that makes loud sound which would scare the monkeys.

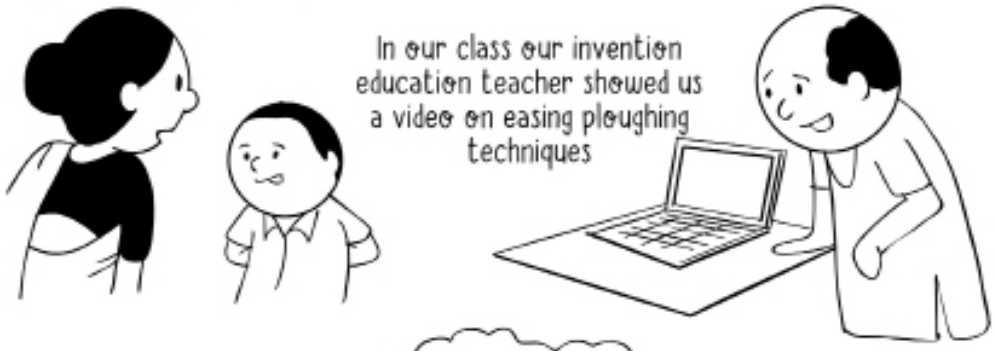
It is made of PVC Pipes, paper and lighter



When the lighter is turned on, the heat expands the air in the pipe and the paper snaps to take out a loud sound

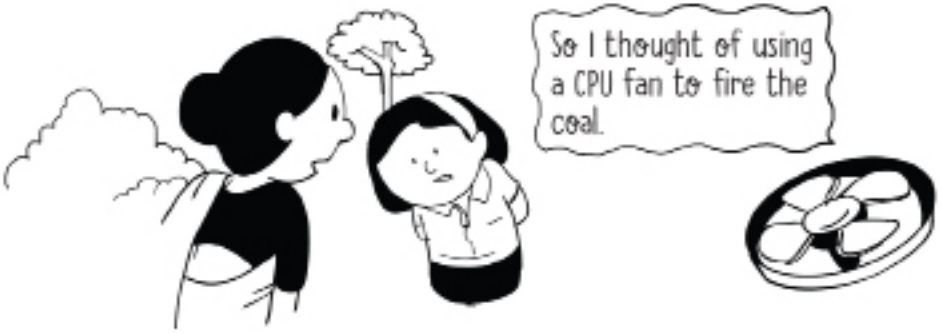
By using this the farmers are happy and the monkeys stay away

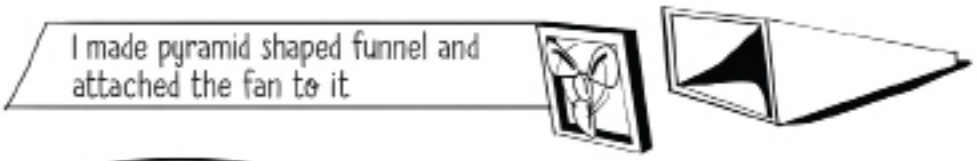
Project done by Sudarshan



A project done by Bhavishya

In our homes, our mothers blow air to fire the coal. It is very tiring and unsafe. I wanted to help them.





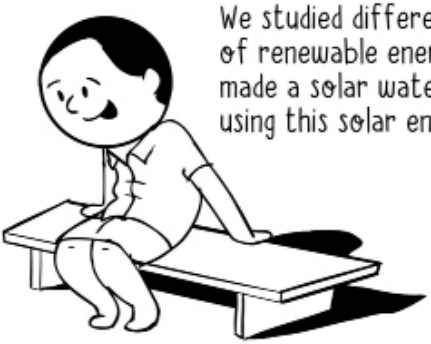
InnovativeUmbrella

Blower for gas stove

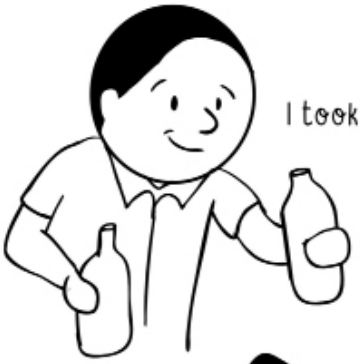
InnovativeGuntoscarewildanimals

GardenPloughingmachine

Project done by Shrikara



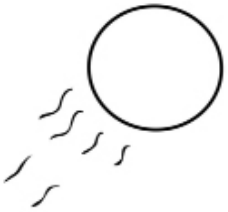
We studied different forms of renewable energy and I made a solar water distiller using this solar energy

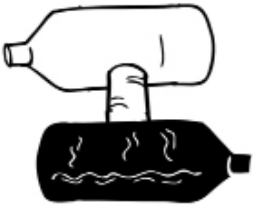


I took 2 bottles

I painted one black

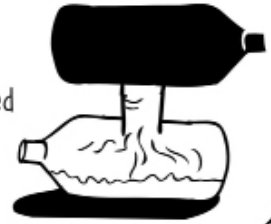
joined the two bottles with a pipe





When we put this set up in the sun. The water in the black bottle evaporates.

Once the water is evaporated completely, the set up is inverted and can be condensed in the other bottle

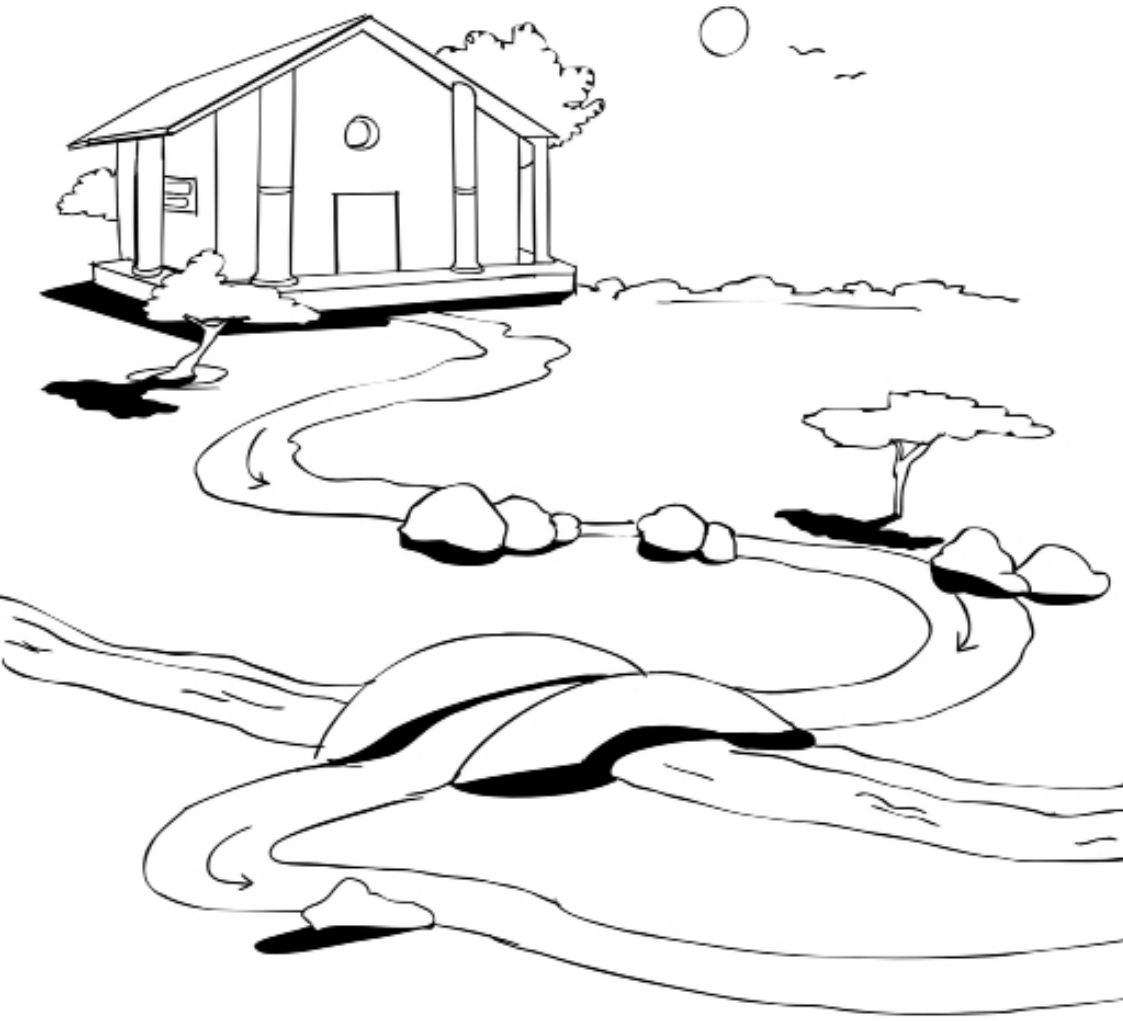


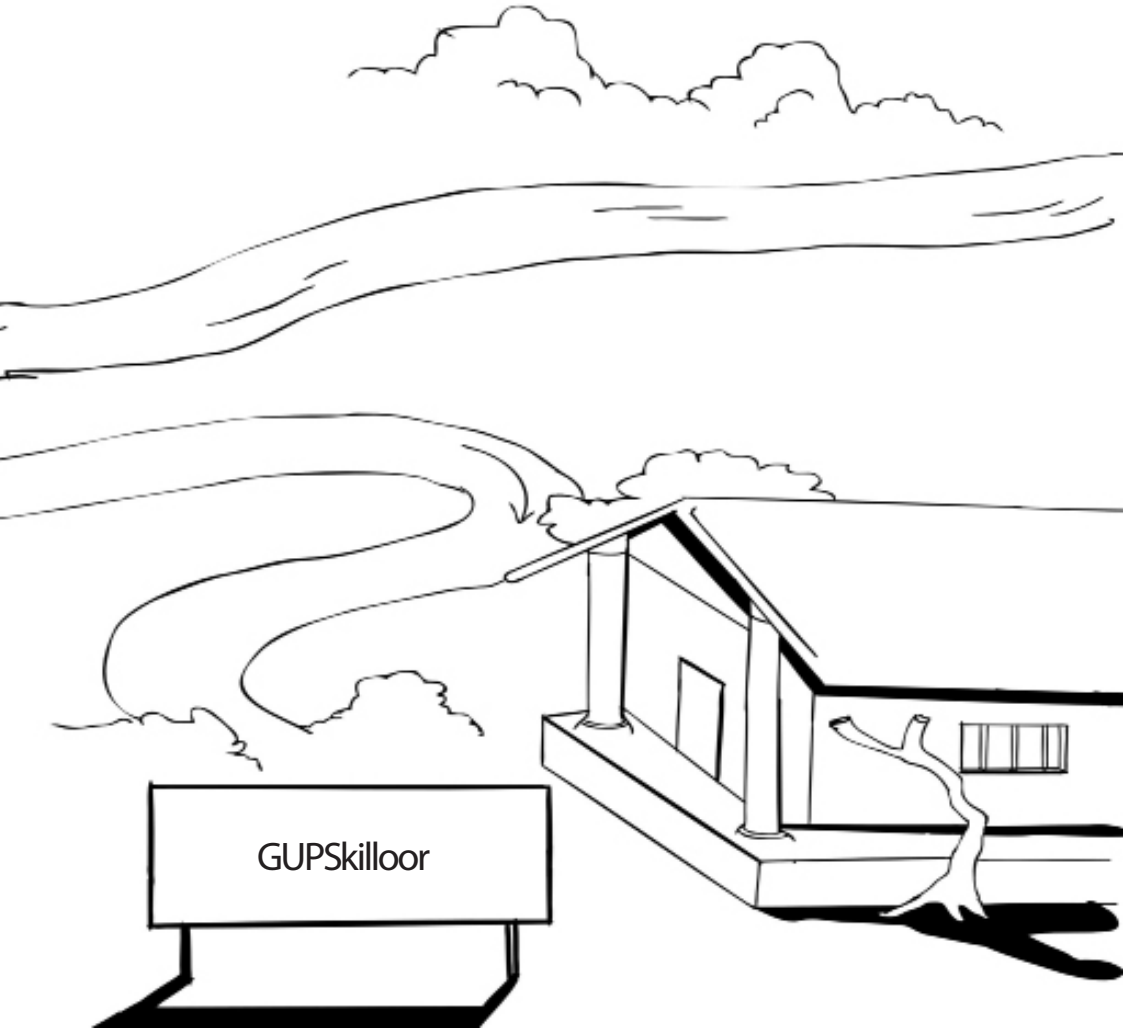
The water obtained is completely clean and distilled

Project Done by Gauthama

Solar Water Distiller

Butter Churner

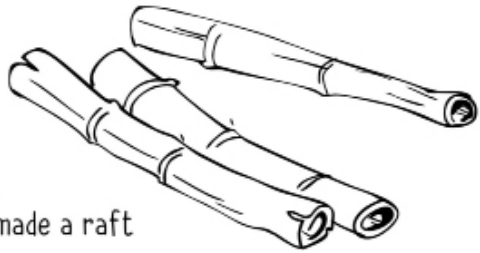



GUPSkilloor

Our village is near a river and to go to school we have to cross the river

In summers it is easy to cross because the water level is low

But in the rainy season, the water level increases and we can't cross

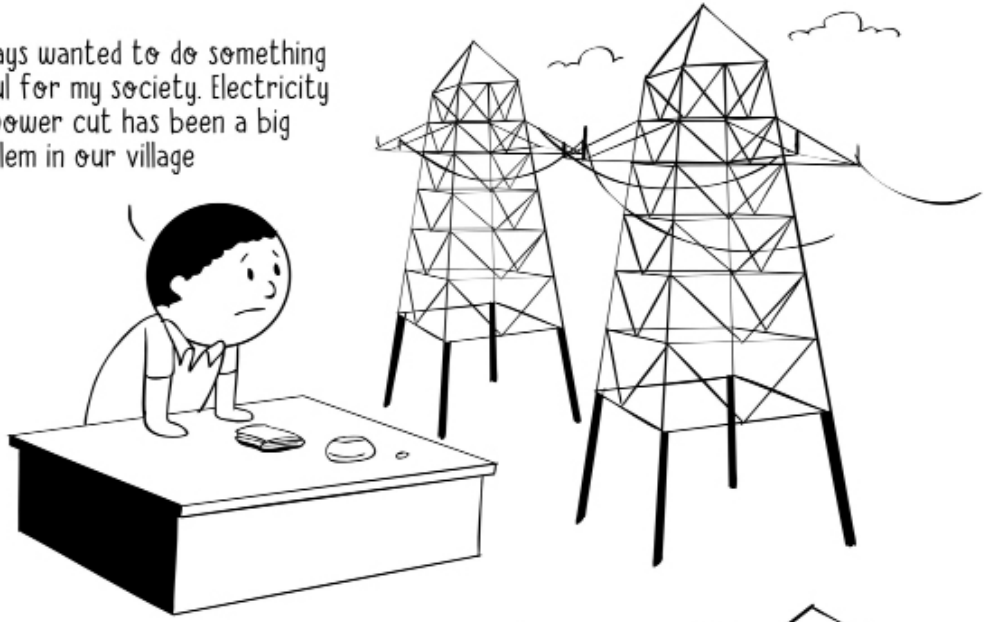


So I collected some bamboo and using the bouyancy principles, I made a raft

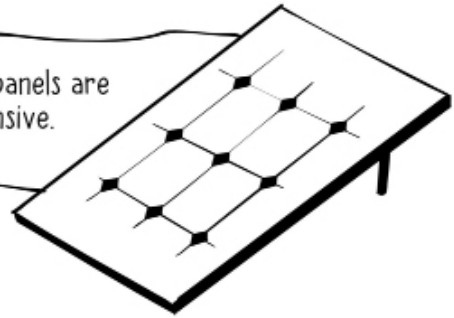
The force that causes objects to float. According to the principle of Archimedes, when a solid is placed in a fluid (a liquid or a gas), it is subject to an upward force equal in magnitude to the weight of the fluid it has displaced.


What have you made Sujay?
I was working on some other project with Bamboo and that's when I accidentally discovered this.
My father had played songs on the phone while i was working.
And that's when we realized that the voice doubled in the bamboo.
I made a bamboo speaker.

I always wanted to do something useful for my society. Electricity and power cut has been a big problem in our village

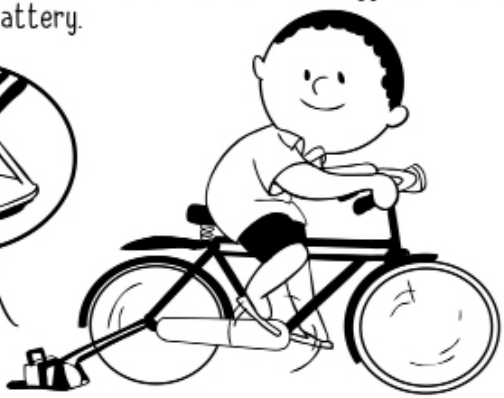


And Solar panels are very expensive.



So I thought what if i generate power from mechanical energy.

I attached a motor to the the cycle. When we cycle, the motor is rotated, and the energy is stored in the battery.

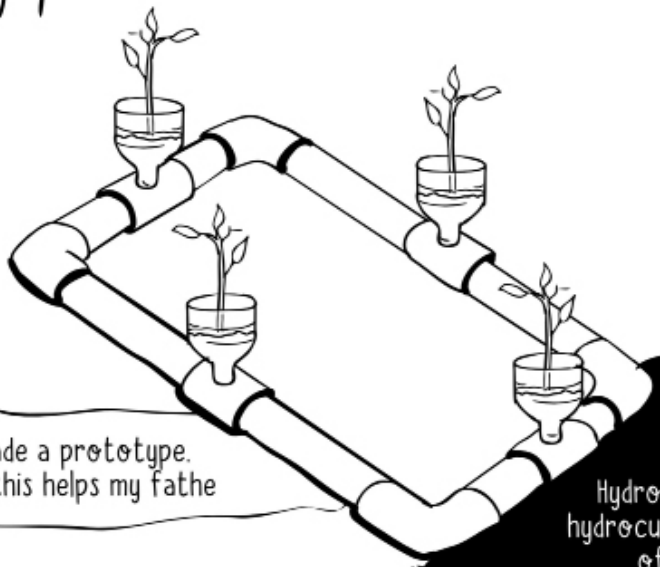


Now a person can exercise as well as store electricity.

My father works in the fields and I have always seen him struggling with the farming and cultivating

He comes back home really tired and I have always wanted to do something for him.

So i spoke to my invention program teacher and she introduced me to a new technology.



And I made a prototype. I hope this helps my fathe

Hydroponics is a subset of hydroculture and is a method of growing plants using mineral nutrient solutions, in water, without soil.


Ma'am we went to the SELCO office for a visit
SELCO
And there we saw a man using a manual drilling machine and it involved a lot of power to use it
So I thought if a man is having so much difficulty, children like us can never do it!
That's when I thought of making a battery operated drill machine.

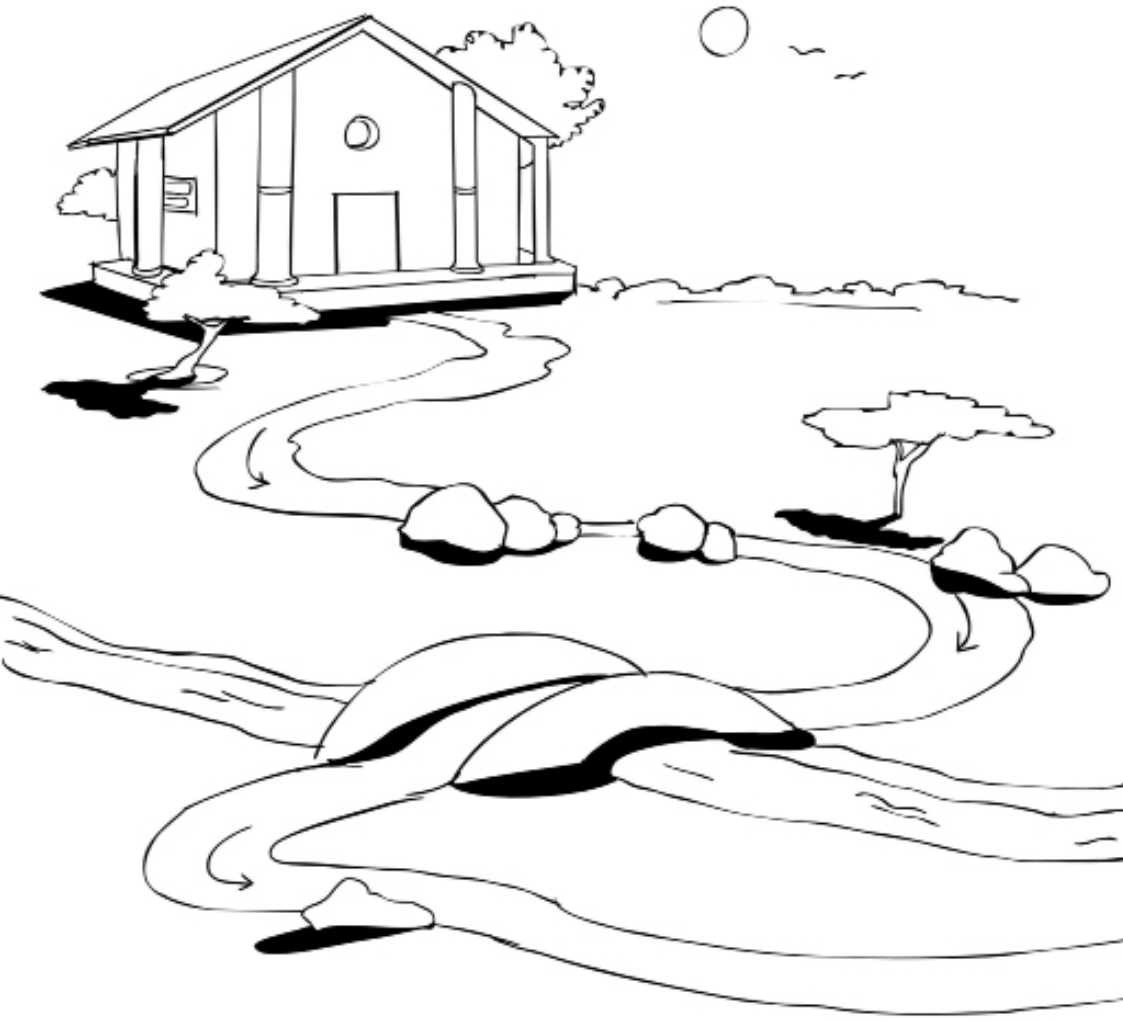
Bamboo raft

Current generating Cycle

Bamboo Speakers

Hydrophonics

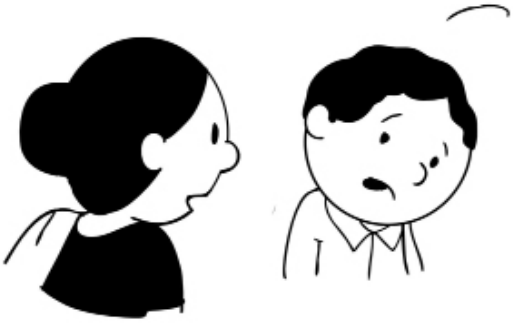
PCB Drill



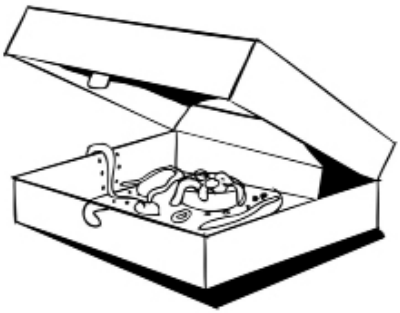

SDM

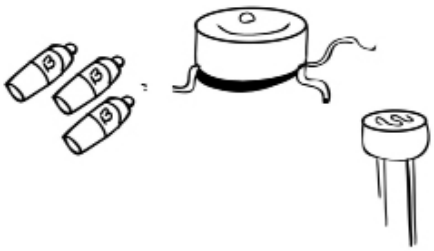
Project Done by Bharath

Project done by Saad hasanabba

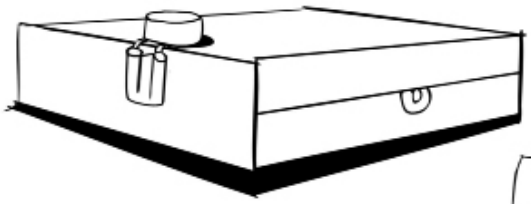


I have a made a jewelry box security system to avoid thefts.

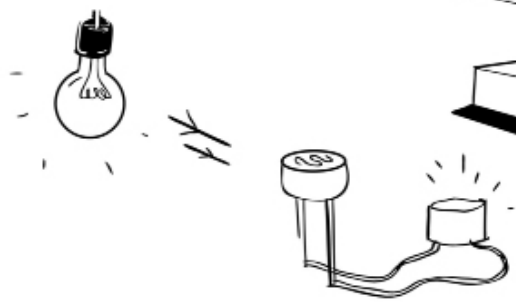


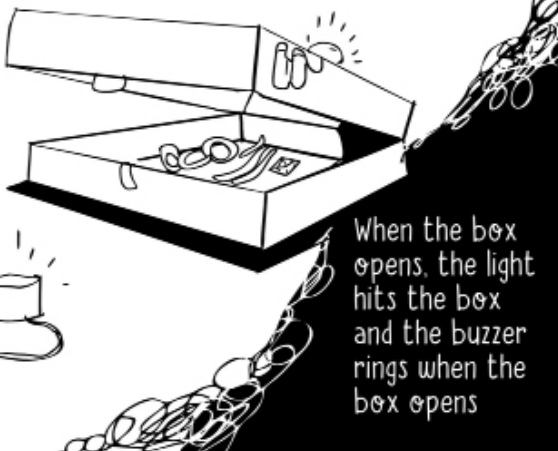


I used a Light Dependent Resistor (LDR). A LDR is a device that is activated when light falls on it



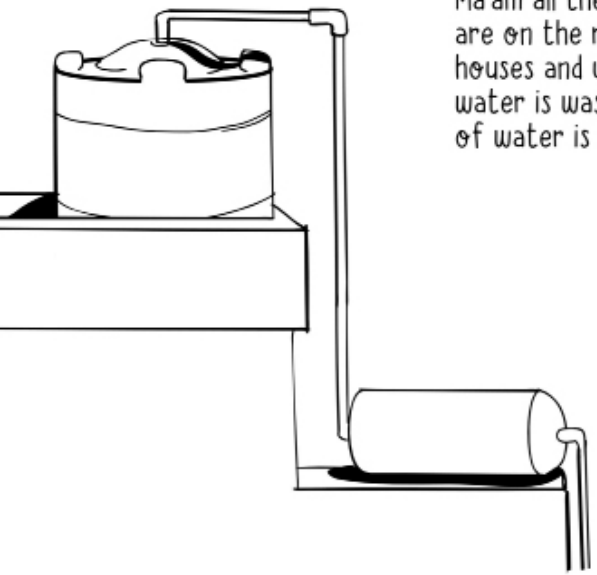
The LDR is placed inside the jewelry box



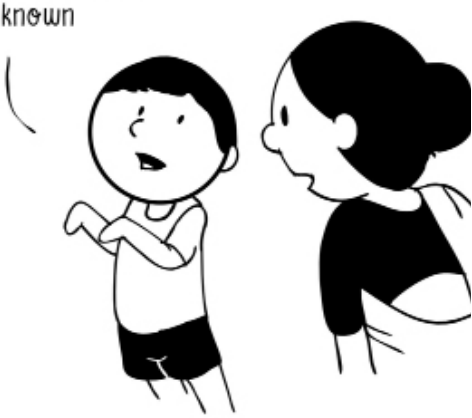


When the box opens, the light hits the box and the buzzer rings when the box opens

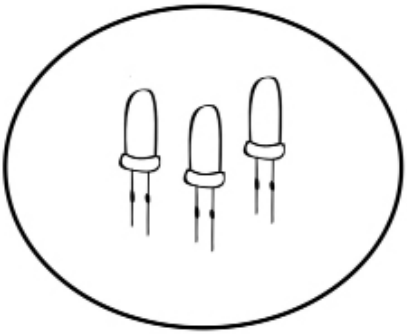
Project Done by Vikram

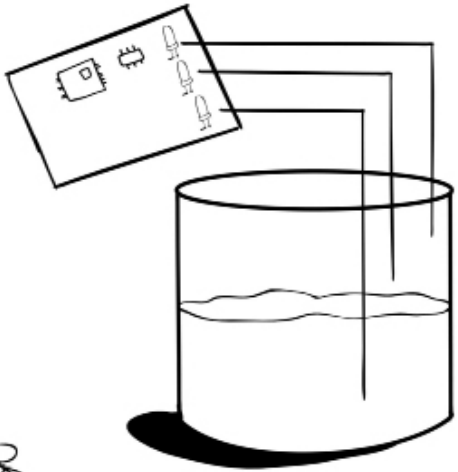


Ma'am all the water tanks are on the roof of the houses and usually a lot of water is wasted as the level of water is not known



So I made a water level indicator that can help us save a lot of water. I took 3 LEDs, each LED symbolizing a level

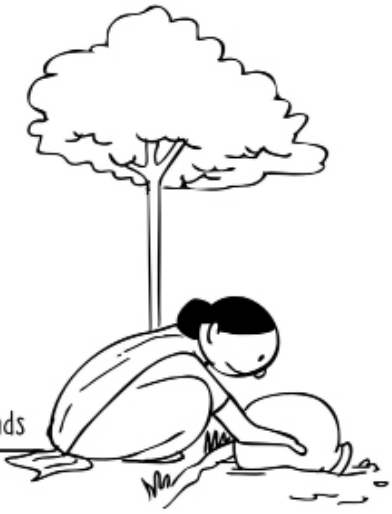




When a car moves over the wire, the circuit is complete and the buzzer makes out the sound. This sound warns the other car and can help avoid an accident

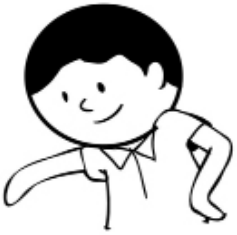
Project done by Manoj

Near our school there are villages where ladies take out water from the well



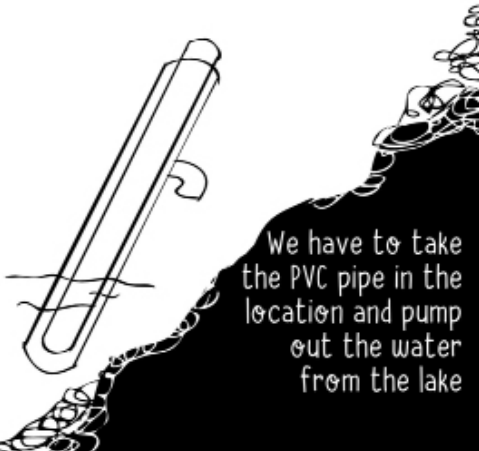
Or they collect it from shallow ponds

But it is really difficult to take out water from the deep ponds



So I made a portable hand pump that can take out water from deep ponds and lakes

There are 2 pipes one inside the other. As we pull the inner pipe, the water is sucked and poured in the vessel

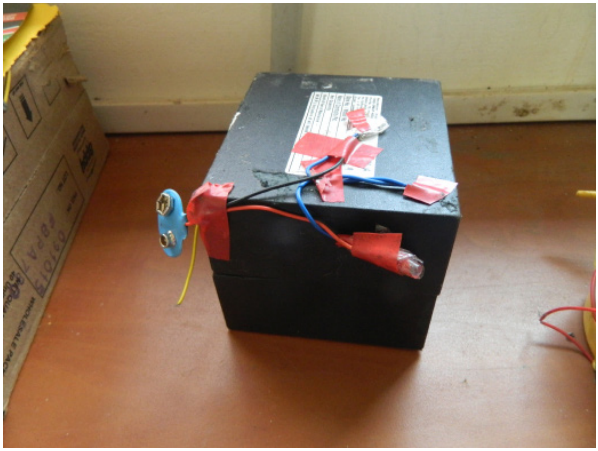


We have to take the PVC pipe in the location and pump out the water from the lake

Acccidentavoider

WaterLevelIndicator

Water Pump



Security System

Project done by Nishan.K

A teacher from Augustya foundation comes to our class once a week to teach us principles of science.

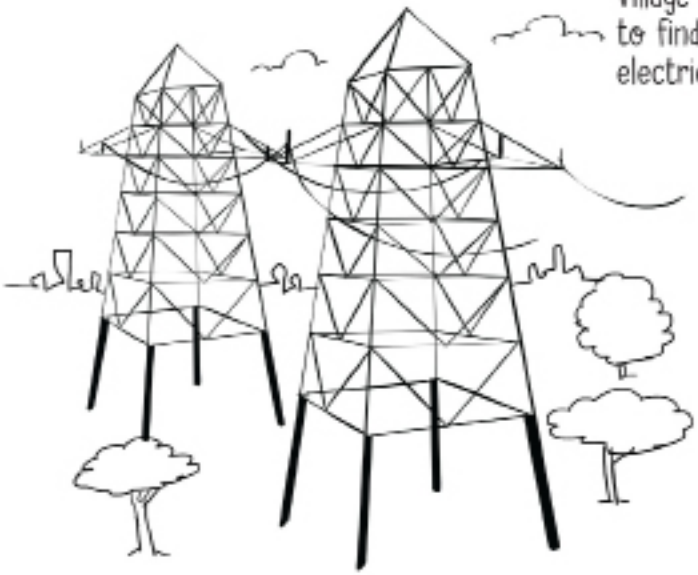
We all get veryexcited as he uses a projector to teach us.

Some days back he taught us about lenses and the converging and diverging principles of lenses

Using that principle I made a projector that can project a mobile phone screen on a wall

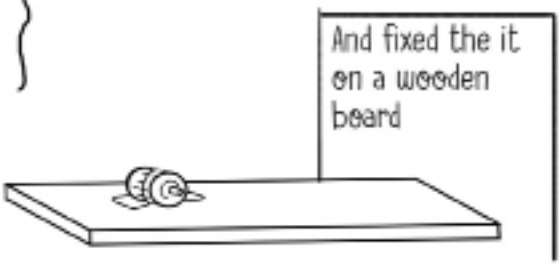
Project done by Abhikarthik

There is a lot of trouble in our village and I realized that it's best to find alternatives to do get electricity

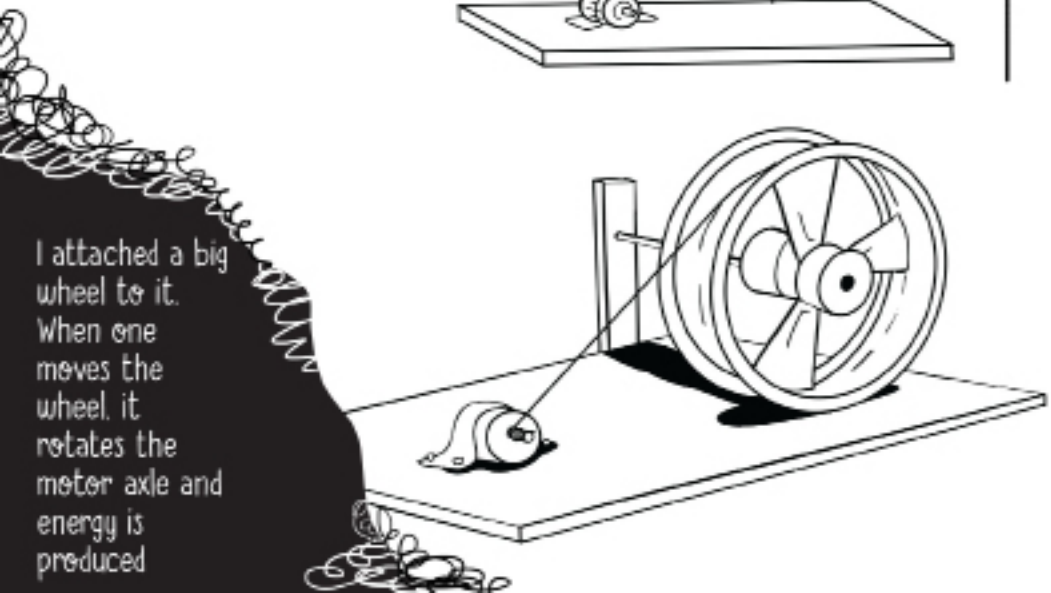


I took a motor

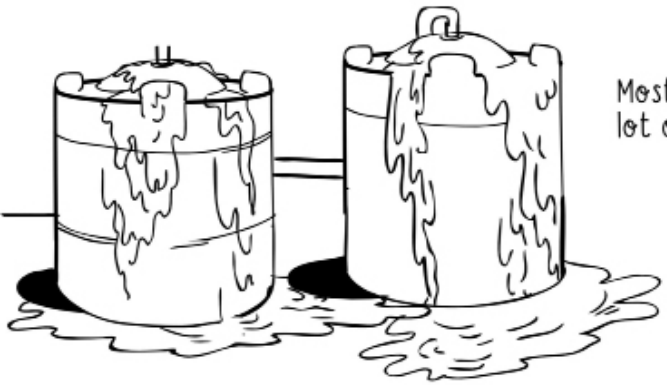
And fixed the it on a wooden board



I attached a big wheel to it. When one moves the wheel, it rotates the motor axle and energy is produced

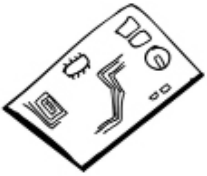


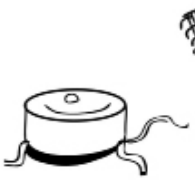
Project Done by Pranav

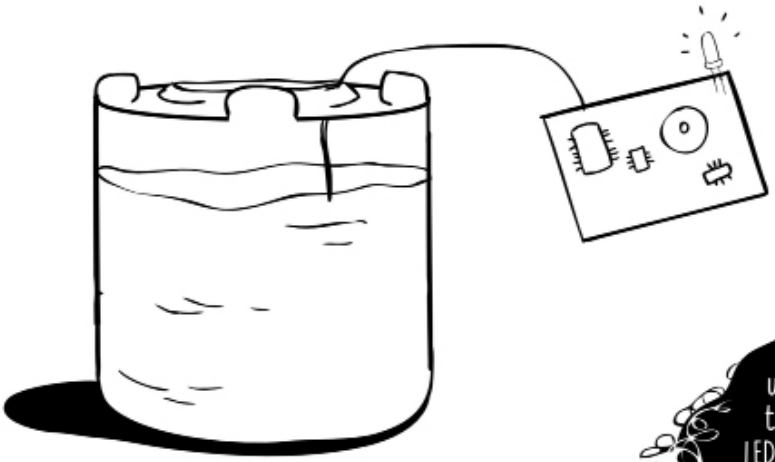


Mostly tanks overflow and a lot of water is wasted

So I took a LED, a buzzer, a battery and a circuit board





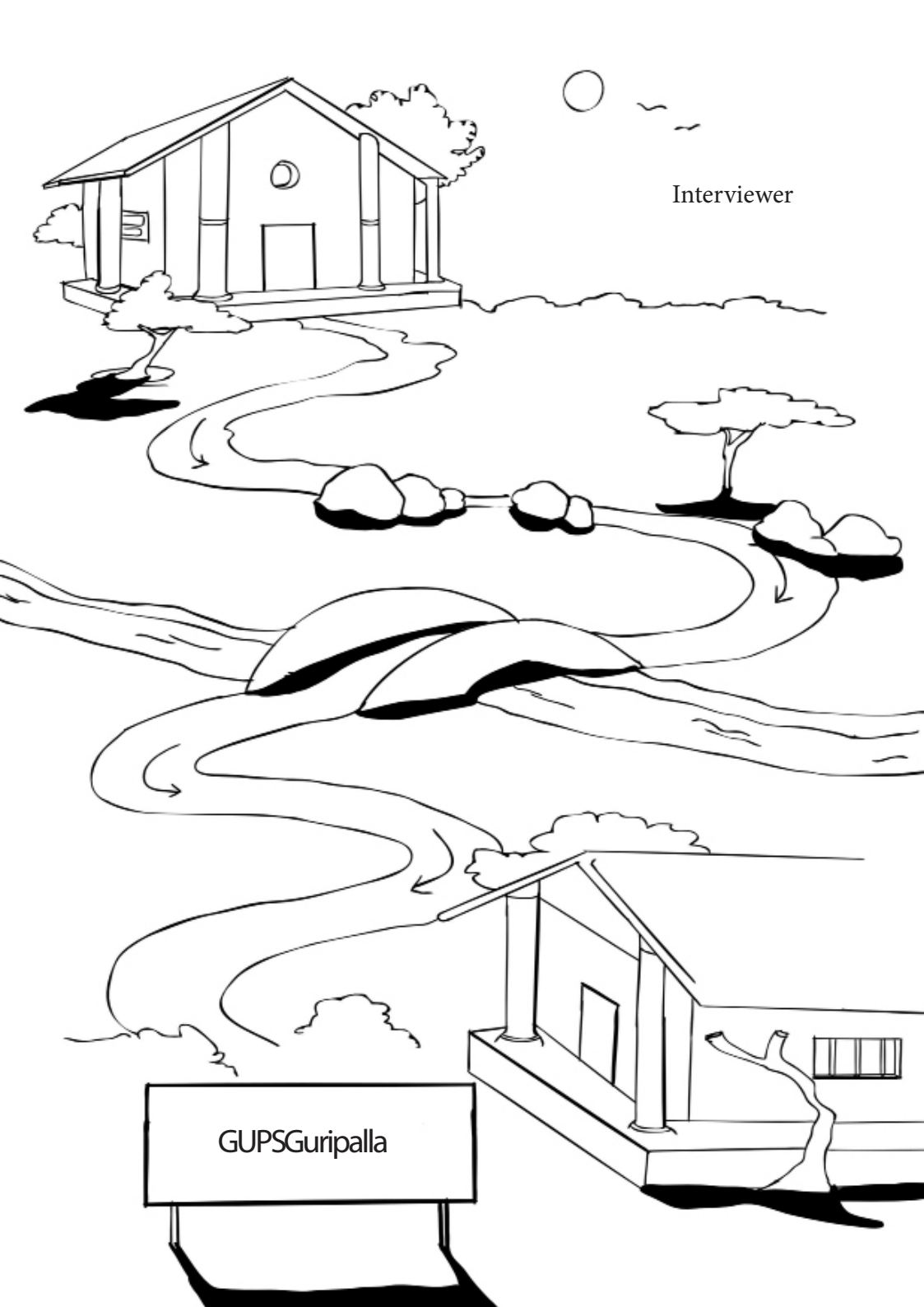


The wires are dipped in the tank. As soon as the water touches the wire the buzzer rings and the LED glows to indicate that the water is full. This helps to save water

Projector

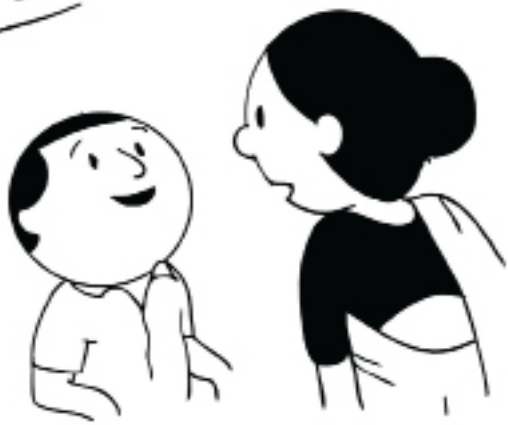
WaterLevelIndicator

Conversion of mechanical energy to electrical energy


Interviewer
GUPSGuripalla

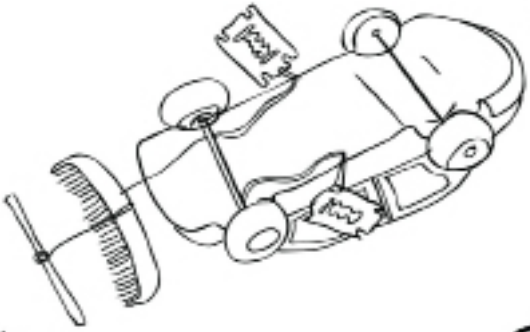
Project done by Yashwanth

It is really difficult to cut the grass manually.



I thought of making a car with blades that can cut grass. But then I thought it will not solve the problem completely

So I thought of making a combined setup that settles the mud after cutting the glass



Now everyone is happy and can cut grass easily

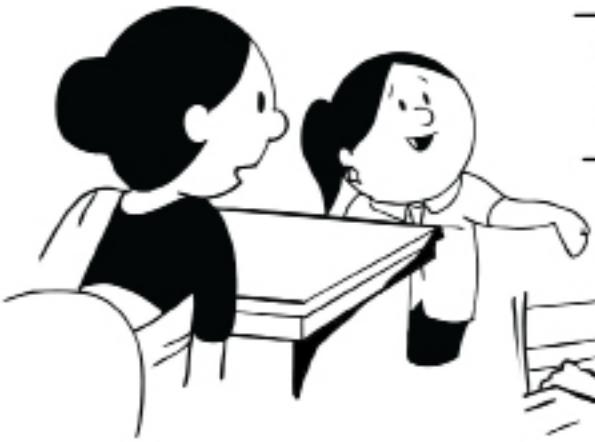
Last year, a lady died because of an accidental fire in the kitchen. To make sure that never happens again, I used the property of carbon dioxide and made a homemade fire extinguisher

I took some baking soda in a cloth and tied it with a thread

The bottle was then filled with water. As soon as you open the bottle, the baking soda falls in the water and CO2 is produced.

Sodium bicarbonate is a weak base which is commonly known as baking soda and used in cooking. It weakly ionizes in water. In reaction with an acid, it liberates carbon dioxide gas. .Here the carbon dioxide produced is used to extinguish fire

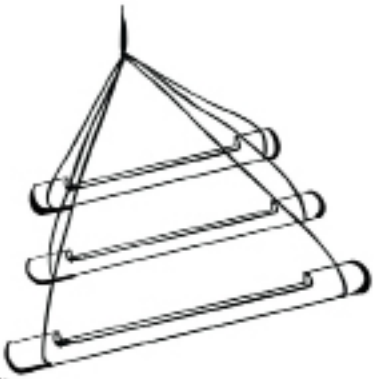
In our agriculture module, we learnt about different ways of farming and planting



One of it was greenhouse

from that concept I got an idea of hanging gardens

I took 3 PVC pipes of different sizes, cut it from between and filled mud in it



I then hung these PVC pipes and made them into a hanging garden

Ma'am, I was always interested in water filteration methods and wanted to make filtered water available for everyone.

I wanted the filter to be sustainable and affordable so that all villagers can have it.

I took a pot

And a filter candle

When the water is poured in the above pot. It filters through the candle and enters the pot below.

You can then pour it out from the tap


In our village, the bulbs are hung in open.
Duringg rain, the bulbs get fused and are never changed
So i thought, what if we reuse the scrap water bottles and protect the bulbs
I fitted the bulb in the bottle like this
Now when it rains it doesn't get spoilt

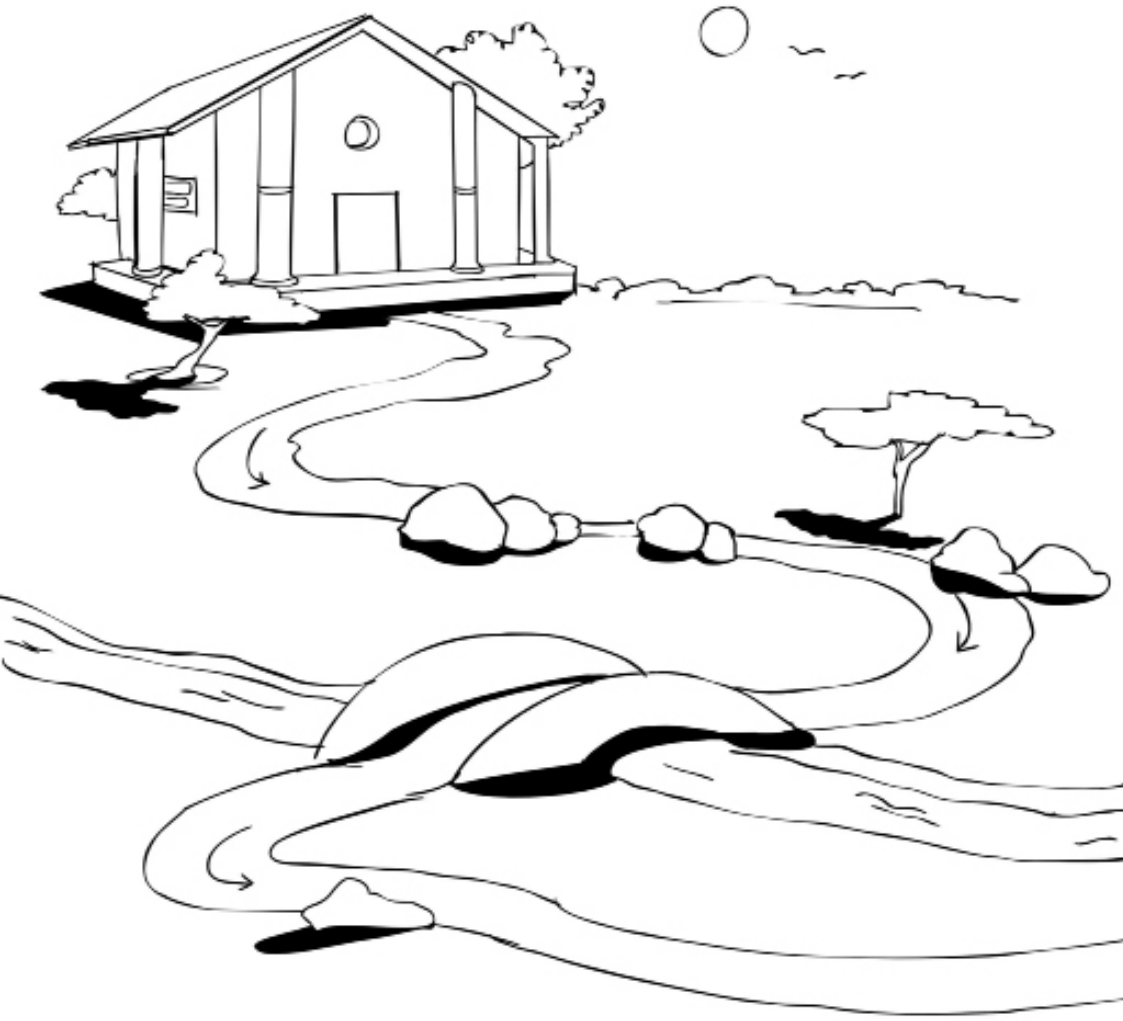
FireExtinguisher

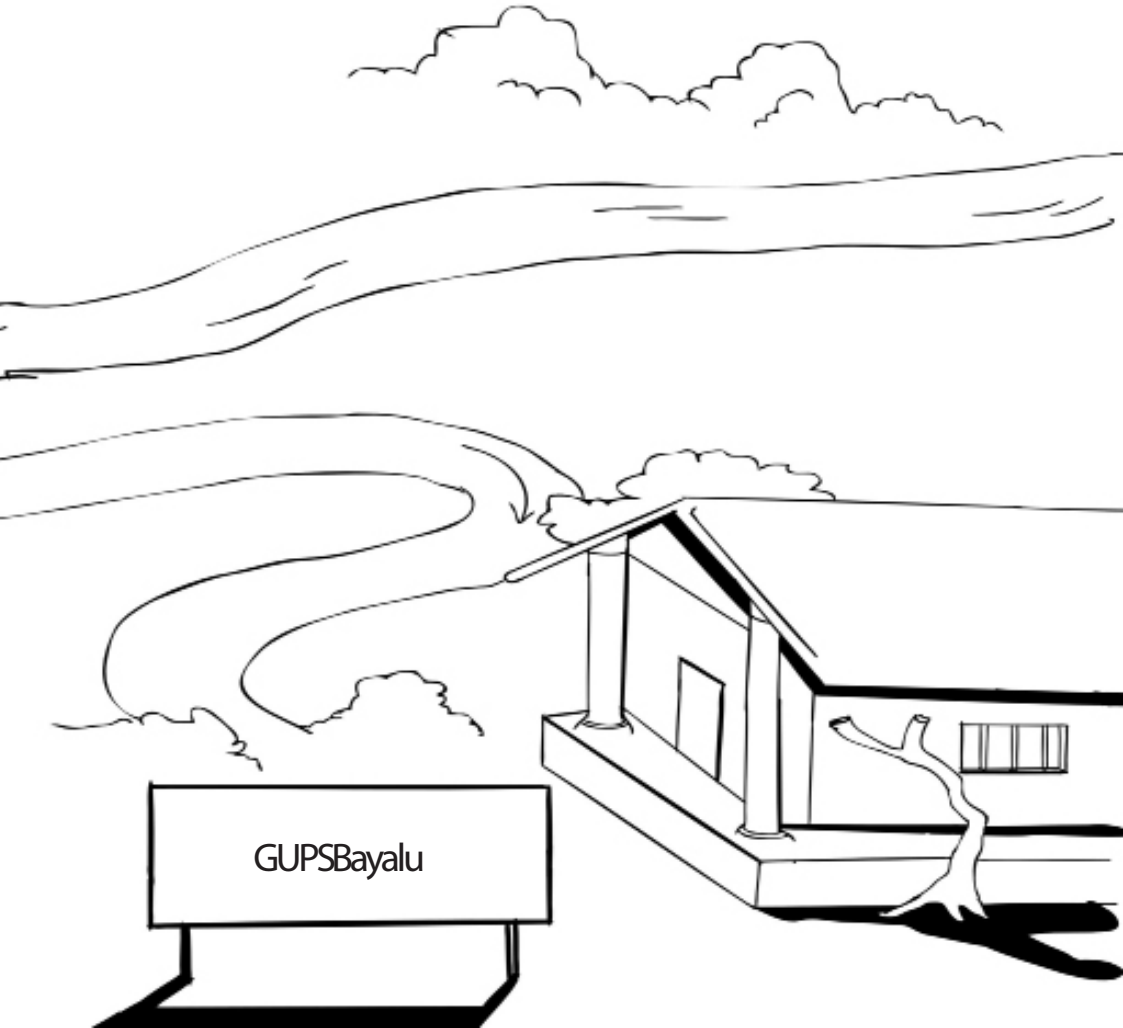
GrassCuttingMachine

Hanging Gardens

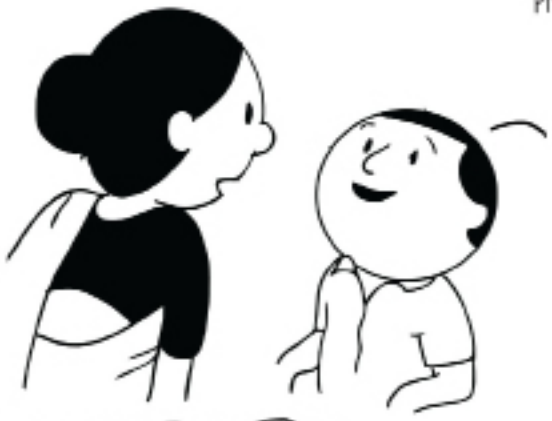
WaterfilterationPot

LightBulbProtector




GUPSBayalu

Project done by Nithesh kumar



I have always enjoyed making handmade products

I collected a lot of things from the scrap box and started making new products

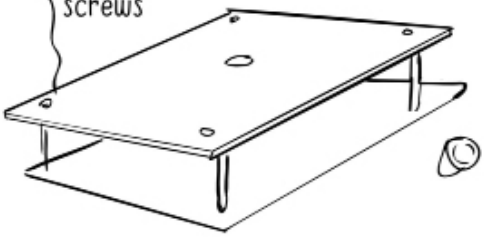
I made products like the christmas tree and other decorative items

Project done by Vinay

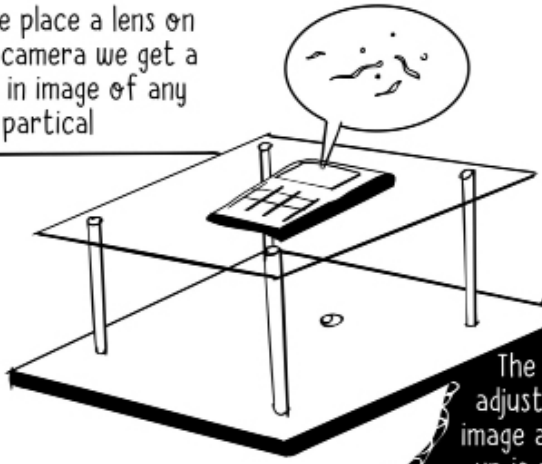
What have you made Vinay?

The microscopes used for our biology class are very expensive and our school can't afford many

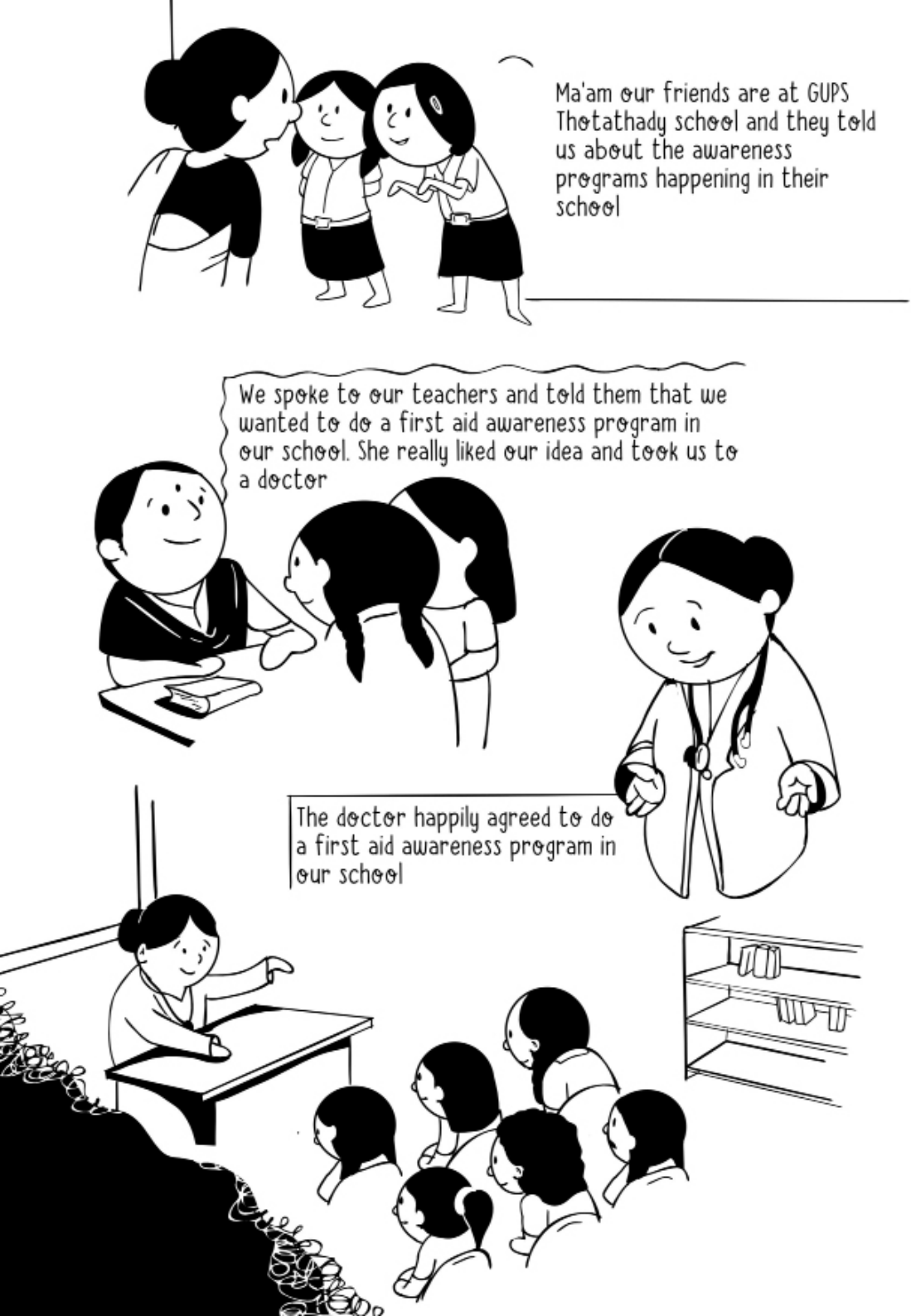
I placed the lens on a glass sheet mounted on the wood with screws



When we place a lens on a phone camera we get a zoomed in image of any partical



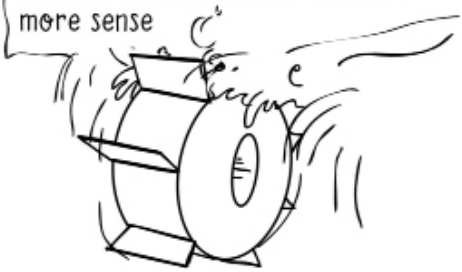
The screws can be adjusted to focus the image and hence this set up is a easy and cheap replacement of the regular microsopes

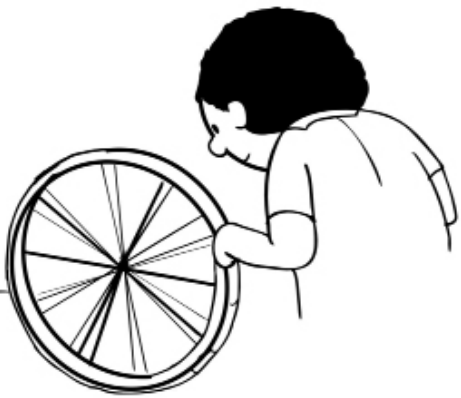

Ma'am our friends are at GUPS Thotathady school and they told us about the awareness programs happening in their school
We spoke to our teachers and told them that we wanted to do a first aid awareness program in our school. She really liked our idea and took us to a doctor
The doctor happily agreed to do a first aid awareness program in our school

So Arif, what have you made?

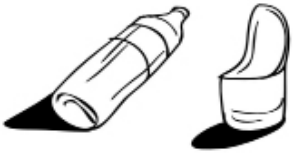
We went to the inspried award function and there I saw a windmill project. In our area a windmill is not appropriate.

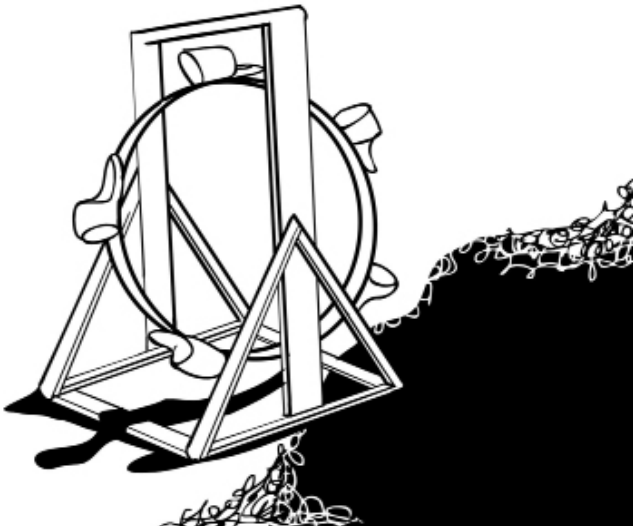
There was a stream in our area and a water turbine would make more sense





So I took a cycle wheel and some glass bottles and made a model for a wind turbine





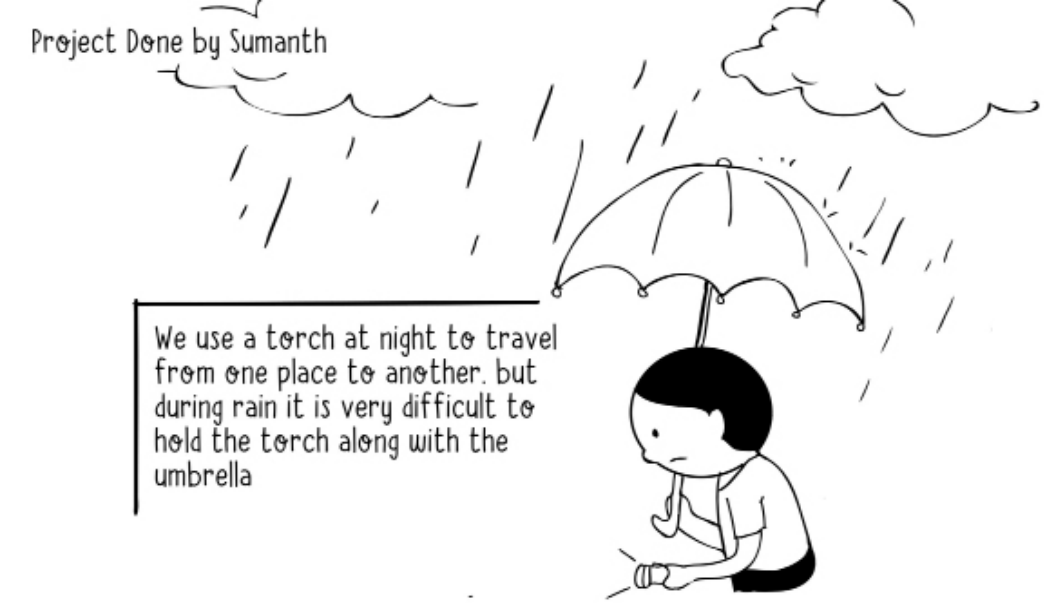
Digital Microscope

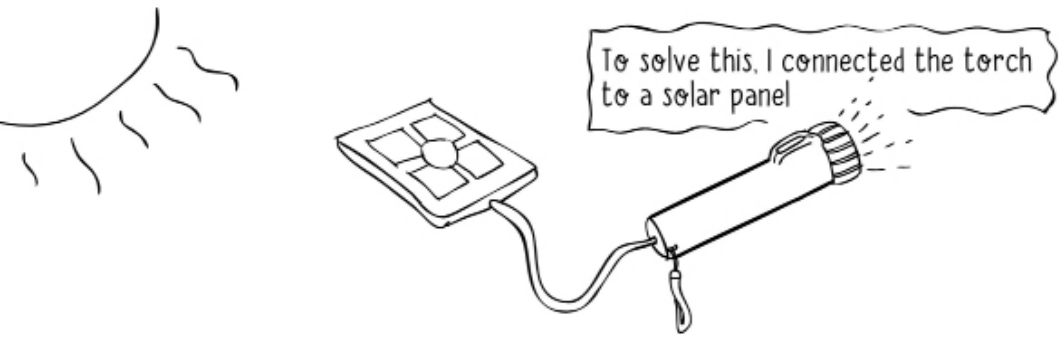
Decorative items

FirstaidAwarenessProgram

Water Turbine

Project Done by Sumanth



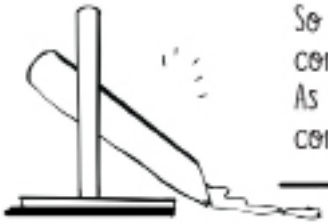


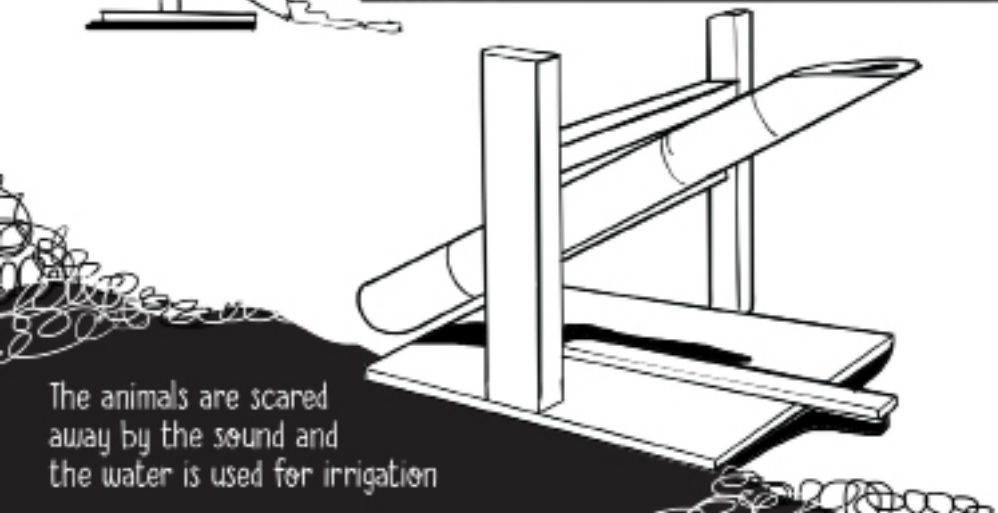
Project done by Sukesh

In our agricultural trip, the farmers told us that the animals spoil their farms and they have no solution for it.

We discussed the farmers disappointment with our teachers and they asked us to device a way to solve it

So we made a system where there is continuous supply of water in a bamboo stick. As the water is filled, the bamboo falls and completes the circuit that makes out a sound.



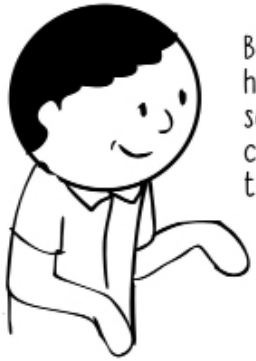


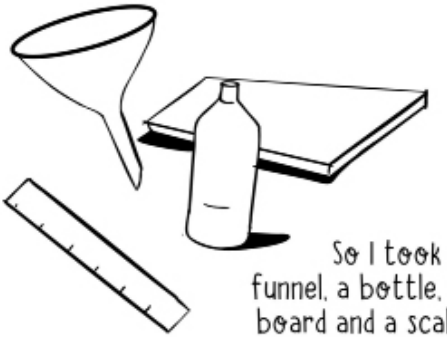
The animals are scared away by the sound and the water is used for irrigation

Project Done by Abhivruddi

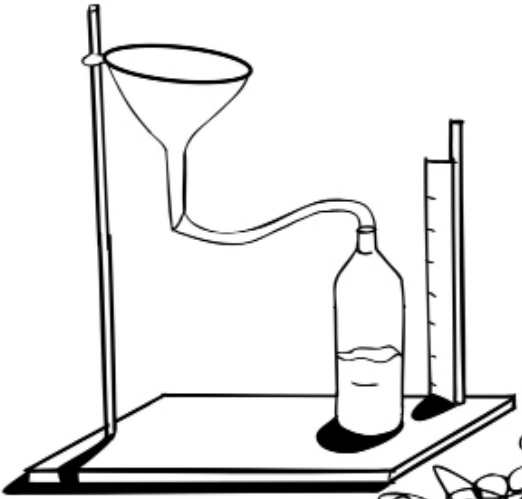
There is a lot of variation in level of rainfall and we need to find a way to help the farmers.

But first we have to make a setup where we could measure the rain





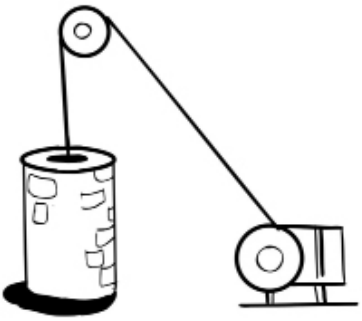
So I took a funnel, a bottle, a board and a scale



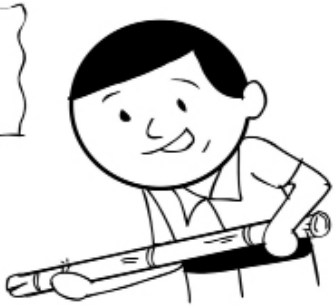
The rain collects in a funnel and it is transfered in the bottle thru- ough a pipe. The water level in the bottle is meas- ured by a scale.

Project Done by Jayaraj

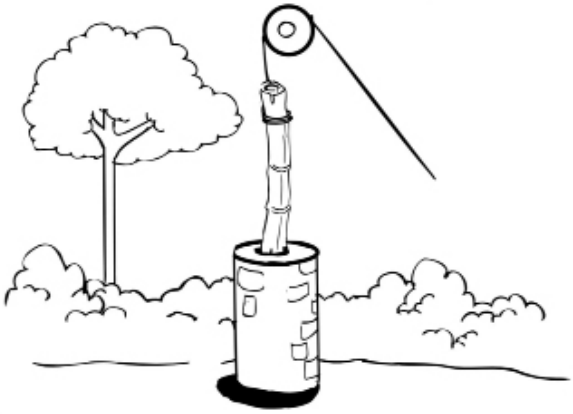
We have a borewell and a motor but when there is no power, the water cannot be pulled out



Only bamboo fits in a borewell properly, so I made a bamboo water lifter



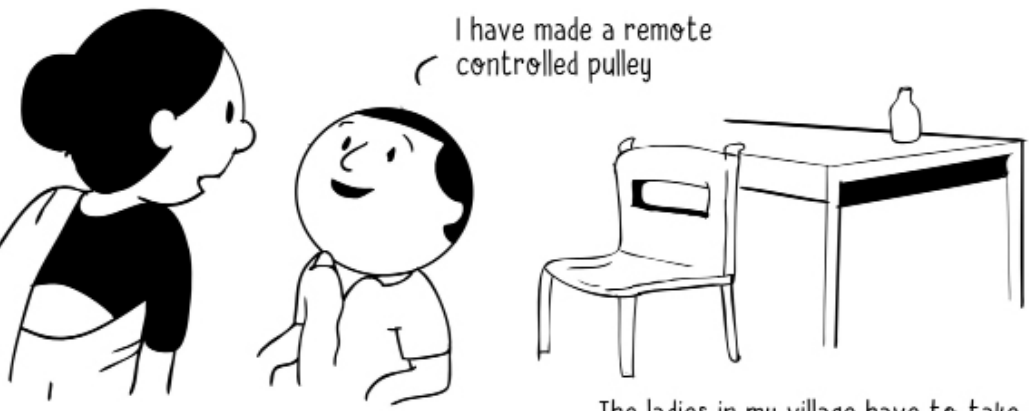
I closed one end of the bamboo and tied the other with a nail and a rope.



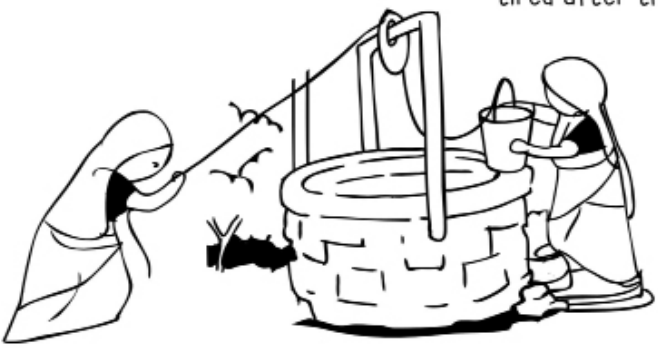
As the bamboo is immersed inside the borewell, the water is filled in the bamboo and the filled bamboo can be pulled out.

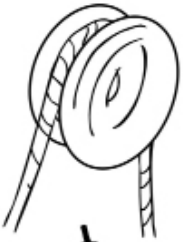
So Sujan, have you made something for your village?

I have made a remote controlled pulley

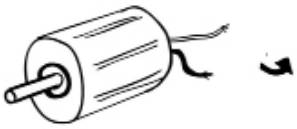


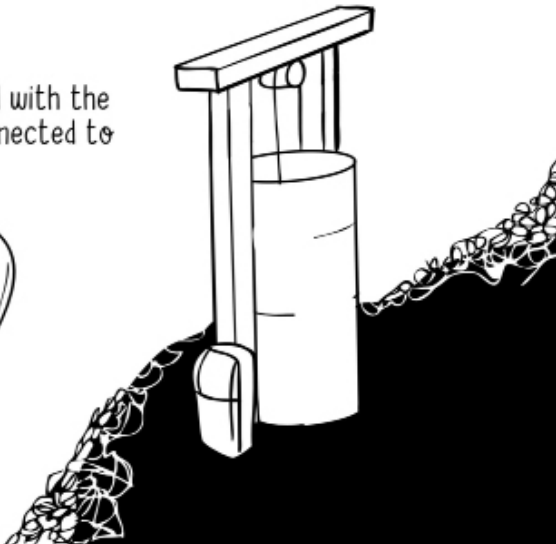
The ladies in my village have to take out water from the well everyday. It takes a lot of time and they get tired after the activity.





The pulley is connected with the motor and that is connected to the controller.



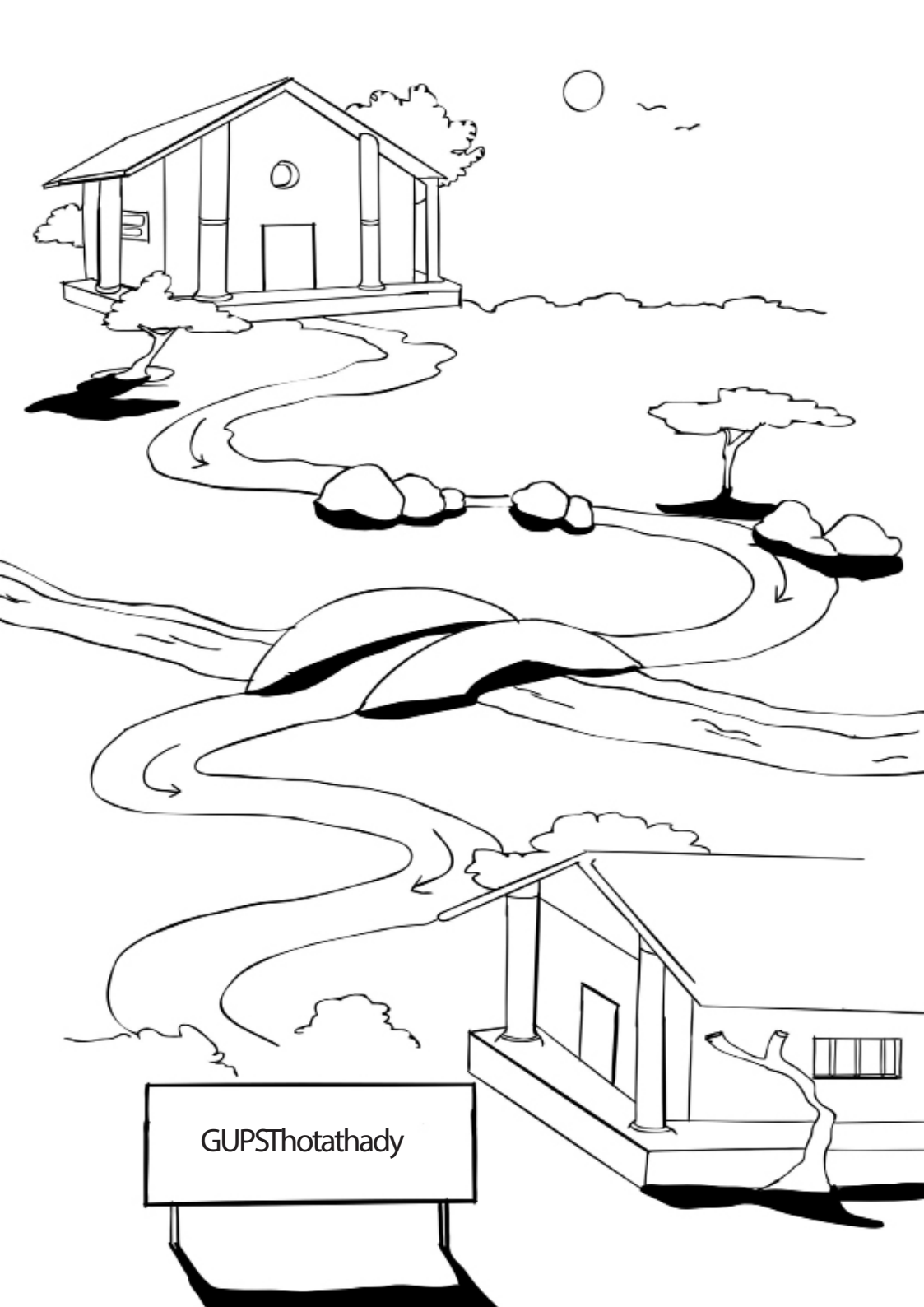


Bamboolifterforborewell

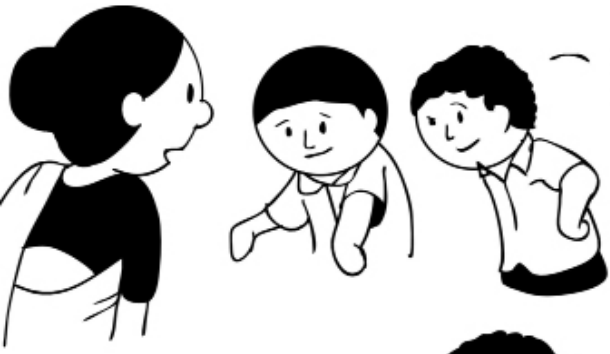
Remotecontrolwelloperator

Umbrella with torch

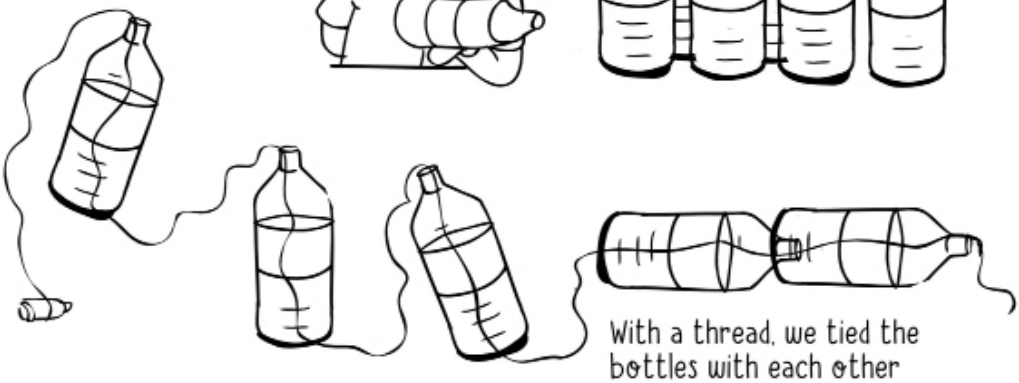
Rainwatermeasuringdevice


GUPSThotathady

A Project done by Amir



We were asked to reuse the waste and try something new.

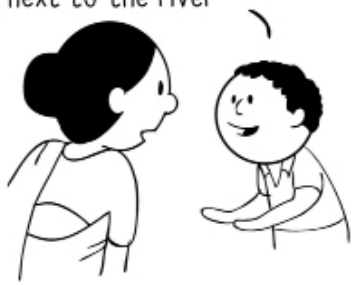


With a thread, we tied the bottles with each other

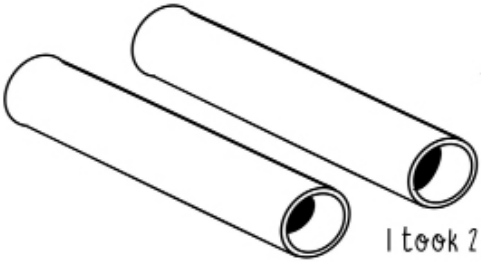
Instead of putting the scrap bottles in the dustbins, we made the dustbins using scrap water bottles.


So what have you made girls?
Ma'am actually we did an awareness heath campain for all the girls of our school.
We went to our invention fair teacher and told her that we were interested in creating a campaign
She liked our idea and said that she would take us to a doctor who could conduct the campaign
We went to the doctor and she agreed.
Health and safety is.....
The girls now are much more confident and aware.

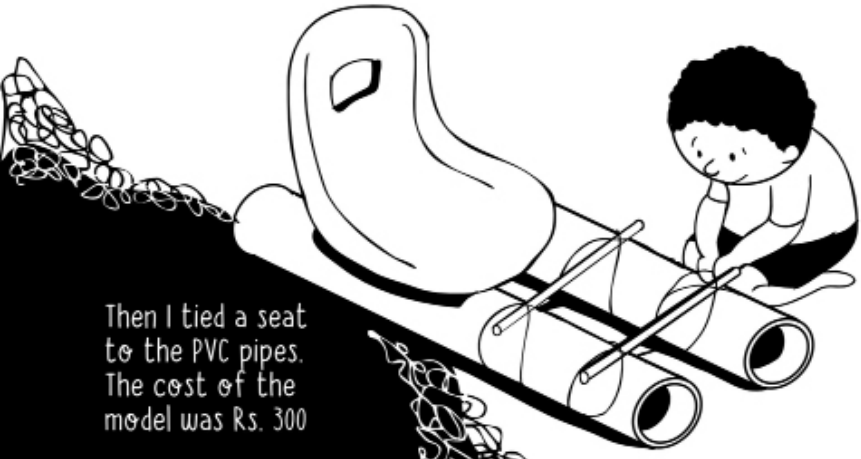
Ma'am, we have a house next to the river



During rain, the water level increases and affording the boat is not possible.



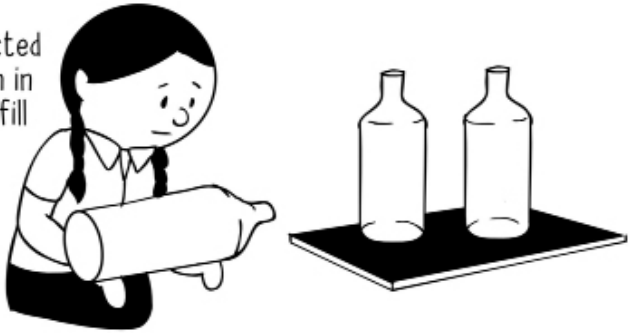
I took 2 PVC pipes.

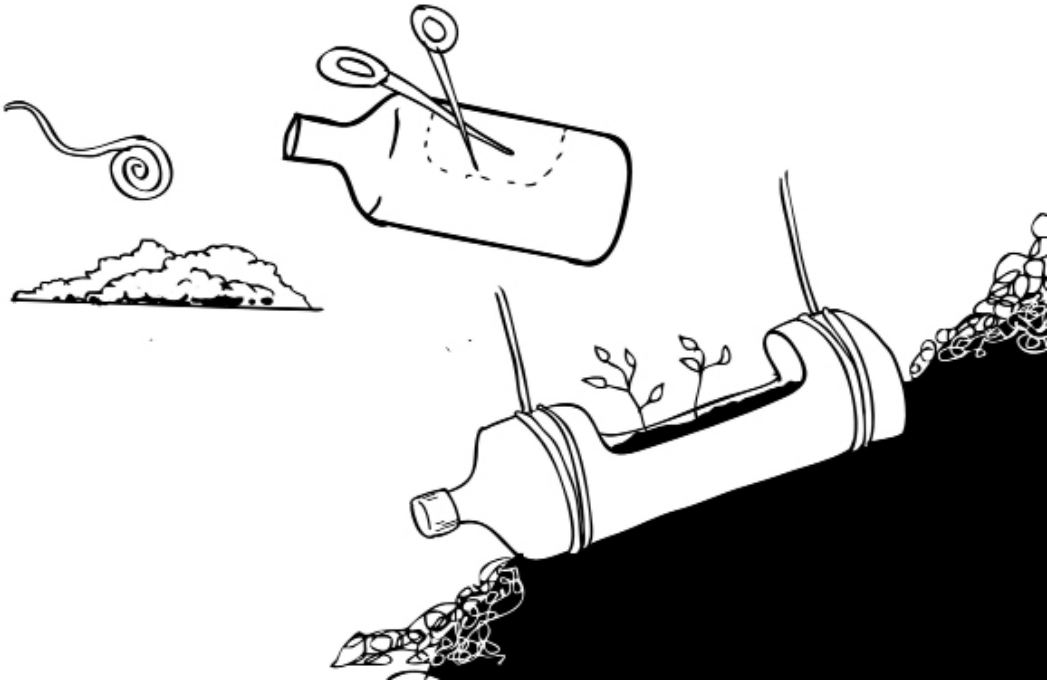


Then I tied a seat to the PVC pipes. The cost of the model was Rs. 300

We were doing gardening and we wanted to use hanging gardens, but buying ready made gardens was really expensive

We then planned and collected 3 big bottles and cut them in such a way that we could fill soil in it.





Plasticbottledustbin

Healthawareness

Boat

Hanginggardens

We had a class on soil erosion and our teacher taught us the principle behind it.

Last year my family had a lot of losses as the soil got eroded by heavy rainfall

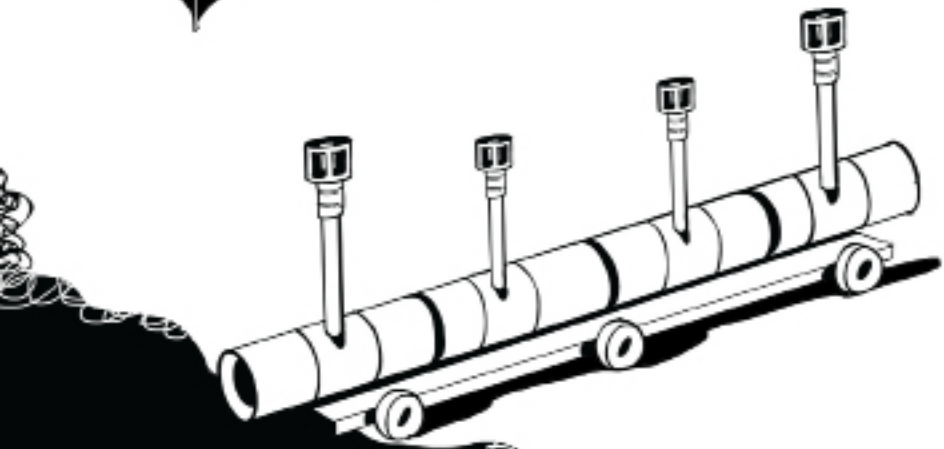
So I sat after school and tried to understand if I could apply the science learnings and help my father

I finally made 2 models. one with plants and one without plants.Then I poured water in these. The one with plants was much more stronger that the one without plants.

In the agriculture visit we saw sprinklers spraying water in the fields. These sprinklers just sprinkle water at a particular location and usually the corners of the fields are left unwatered

Looking at this problem, I sat in the class and started thinking of ideas. That's when I thought of a mobile sprinkler.

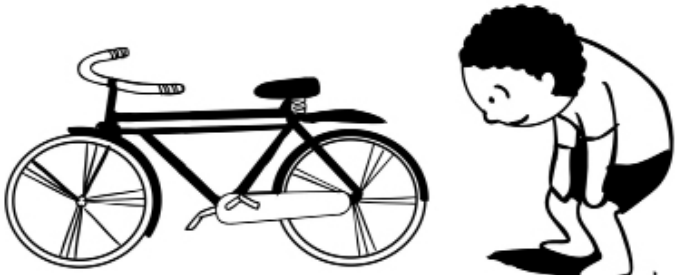
A sprinklers that can move from one point to the other



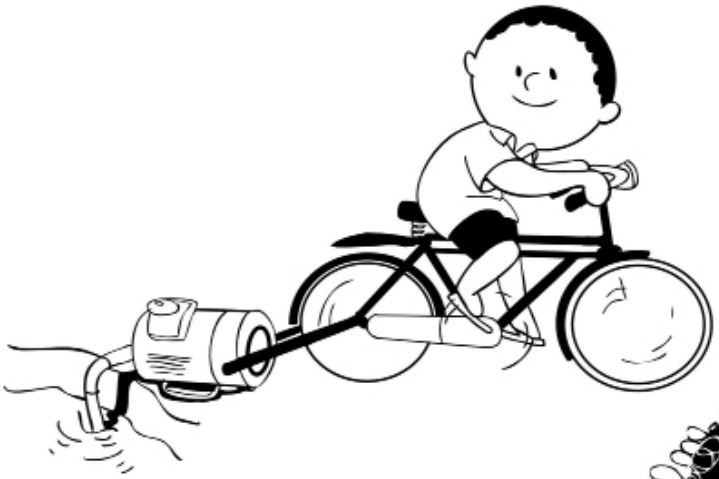
This mobile train has 4 sprinklers on it and it can be moved from one point to the other on wheels

Project Done by Gurucharan

In the agriculture module, I saw the videos on how people have fixed their problems without electricty and it inspired me to innovate something with the resources I had.



So I took my old cycle and attached a motor to it. This motor pumped water from the water bodies

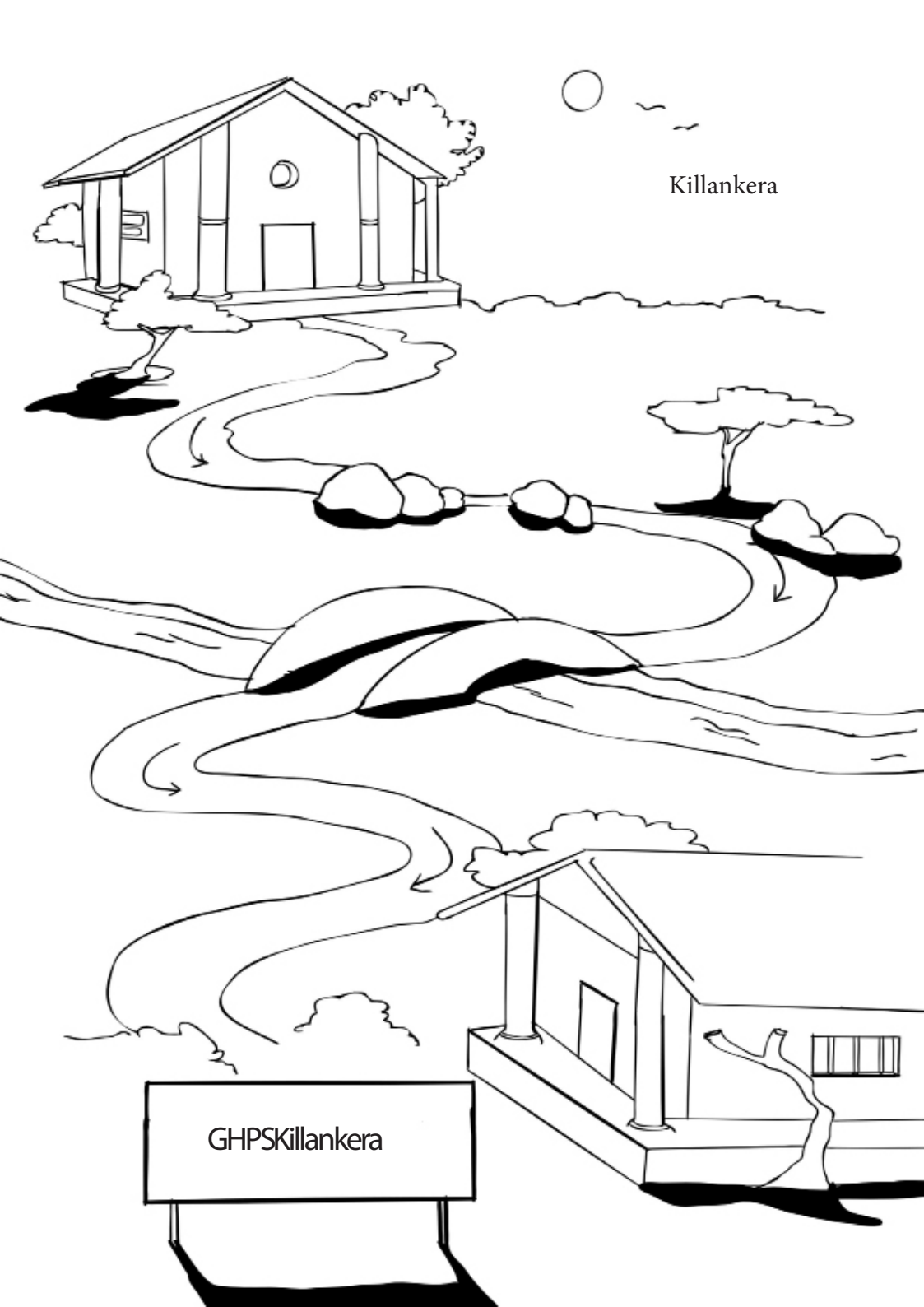


When we cycle, the axle of the motor is rotated and it can pump out water from the source

Soil Erosion

Portable sprinkler

Cycle producing electricity

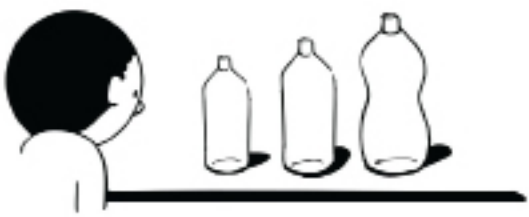

Killankera
GHPSKillankera

What have you made Bheemaraya?

Ma'am, our teacher had asked us to list down problems in our community

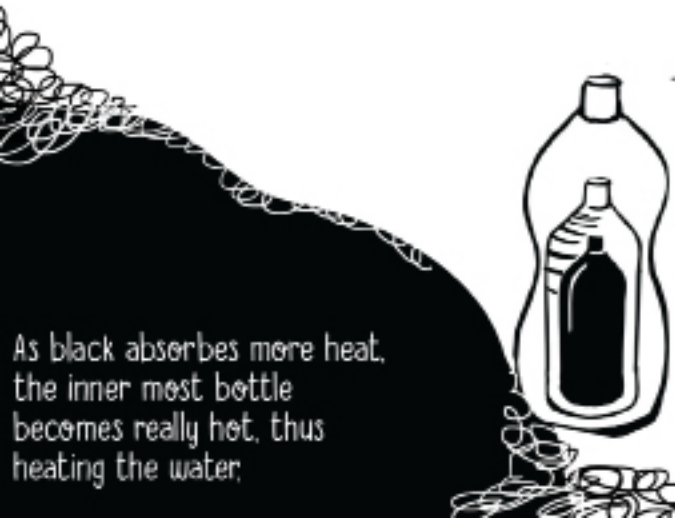
One of the problems which I listed was the water heating

We were taught that the black attracts more heat and I used that for my model



I took 3 different sized bottles and fitted one inside the other

I coloured the smallest one black and the medium one silver



I later fitted the bottles one inside the other and kept it in the sun. I filled the inner most with water.

As black absorbes more heat, the inner most bottle becomes really hot, thus heating the water.

Project done by Bhimaraya

In our agricultural field visit, the farmers told us that the wild animals spoil their crops

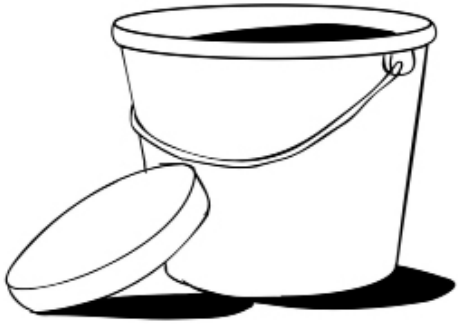
To solve this, I took some old glass bottle and tied some stones to the neck of the bottle.

And I hung these bottles to trees surrounding the farms.

Now, when the wind blows the stones hit the bottle and make sounds that scare the animals away.

Project Done by Parashuram

Our teacher asked us to notice the problems around us. I have always seen my mother struggling with washing so many clothes

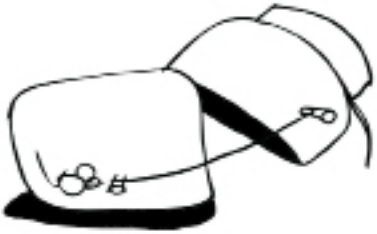


I took a bucket with a cover and a plunger. I made a hole in the cover and fitted the plunger in it

We just have to put clothes in the bucket and push and pull the plunger to wash the clothes.

Project done by Bhimaraya

And finally it stuck me



I made a mouse trap with a plastic jar and a rubber band. When the rat gets in for food, the rubber band is released and the jar gets closed.

Hanginggardens

Waytoscarewildanimals

DIY Washing Machine

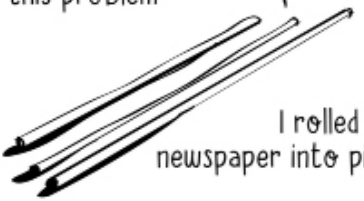
Mouse trapper

Project Done by Parashuram

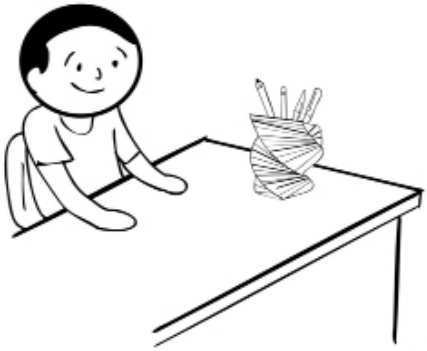
When we are working we usually misplace our pens and we are always looking for them

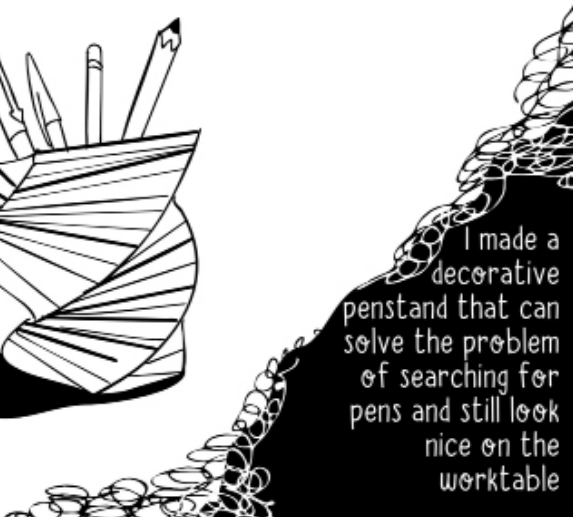
This even happens with our school teacher

I thought of reusing newspaper to solve this problem



I rolled the newspaper into pipes





I made a decorative penstand that can solve the problem of searching for pens and still look nice on the worktable

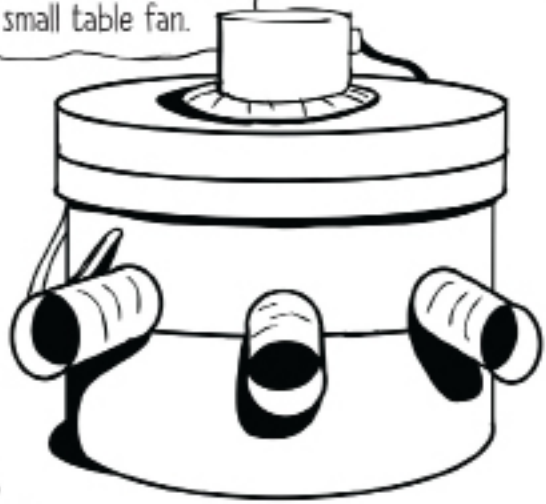
Project done by Pillingappa

It gets very hot in summers and it becomes very difficult to sit in class

So I thought of making a cheap air conditioner

I took a bucket with a lid and drilled holes in it and attached pepes in those holes

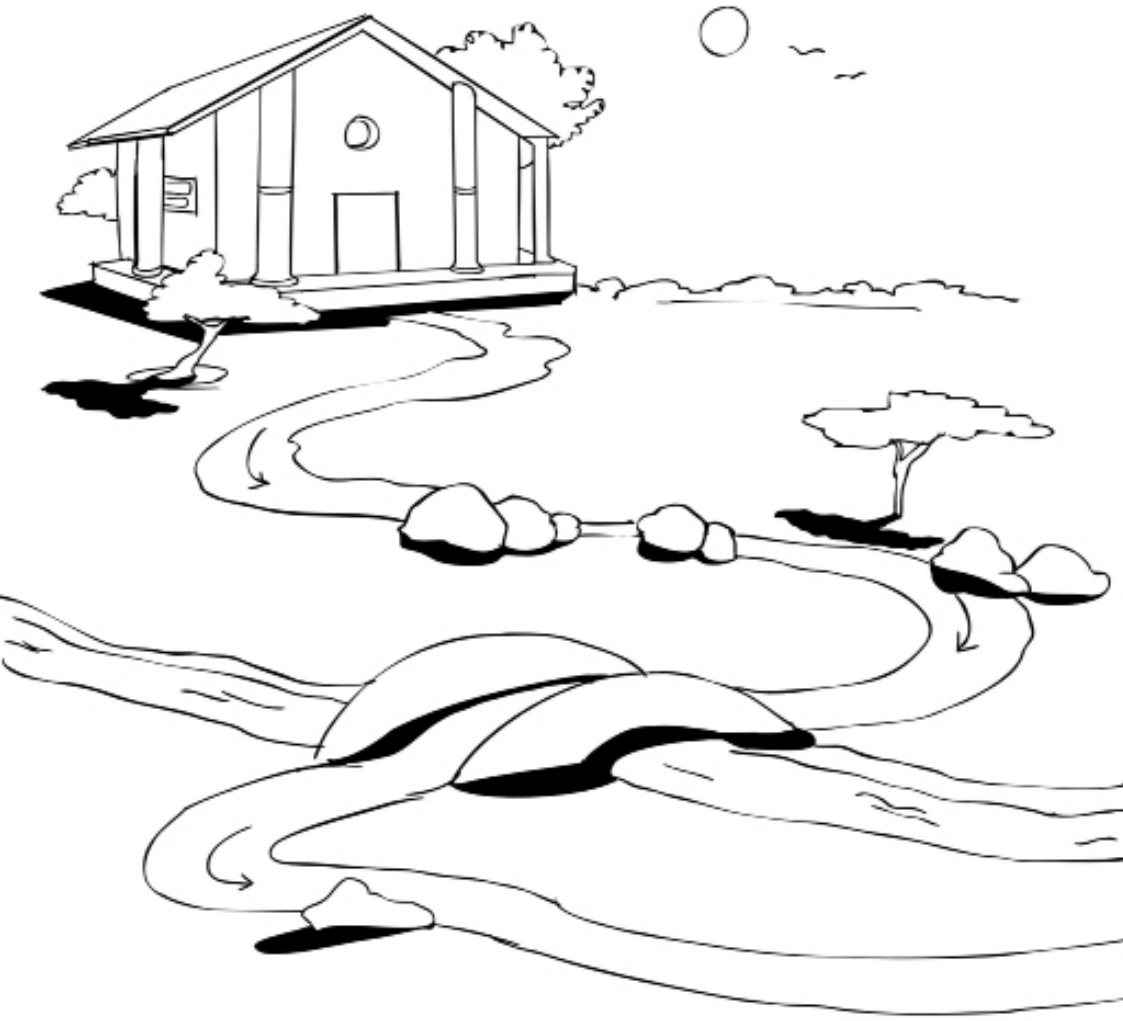
On the lid of the bucket, I fitted a small table fan.

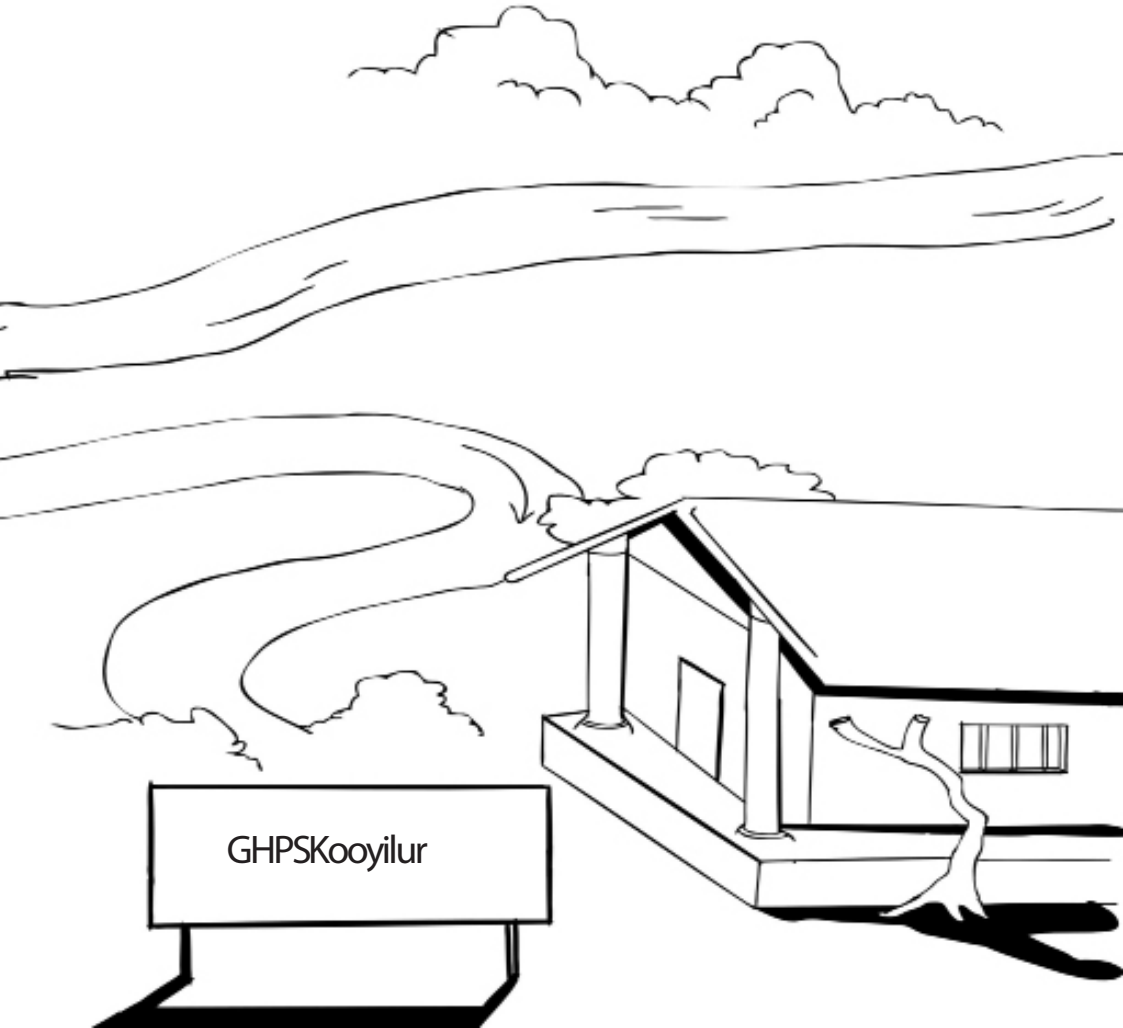


By putting ice or cold water in the bucket and turning on the fan we get cold air. This device works as a air conditioner.

Decorativepaperproducts

Cheap airconditioner




GHPSKooyilur

Project done by Chandramma & Tayamma

Our families have maize farms

The birds usually come and attack these maize fields and we have to protect the crops from these birds.

Our parents send us to protect the crops in the morning before school

Because of this we usually reach school late and are always scolded

To avoid this we used the silver side of the chololate wrappers and made boards out of it.

The boards distract the birds as the sunlight shines and reflects light.

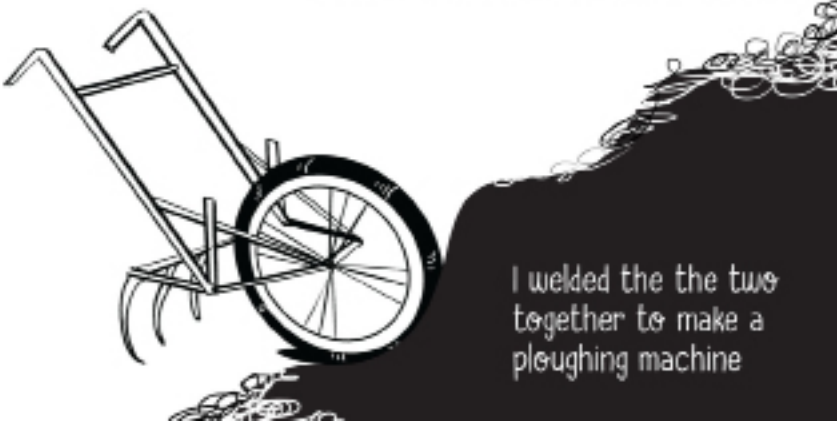
Project done by Devaraj

I was sitting with my friends and waiting for my uncle who was supposed to meet and talk about farming. We waited the whole day but he didn't come.

I later found out that he got busy with ploughing the fields and it took him the enitre day to do it.

we went to our teacher and he asked us to use the SCAMPER tool to come up with a solution

finally, I took a cycle wheel and welded a fork like structure to plough the fields



I welded the the two together to make a ploughing machine

A project done by Shankara

The farmers told us that the wild animals harm the farms at night

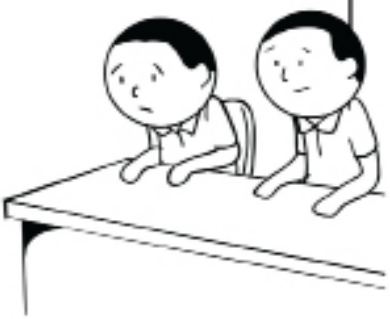
I discussed my thoughts with my friends and they helped me implement my idea

I took diwali crackers, mosquito coils and some ferns

I attached different lengths of mosquito coils on the rockets so that they blow at different times. Due to this, the animals get scared and run away.

Project done by Hanamanth and Yallappa

We saw our class teacher fan herself with a piece of paper because of the extreme heat



We spoke to each other and decided to make a table fan for our teacher

We took a motor, a battery and a bottle.

We cut the bottle in the shape of a fan, attached the motor to it and installed it on a stand

Our teacher is really happy now and uses this fan on the table.

Project done by Hanmantraya

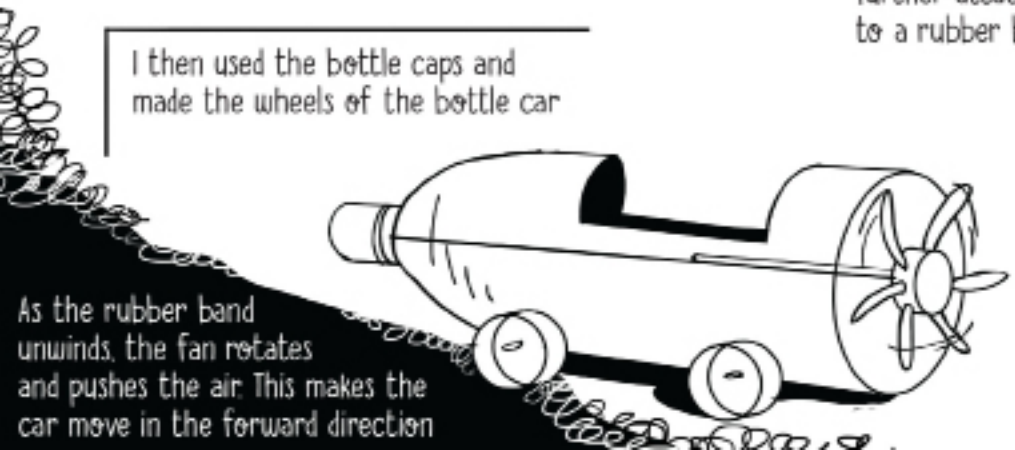
We learnt about potential energy and kinetic energy and our teacher asked us to apply it in a moving device.

So I thought of a concept and took 2 bottles, some bottle caps, a straw and a rubberband

I cut one bottle in this shape

I cut the other bottle in the shape of a fan and stuck it to an axle that passed through the bottle and was further attached to a rubber band

I then used the bottle caps and made the wheels of the bottle car



As the rubber band unwinds, the fan rotates and pushes the air. This makes the car move in the forward direction

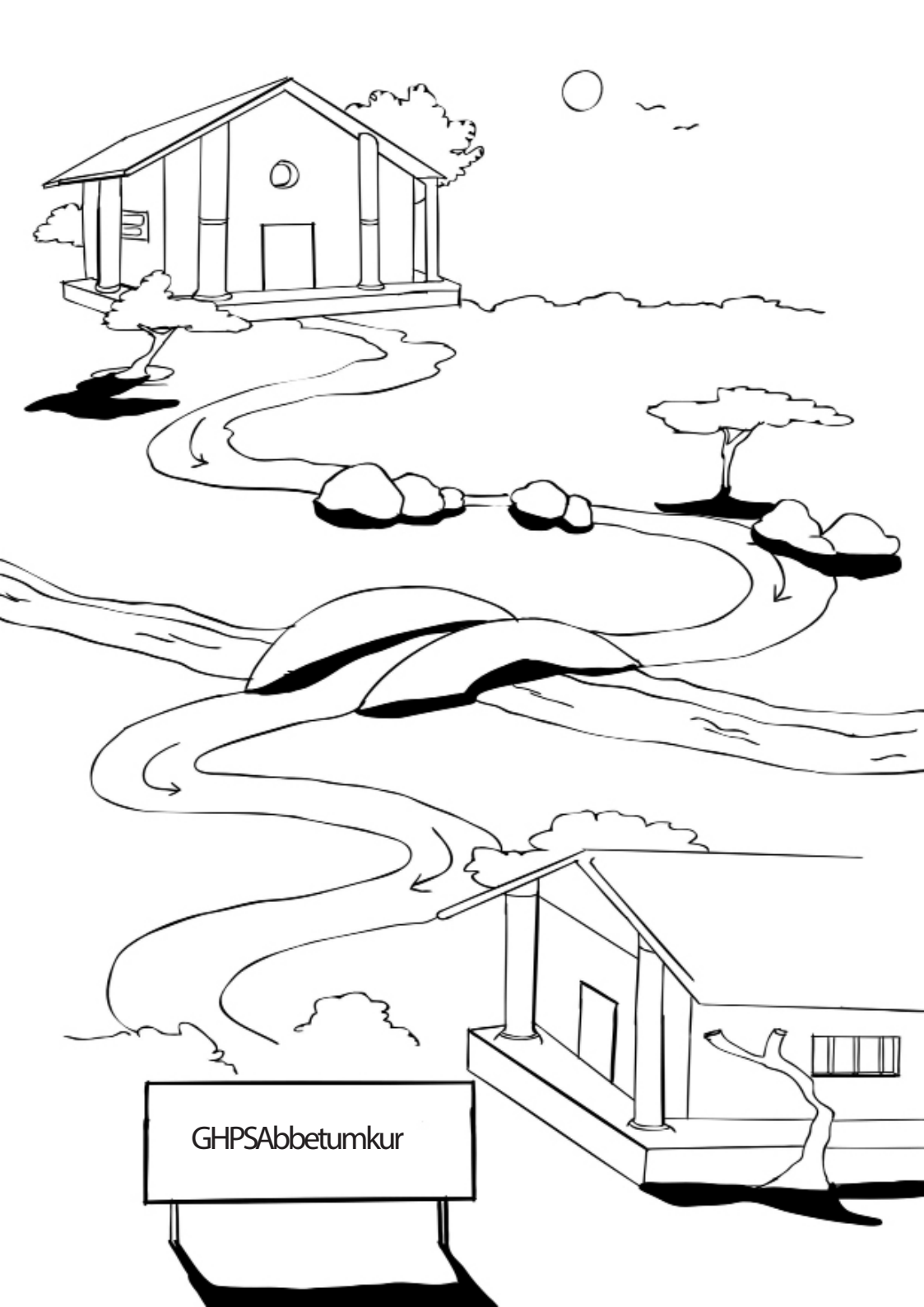
Protectingcropsfrombirds

Garden Plough

Protecting crops at night

Table fan

Rubberbandcar


GHPSAbbetumkur

Project done by Chandrakala and Ningappa

We have always wanted to make things which cause no harm to the environment and are still very useful

We made a long list of things that harm the environment.

finally we decided to make an affordable and environment friendly refrigerator

We took an earthern pot, a broken pot and some soil

We made a setup where we packed the pot with mud and enclosed it in the broken pot. This set up increases the shelf life of the vegetables

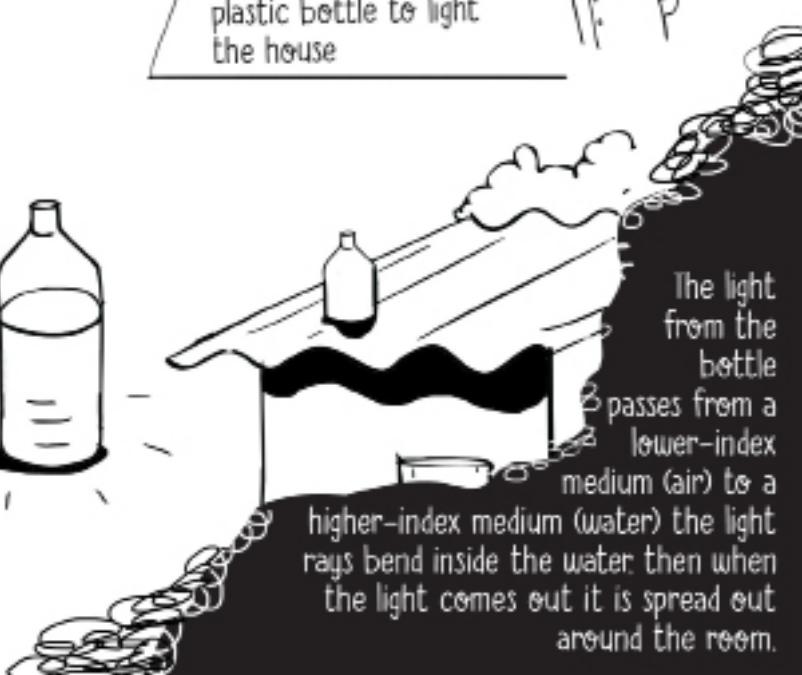
Project done by Bannibasava

We have a lot of metal sheet houses but unfortunately these houses don't let the light pass through them

We need to light a bulb even during the day

So I thought of using a plastic bottle to light the house

The bottle filled with water refracts light. So I placed the bottle half outside the roof and half inside the house.



The light from the bottle passes from a lower-index medium (air) to a higher-index medium (water) the light rays bend inside the water then when the light comes out it is spread out around the room.

There are too many mosquitoes around us these days and they cause really dangerous diseases

I wanted to do something about it

Malaria is endemic in 91 countries, with about 40% of the world's population at risk.

I cut a plastic bottle and added water

Added 10 tea spoons of sugar in it

And I inverted the upper half over the base

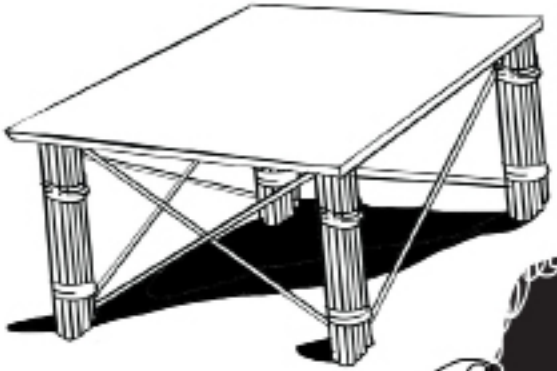
As soon as we add the yeast in the bottle, carbon dioxide is produced, the mosquitoes are attracted to the bottle and get trapped in the solution.

A project by Mery and Bassamma

In our class, our teacher asked us to make things from sustainable materials

We discussed to take newspaper as our material and told our idea to the teacher. He really liked it.

We took lots of old newspapers and rolled it into strips



We joined these strips and formed the legs of the table. The top was made with a wooden piece.

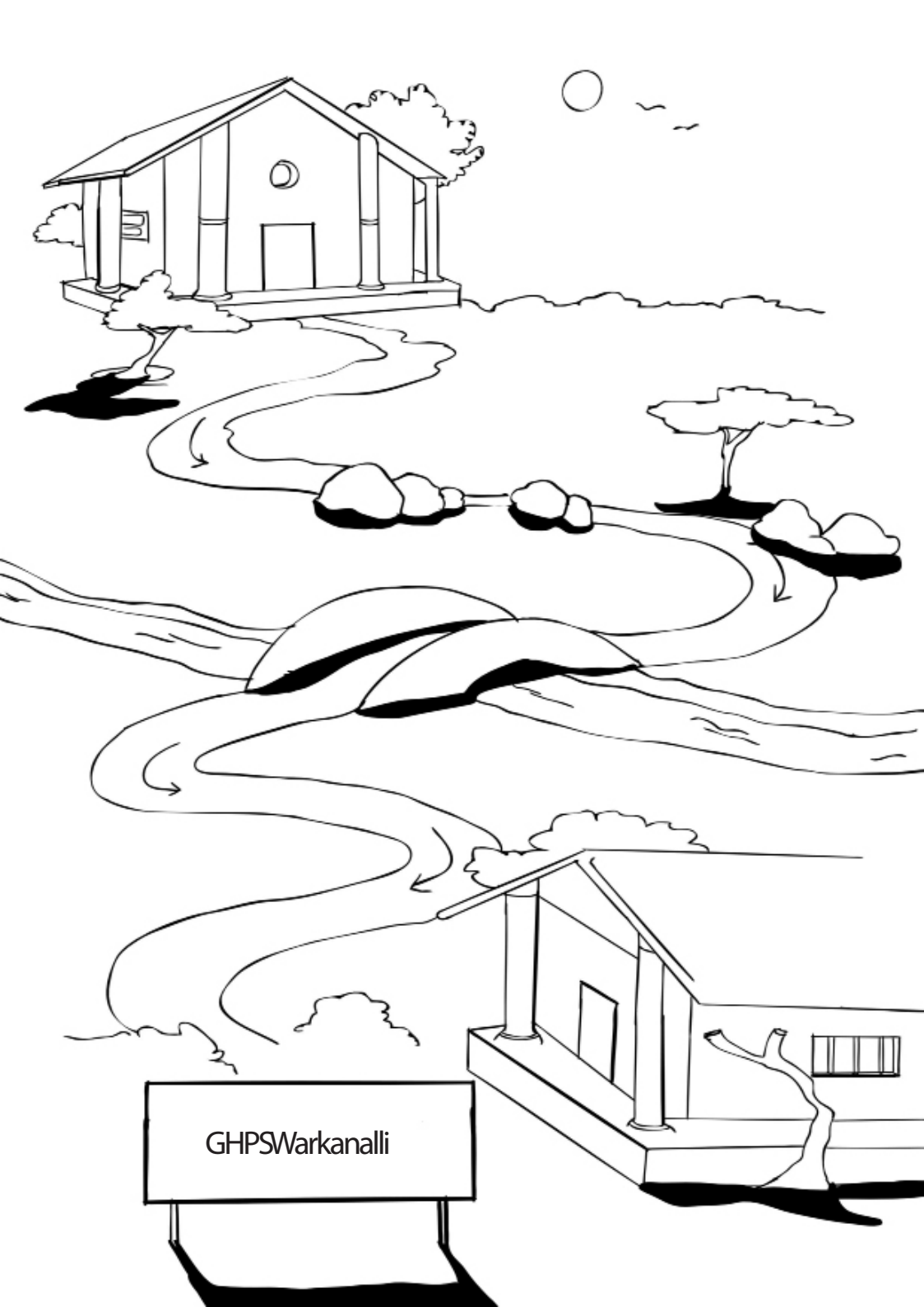
This table is as strong as a wooden table.

Lightmechanismforpatrahouses

CheapRefrigerator

Mosquitotrapper

Paper table

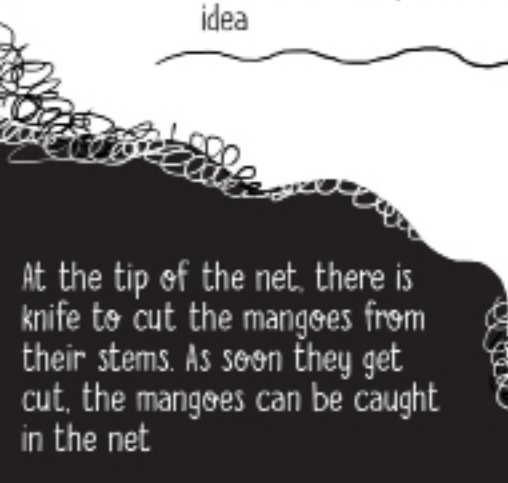

GHPSWarkanalli

What have you made Mallapa?

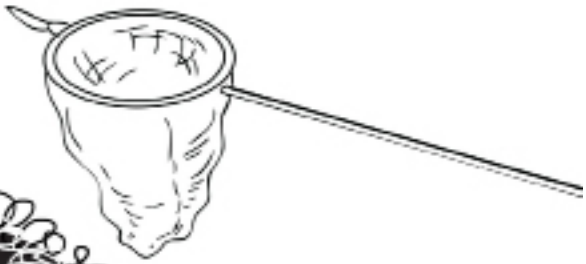
There are some mango trees around our area. But mangoes on the trees usually get over ripe and are spoilt when they fall.

So I spoke to my teacher and we came up with an idea

I took a stick, a net and a knife



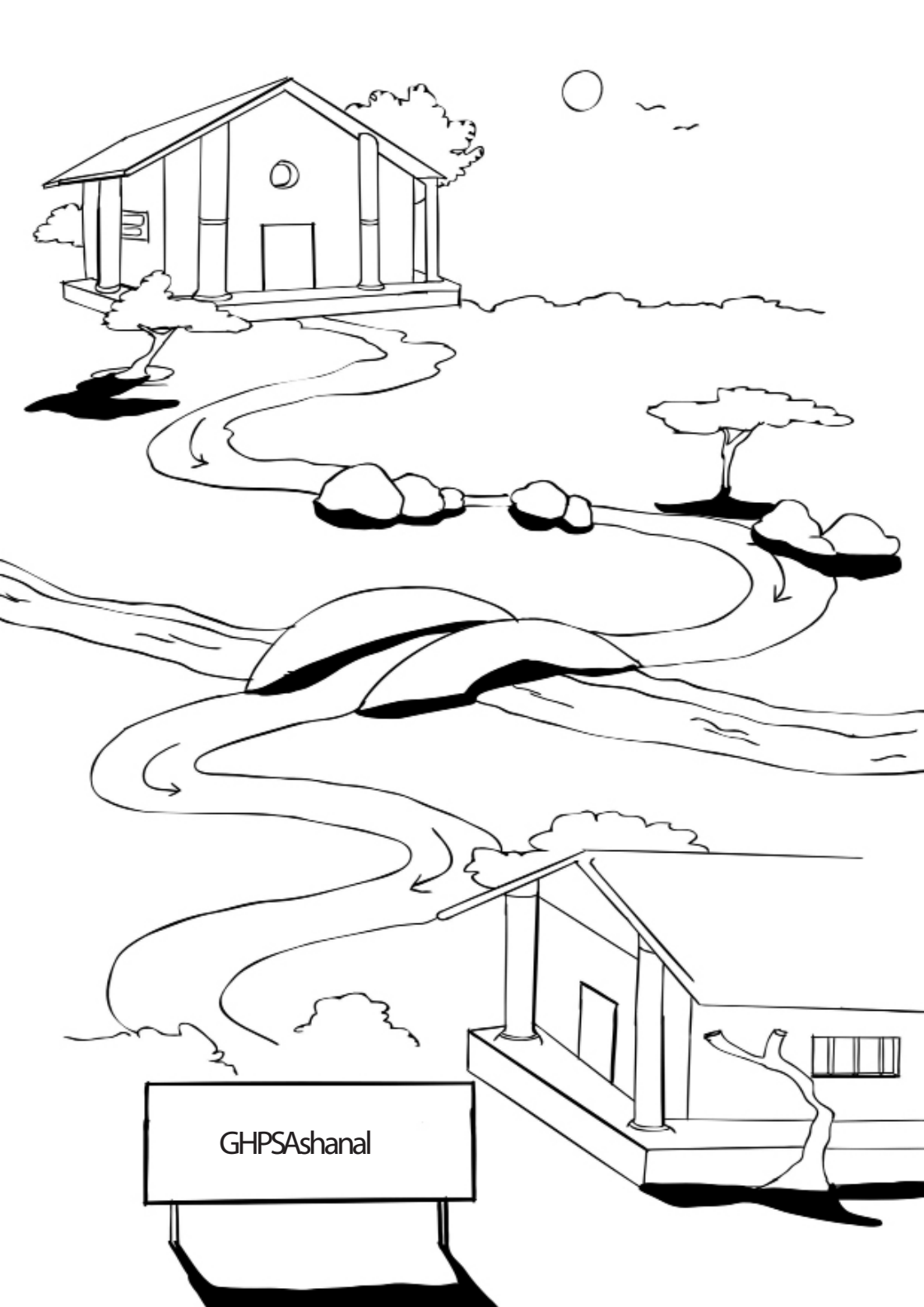
At the tip of the net, there is knife to cut the mangoes from their stems. As soon they get cut, the mangoes can be caught in the net



Project done by Yuvaraj

Mangoremovingnet

Multi-utilityFloorcleaningdevice

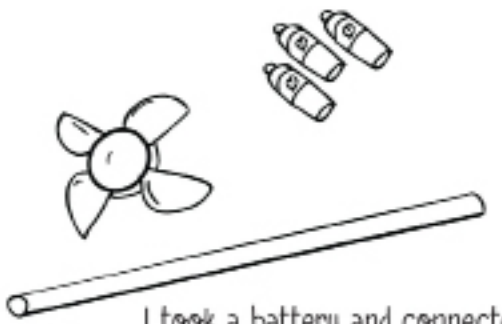

GHPSAshanal

Project done by Roopesh

In our village all big farmers harvest their paddy with big machines and all small farmers have to do it with their hands as they cannot afford machines

So the farmers have to get extra labour do to and it costs a lot to them

I discussed this with all my friends and came up with a cheap and easy paddy machine



I took a battery and connected it to the fan and a blade and attached this set up on a rod

The blade and fan helps to harvest the paddy neatly and One person can do 5 people's work

Project Done by Vishwanath

We have a kitchen garden and we have taken the responsibility to water the plants daily.

But the plants dry up really soon and all the water is not absorbed to the best of its ability

I wanted to solve this problem and I did this using a water bottle

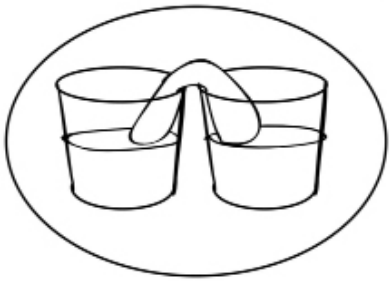
I punchered small holes in the bottle for the water to flow slowly

I dug a hole next to the plant and fitted a bottle in it

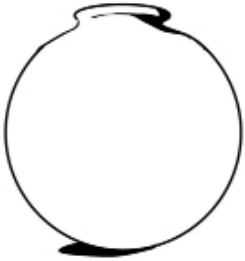
We can now fill the water once a day and the plants can be watered gradually throughout the day

Project Done by Bhimaraya

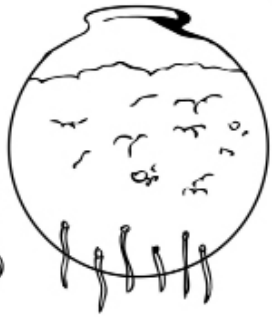
We had a demonstration of the capillary principle in our class



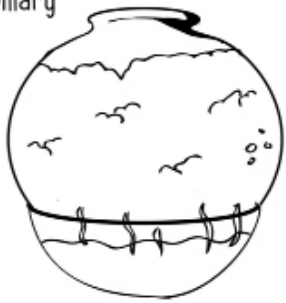
And I thought of solving the problem of gradually watering the plaints using that principle



I took a earthern pot and a bowl and filled the pot with some mud and seeds



In the lower bowl I filled water. The water is taken up gradually through the threads by capillary principle.

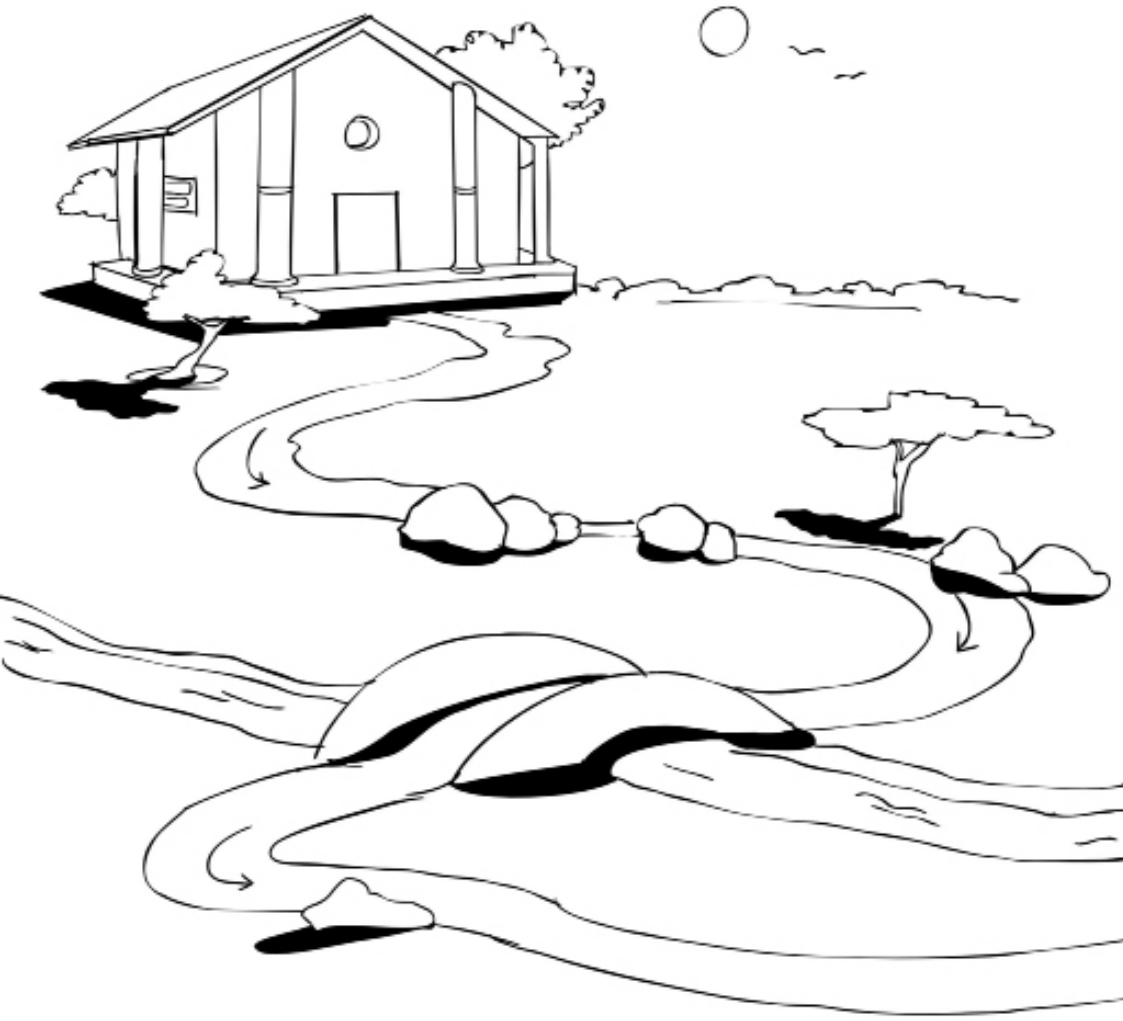


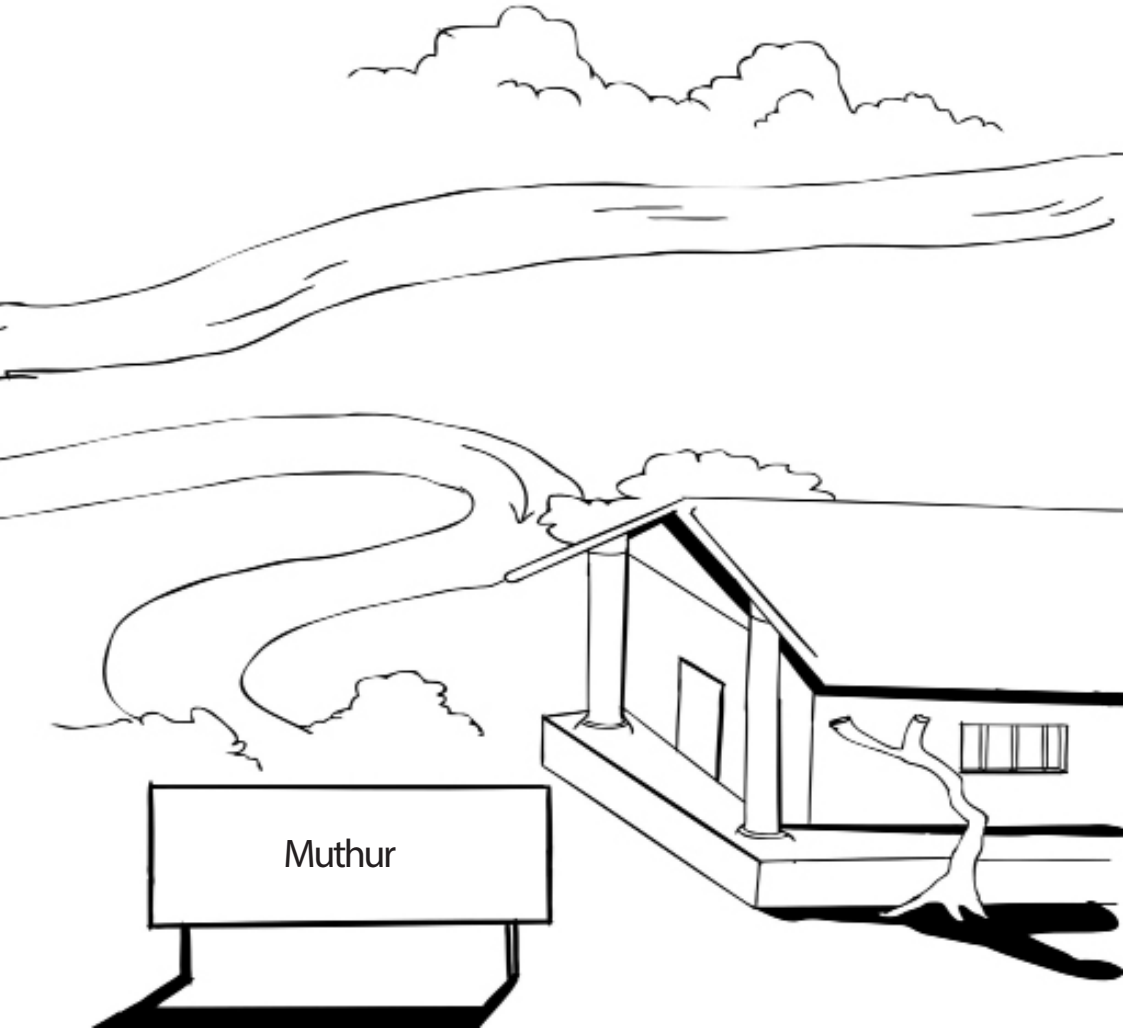
Capillary action is the ability of a liquid to flow in narrow spaces without the assistance of, or even in opposition to, external forces like gravity.

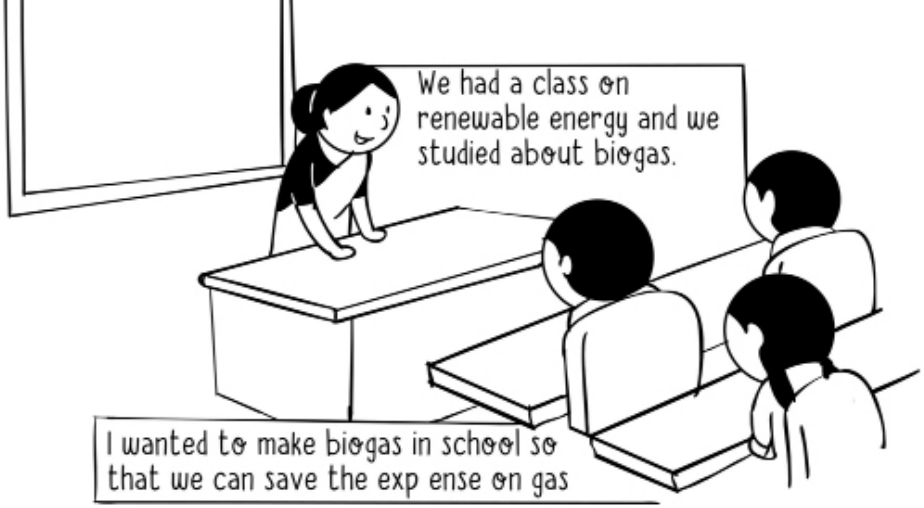
GrasscuttingMachine

Slowwateringplantsusingplasticbottle

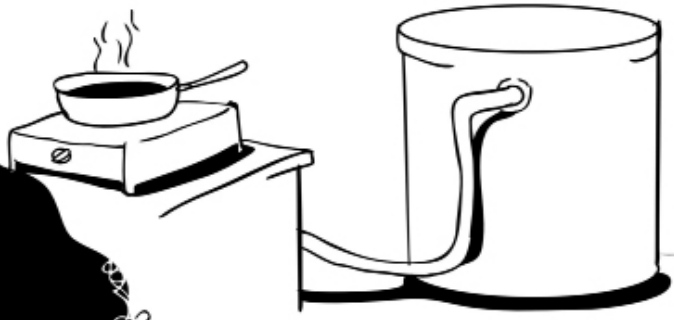
plantwateringusingcapillaryaction




Muthur



After a week, the drum produces methane gas. I transfered the methane to the kitchen through a pipe

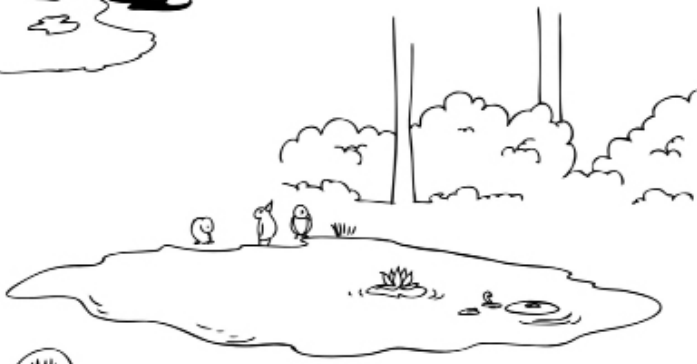


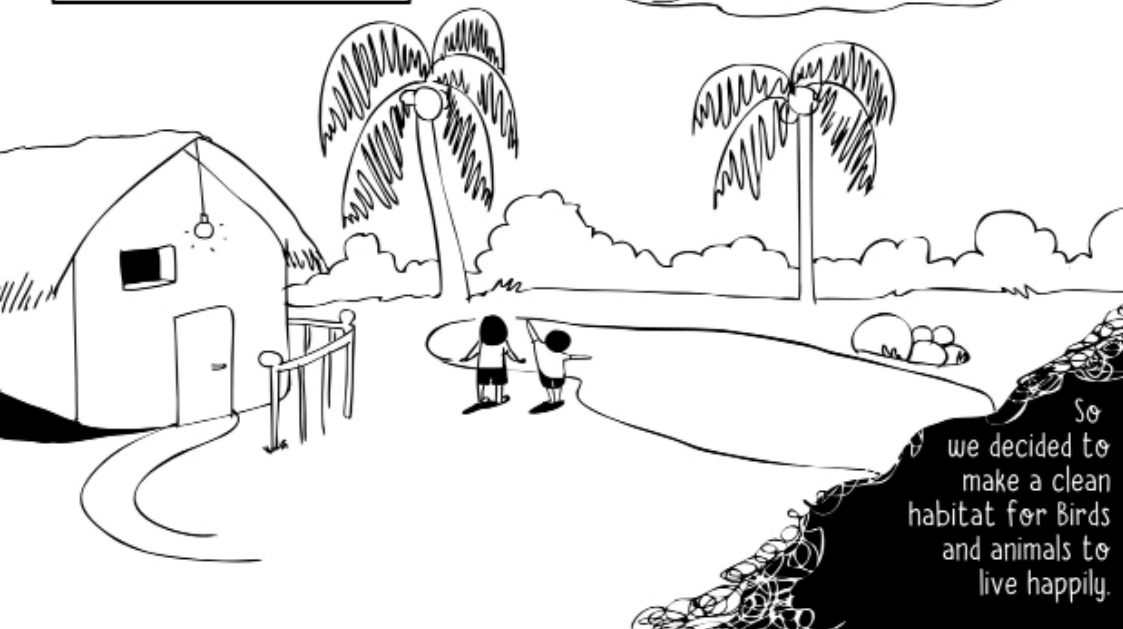
The methane produced is enough to boil milk and make tea in school on a daily basis.

Project Done by the entire class

Ma'am our teacher took us to a field trip and there we got the idea of our project

The birds and animals didn't eat the leaves around the dirty habitat and they always prefered staying around the clean pond.





Project done by Madan

went for a visit to a brick factory

There we realised that even we can make our bricks easily

We took different types of soils

We made different batters, understood the properties of different types of soil

The bricks that were finally made were rugged and can be made easily by everyone

Project done by Sudeep

We waste a lot of water while washing plates and this had been my concern for a very long time

To do something about this, I made a drum in which we can wash our plates.

later we thought of using this water for drip irrigation in the fields adjoining our school

Biogasmaking

Reusingwater

Understandingthecleananddirtyhabitat

Brickmaking

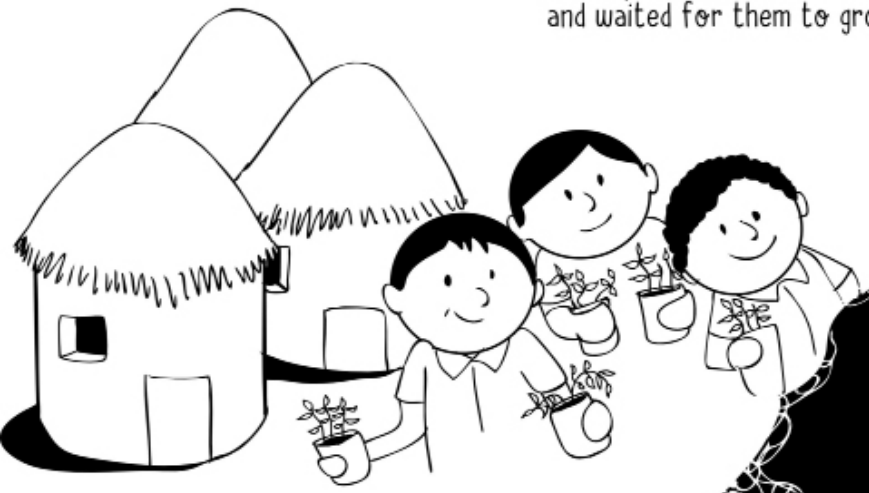
Project Done by Kumar

Our teacher mentioned in class that the government is distributing folic acid tablets in government schools

That meant that there is deficiency in our villages and I wanted a way to remove the deficiency of iron in our villages without the help of medicines

I took Iron rich plants and some seeds

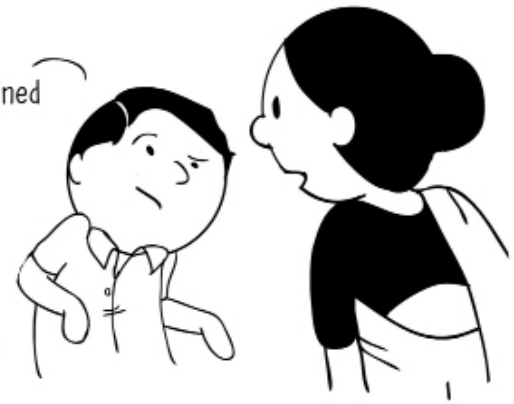
I mixed them into plastic pouches. Then I put this into the soil and waited for them to grow



These plants were rich in iron and we distributed it in the village so that people can consume vegetables that can substitute folic acid tablet

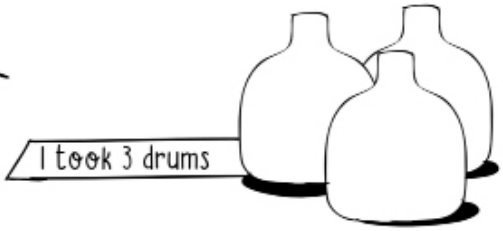
Project done by Estharala

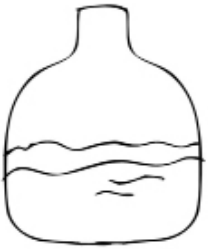
During rains, our teacher explained me the cycle of water.



He explained me and asked me to understand it more through a set up that mimics a water cycle

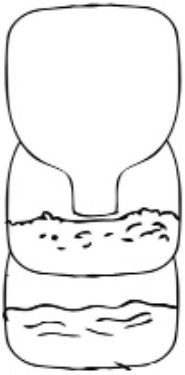
I took 3 drums



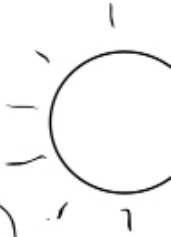


In the bottom one I put water

In the middle one I put soil And the top one was to cover



I connected the bottom one to the middle one with threads.



Using this we can understand the cycle of water easily

Iron rich plants

Water cycle

SELCOFOUNDATION

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