

When our principal told us about DFC, I got really excited and searched for things that I can change in our campus. Our school has a big playground full of trees. Suddenly, the idea of heating water by using things that are being thrown away popped in my mind. So, I chose a place in my school where the trees do not cover the sunlight.

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But first I needed to try it on something smaller so I made a small version of my water heater by using drinking straws and coloring it black. When it worked I got motivated and started the big project.

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When I told my principal, teachers and • parents, they encouraged me and motivated me. I taught I can use black tubes that are being thrown away as the main material of my project. And to use other things too that help me make my water heater this way I will reduce pollution and heat water without using electricity.

I started my project by talking to the owner of the tube factory. After telling him the purpose of my project and how it works he was happy to help us by giving us the leftovers of their tubes. Anyways, they would have caused pollution if they were left there since plastic need many years to decompose. When I got the tubes, I started the real work. I made openings from each side and put screws in them so that latter they will serve in connecting the tubes... Sooo do you think rockets only serve for killing people. Yes you do but take a look. See I used the end of a rocket which I found on the road to close one end of the tube. Yeah it depends on the way of the usage. And I used ice bucket cap to close the other end I found this from someone whose ice bucket was broken and was going to throw it away. I used some silicon to fix them and some metal wires.

The main heater is made and I needed to try it before moving to the next steps. So, I filled it with water and left it under the sun. I closed one end with a spoon and filled the tube with water.

- Are you interested in the result?
- Finally the result....
 - and....

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 Wowww 41.7 degree celsius. Only with 3 hours under the sun can you imagine how many degrees it will reach if left all day long under the sun. The main project is over . These steps are optional just to keep the warmth of the water last longer. I went to a T.V shop and asked the owners if they can give me the protection case of the T.Vs that they are going to throw away after explaining to them my project and they agreed. I used the cases and the plastic bags

to cover the tube.

Then I made a case by using the wood in our backyard and put the cases and covered it with black plastic bags on it and covered and put the tube in it and cover it with the plastic bag and made openings so that later we can connect it

And finally by the help of my father connected it to the school.



- You enjoyed my presentation didn't you and thought that it was easy to make it but let me inform you about some difficulties I faces:
- First I found some places in the tube which had lesions and the water was going out so I used silicon to fix that places.
- Then the school's kitchen had only one stream and I didn't want any burning cases so I had to put a second stream for hot water so that we can use both hot and cold water.

This way we can manage to have hot water with no expenses at all and you will reduce pollution I am teaching the students how to make one at their houses and I will make ones for old people who can not do it by themselves . And I started making for my neighbors. And my school will post it on their facebook page to spread the news. If any of you is interested you can ask for help from me and I will be very glad to help you.

• Thank you for listening!!!!!

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