

Dorae-Cleaner

For a Greener Earth





Sam - Khang - Son - Duc Anh - T. Khoi - M. Khoi

Team 12184Z
Hanoi, Vietnam

DORAEMONSTER



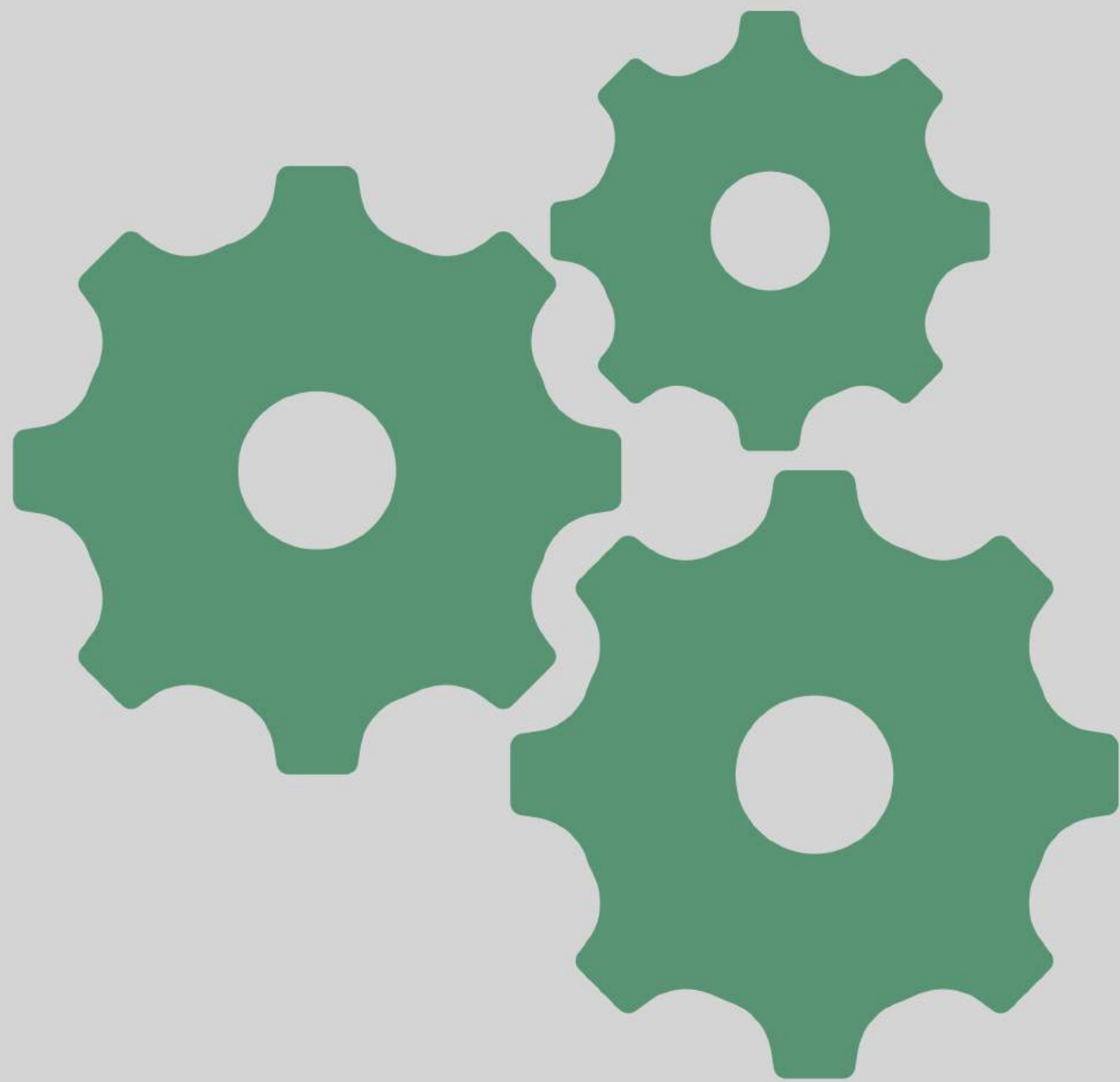
Why we choose this topic?

Our Earth is getting more and more polluted with more trashes everyday. We need to take actions to save our Earth!!!!

We think that collecting, sorting and recycling trashes can help our Earth become cleaner and greener. So we choose cleaning companies and cleaning jobs to learn how Engineering Design Process can help us to collect and sort trashes more quickly and easily.



ENGINEERING DESIGN PROCESS



Many people may think that Engineering Design Process isn't used much in the job of trash collecting and sorting. However, applying EDP can be quite beneficial in waste management. It can help collecting and sorting trashes more quickly and easily. Let's learn how EDP is applied in this field through our interviews with the Founders of two environment organisations and a cleaning lady at TH School.

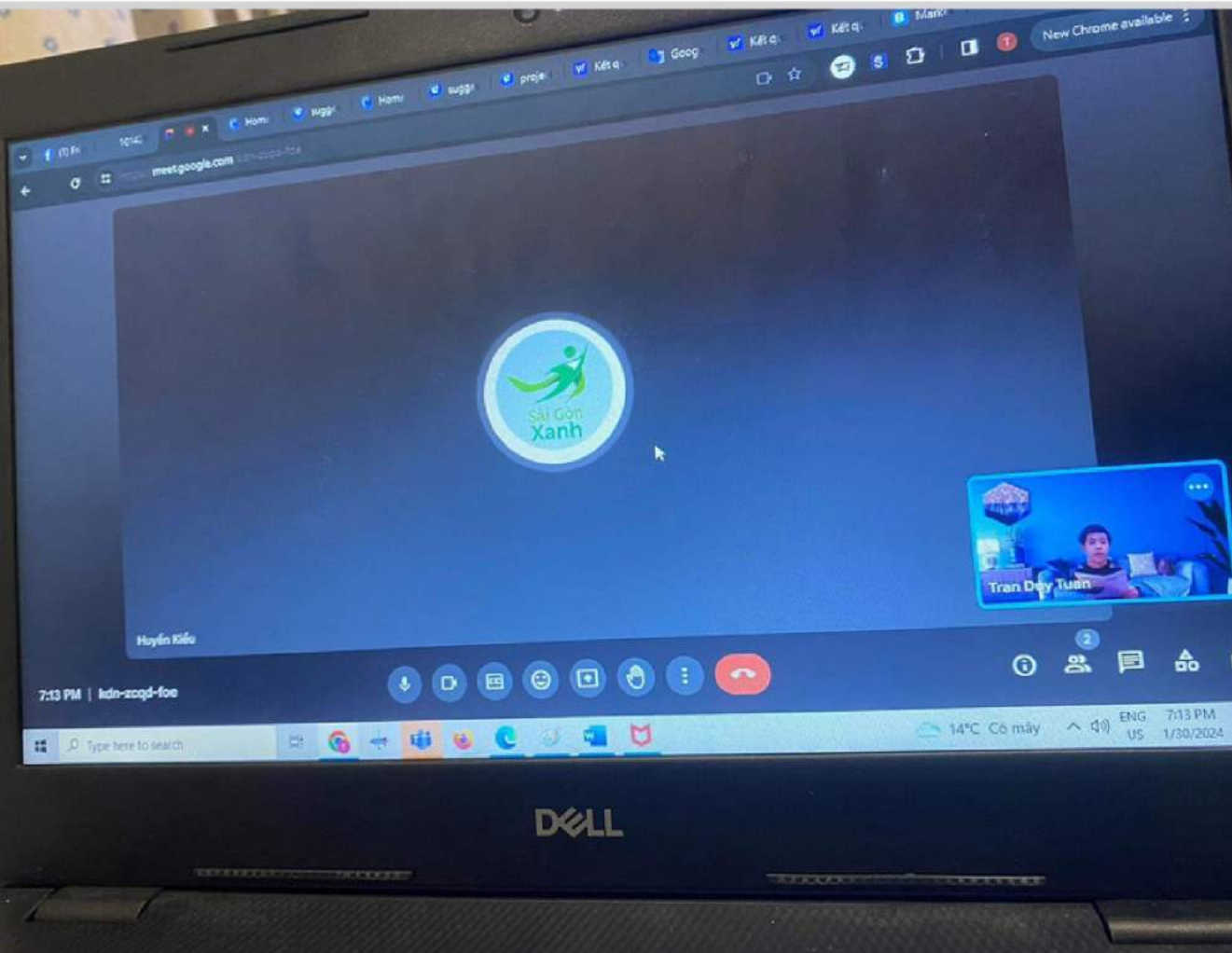
INTERVIEW WITH MR. NGUYEN LUONG NGOC FOUNDER: SAI GON XANH



Saigonxanh is an non-profit organization with mission to improve the environment in Vietnam. Saigonxanh initiate many projects to collect trashes and raise people's awareness in protecting the environment.



SAIGONXANH



T. Khoi interviews
Mr. Nguyen Luong Ngoc

Saigonxanh has many environment activities like clean up trashes in many dirty channels around Saigon. Their volunteers often have to collect and sort a very large amount of trashes. When they want to solve our problems, they apply EDP. For examples, they are working with young students at Da Nang Technology and Science College to design garbage boats to collect trashes in those channels.

T.Khoi: If your organization have robots, do you think it is useful?
Mr. Ngoc: Yes, of course. We can use robots to pick trash under the channel so the volunteers do not have to work in a bad water condition that may affect their health.

INTERVIEW WITH MR HOANG QUY BINH FOUNDER: GREENLIFE

Mr. Binh's inspiration to start GreenLife in 2016 was seeing trash bins full of recyclables mixed with the non-recyclables, everyday he walked out of his house. With this project, he hopes to promote environmental-friendly habit of Vietnamese people by encouraging people to classify their waste at home and exchange recyclable waste for lovely little ornamental trees.



GREENLIFE



According to him, he uses EDP in forming the process of collecting and sorting trashes. In our events, they often receive different types trashes and we need to classify them smartly. To lessen the classification work, he designs different waste divisions so that people can come and classify trashes by themselves with help from GreenLife volunteers. He also uses EDP in getting more people interested in recycling and come to GreenLife events and expanding those activities to many other cities in Vietnam.



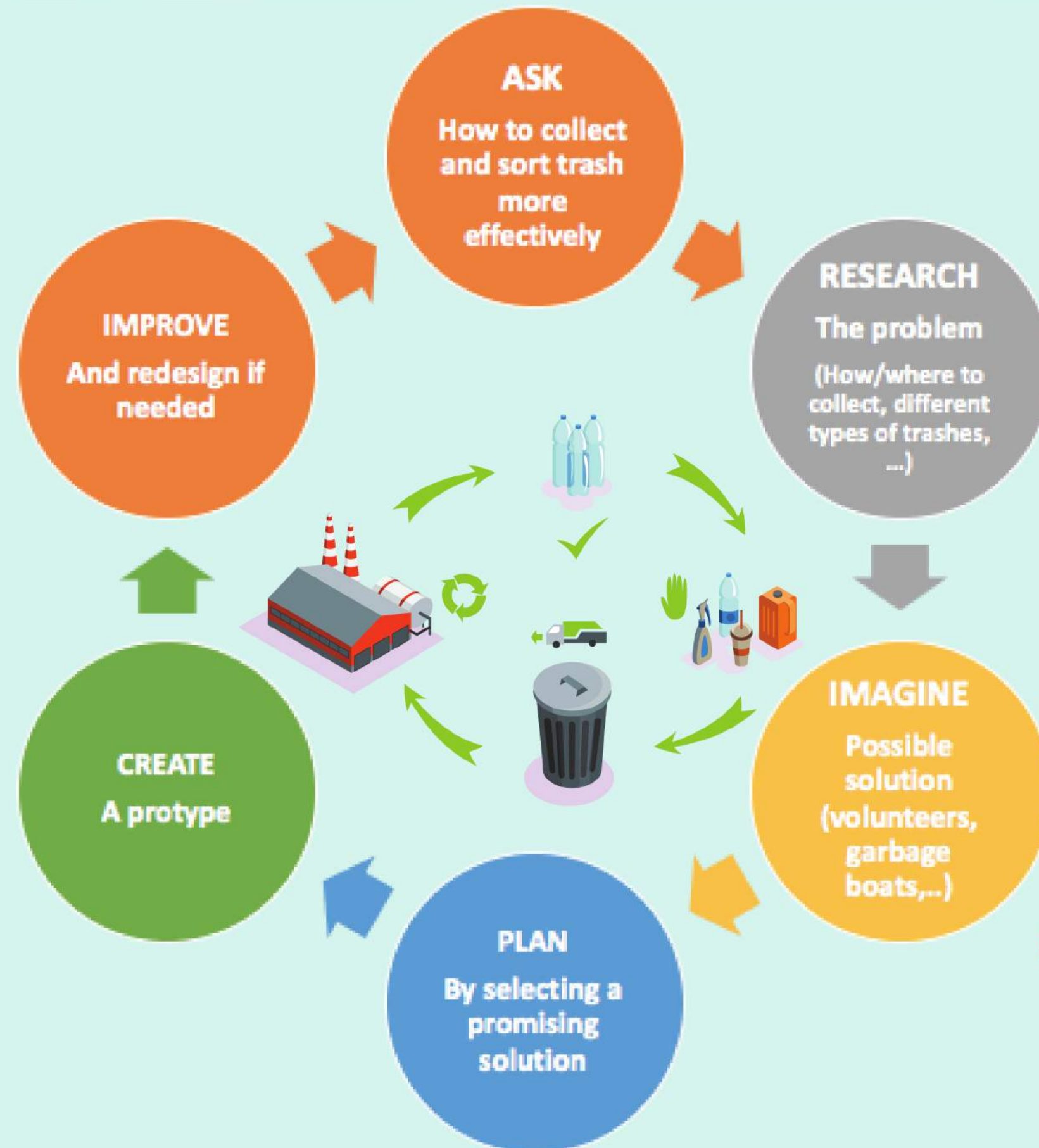
INTERVIEW WITH MS. LUONG CLEANING LADY AT TH SCHOOL

We interview Ms. Luong, who has worked as a cleaning lady at TH School for 5 years. Everyday, she collects trashes from trash bins and cleans the public spaces, like school library or canteen. Most of the trashes are paper and plastic bottles, which are recyclable, At TH school, students learn how to classify those trashes, which help lessen her work.

Ms. Luong tells us that she will enjoy having a robot to support her work. If there is robot to help her collect and sorting trashes, she can have more time to clean public spaces at our school, providing our students a better environment to learn and enjoy different activities.

Son interviews Ms. Luong
at school's canteen



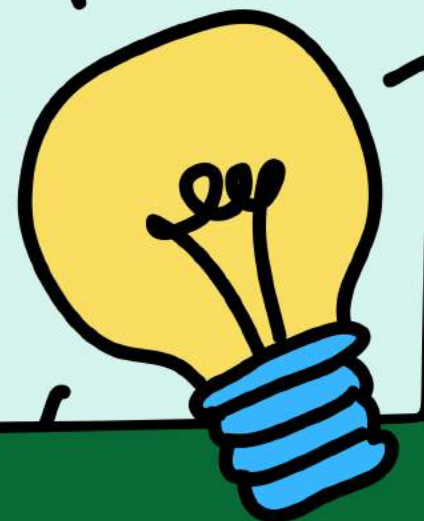


Engineering Design Process of Collecting & Sorting Trashes

and it is very similar to the
EDP of building a robot

**Everyone is working hard to collect and sort trashes,
and they want to have a robot to help**

**Can our
robot help
them...?**



Yes, of course!!!!

First, we will tell people to use trash bags of different colours to classify trash.



**Green for
paper and
plastic wastes,
like
newspapers,
bottles,...**



**Purple for
organic wastes
like leftover,...**

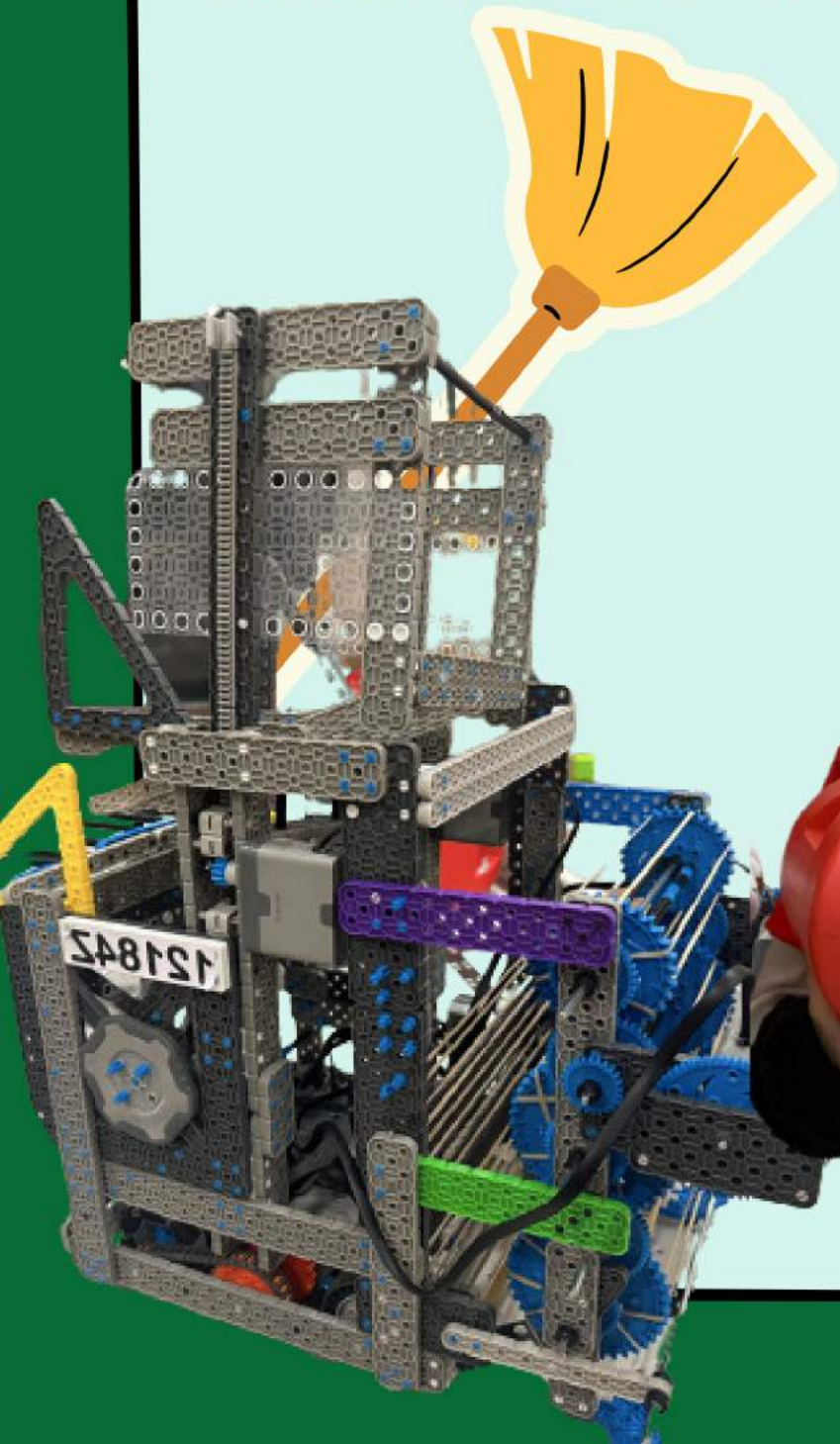


**Red for
electrical
wastes like
battery**



Yes, of course!!!!

Then, our robot can collect them just like they collect green, purple and red blocks in the competition field and use colour sensor to sort them into different trash bins.



This is colour sensor we can use, so that our robot can sort trash bags by colours

Yes, of course!!!!

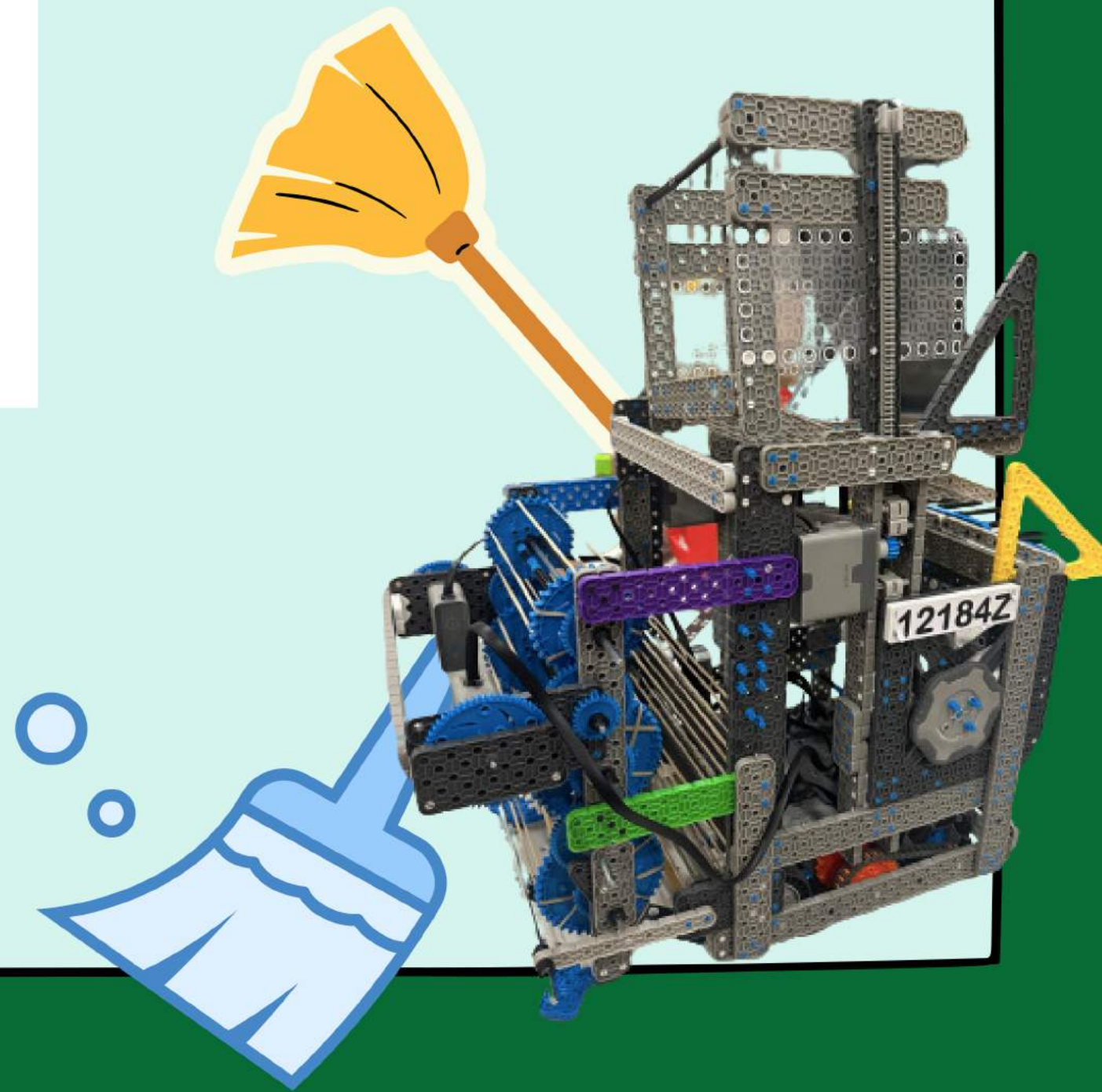
We can also use autonomous code and distance sensor so that our robot can come to collect trash automatically.



```
when TouchLED10 pressed
  spin spin reverse Spin the capture mechanism backwards.
  drive forward for 350 mm Drive forward 350mm.
  turn right for 10 degrees Turn right 10 degrees.
  drive forward for 130 mm Drive forward 130mm.
  turn right for 32 degrees Turn right 32 degrees.
  drive reverse for 70 mm Drive backwards 70mm.
  spin elevator forward for 1750 degrees Lift elevator mechanism by 1750 degrees.
  spin elevator reverse for 1750 degrees Lower elevator mechanism by 1750 degrees.
  drive forward for 200 mm Drive forward 200mm.
```

This is distance sensor
We can code so
our robot can go around
and collect trashes

We can write
autonomous code for
the robot come and
collect trash by itself



#How VEX Robotics competitions prepare us for future careers.

#1. VEX Robotics competitions help us improve our personal skills. We learn how to do teamwork. When each team member has their own jobs and deadlines, if one does not give their work in a limited time, the next person can not finish work. So, it teaches us to have responsibility with our jobs and supports others. Also, we can improve our creativity. Everyone needs to think, share their ideas with the team and listen to everyone's ideas. After putting everyone's ideas together, fixing problems in them, we can take out the best ideas.



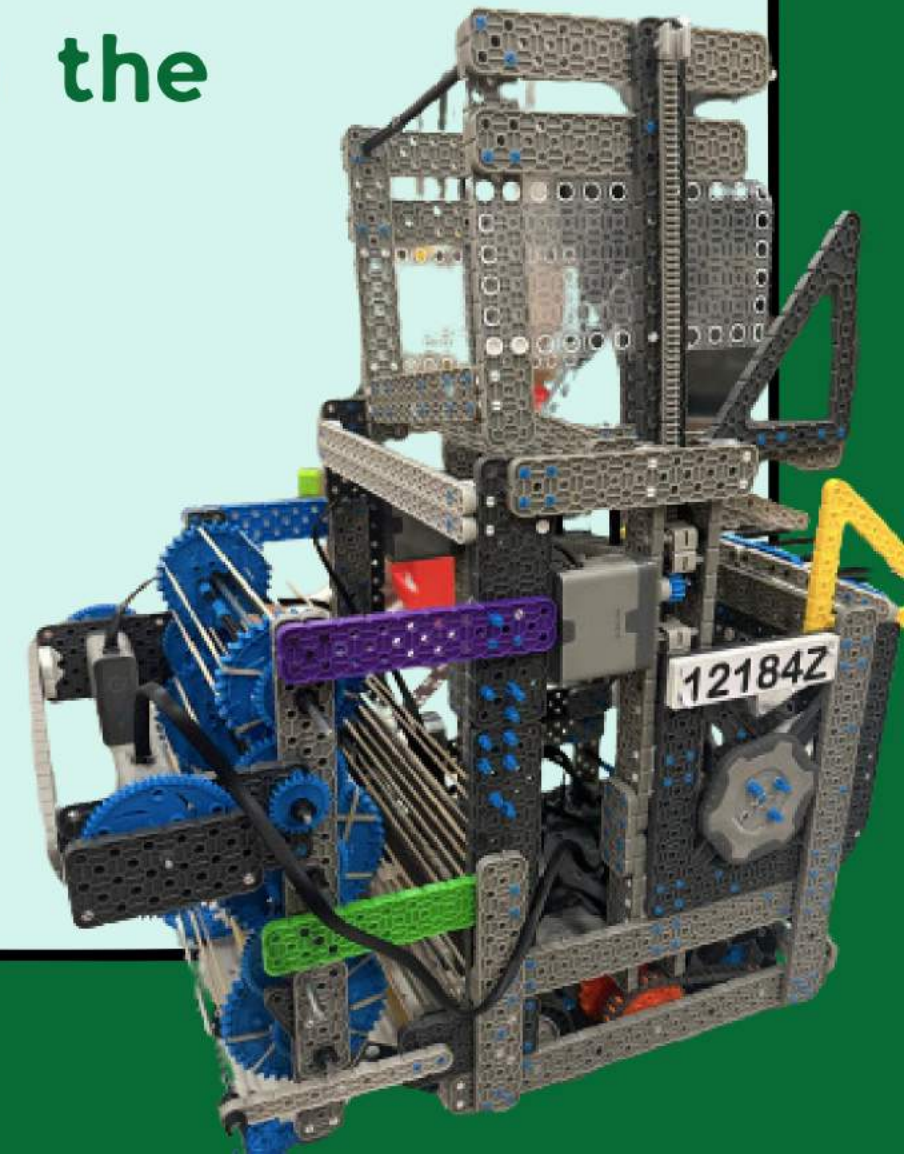
#How VEX Robotics competitions prepare us for future careers.

#2. The competitions help us have more knowledge about technology. Because we need to build and program our robot so it can work smoothly, we must learn . A robot can do many things that human can not do like exploring the ocean, volcano, Mars, and many more. Sometimes we ask: “Why is robot, not human?”. The answer is very easy as the robot is never tired and it can work in a polluted place. The robot is something very modern, if it is coding right, the robot can do things with no mistakes and high quality work.



#How VEX Robotics competitions prepare us for future careers.

#3. Because we join as a team, VEX Robotics competition helps us to have more friends. We can have more friends from different schools (like 6 of us, we come from 4 different schools). Everyone has their own talents and we can learn from each other and support each other in the future if we have something very hard to do.





We have great fun
when we learn together



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Thank you for reading!!!

