TSTS (Tasmanian Science Talent Search)

Water Warriors

Ignatia, Laila, Payton

Grade 3-4

Floating below the surface

Safety list

We concentrated carefully when using the scissors.

We used the hot glue gun carefully with the cotton gloves.

We used the Stanley knife safely and had teacher's supervision in case anything happened.

We used the silicon gun carefully with adult supervision.

Acknowledgments

. Miss Dick for giving us feedback

. Neal (cargo container expert) for coming in, talking to us about shipping containers and answering our questions

. The TSTS websites for helping us know what to do

. Our group for encouraging each other.

. Mrs JL for helping us out with resources to build our modal.

Sources

https://www.youtube.com/watch?v=Ys5C-hTrtEs

https://www.youtube.com/watch?v=LKon0l5hq7s

https://www.bbhttps://www.youtube.com/watch?v=Q8r8a8_GtG0

c.co.uk/newsround/30727805#:~:text=For%20a%20ship%20to%20float,more%20water%20it%20pushes%20down.

https://www.youtube.com/watch?v=_UjAxuSuLIc

https://thekidshouldseethis.com/post/how-are-shipping-containers-made

https://www.springwise.com/life-jacket-shirt-auto-inflates/

Background:

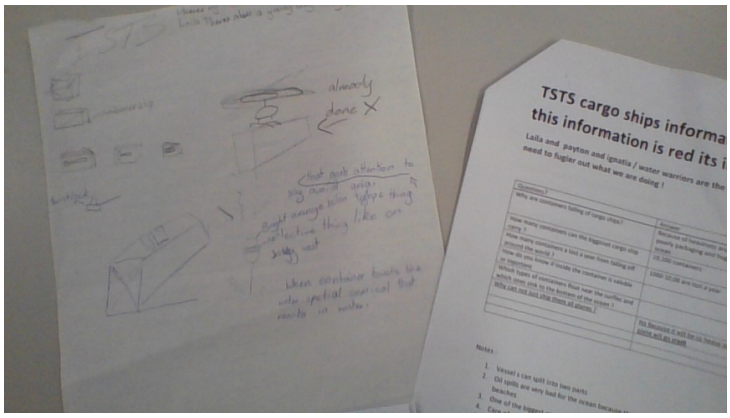
We chose to do the problem that is about containers floating below the surface of the water. We had a lot of different ideas, and we chose this focus for our inquiry because we thought about it not being good for boats to run into containers. Boats might sink or get badly damaged if they do this leads to oil spills, cargo being let out which would make more pollution, more hazards in the water.

Other ideas we have had to stop containers falling of ships:

One of our ideas was that we put in slots to help them stay on the ship.

Another idea was that we attach carabiners to the corners of the shipping Containers, but it would not be able to hold the weight.

Our last idea was that we build a robot to lift the containers out of the water.



photos of other ideas

Why we used our idea:

We used it because it's cheap and easy to install.

Possible problems

. The flaps might break open on the top of the shipping container that will be inserted

We think it will cost around $25-50 each

Some of our research that we used:

Shipping containers are made with:

. steel

. meta

Marine grade paint is always used for shipping containers, this provides good protection from the elements and is very hard-wearing.

some life vests have cartridges of carbon dioxide sewn into them which cause them to self-activate when submerged in water.

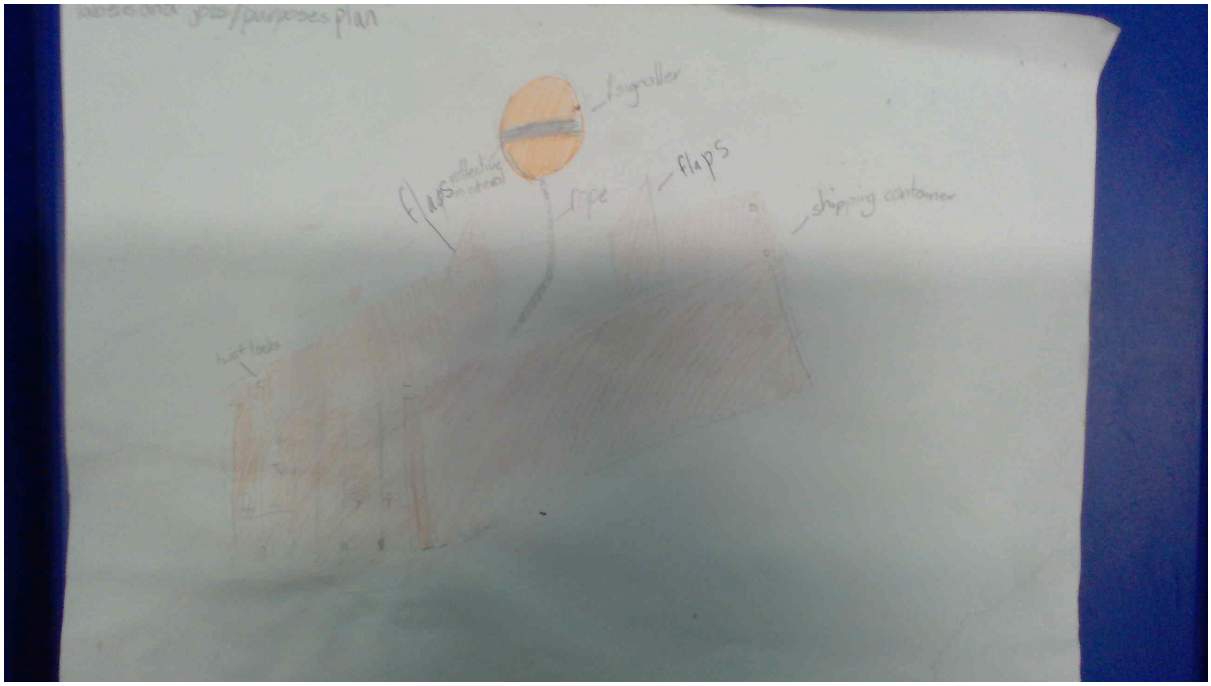
Some shipping containers contain chemicals.

What we hope to achive:

We hope to achive to stop sailors running into the shipping containers and we also hope to achieve to stop oil spills caused by boats running into shipping containers.

Our invention:

Our idea is when the container hits the water our device will pop out of the flaps on the top of the shipping container this will happen because the device will have cartridges of Carbone dioxide sewn into the seems like the self-activated life vest. It will float in the water it will also have a reflective, high vies strip around it so when the lights on the boats turn on it will look like it is glowing so they can see to go around the airer. The device will be connected using rope.



Materials:

. corex

. scissors

. hot glue gun

. hot glue gun sticks

. silicon

. Stanley knife

. balloon

. rope

. duct tape

. permanent marker

. water

. computer

Steps to how we made our modal:

1.first we got the corex and permanent marker then we drew 4x rectangles 2x squares.

2.then we cut out the shapes.

3.we got one rectangle, drew two flaps on it and cut it out with a Stanley knife.

4.then we glued the shapes together using the hot glue gun.

5.after that we tested if it flouted, we wanted it to flout it sunk.

6. then to fix it sinking we used silicon to fill the holes.

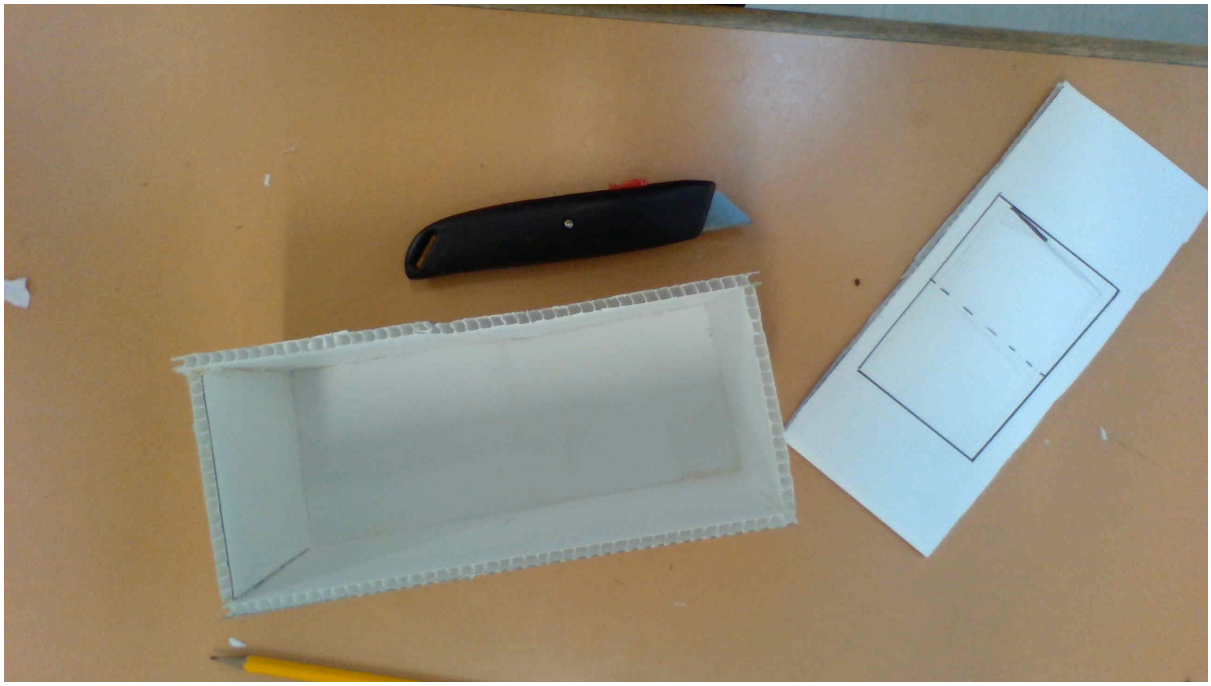
7.After that we blew the balloon up.

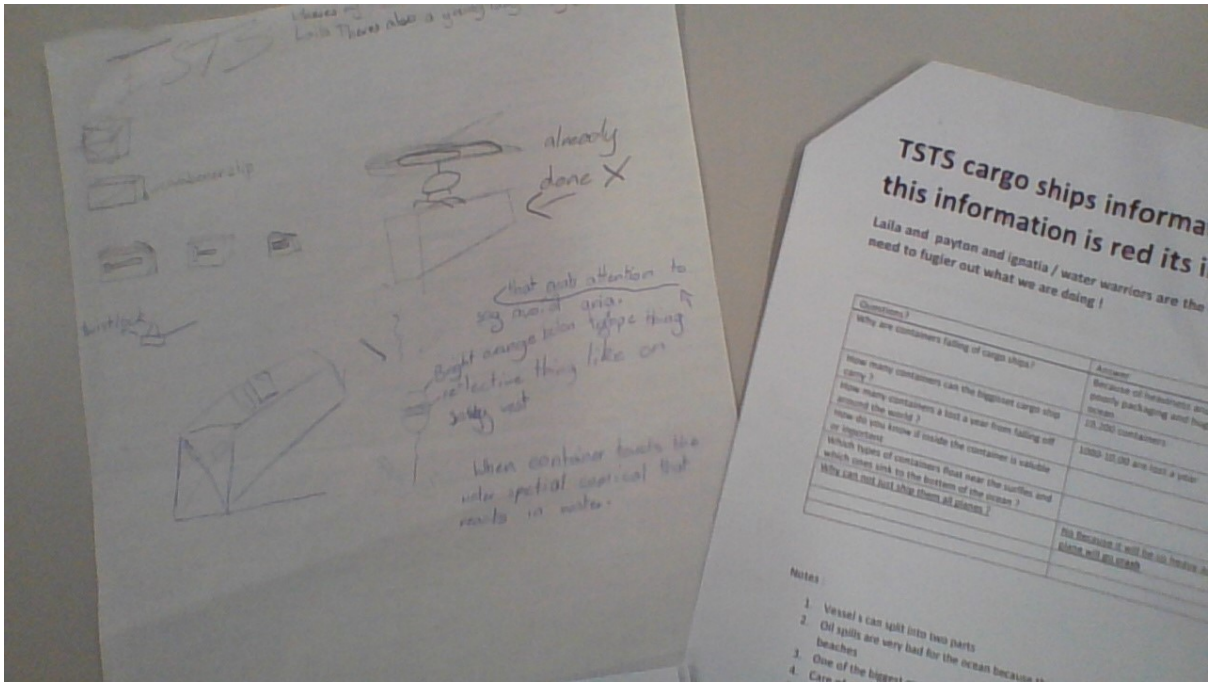
8. put the duked tape on the balloon to ack as a high vies strip so the people driving the boats could see it is there and hopefully, they will go around the marker.

The corex worked because it is waterproof.

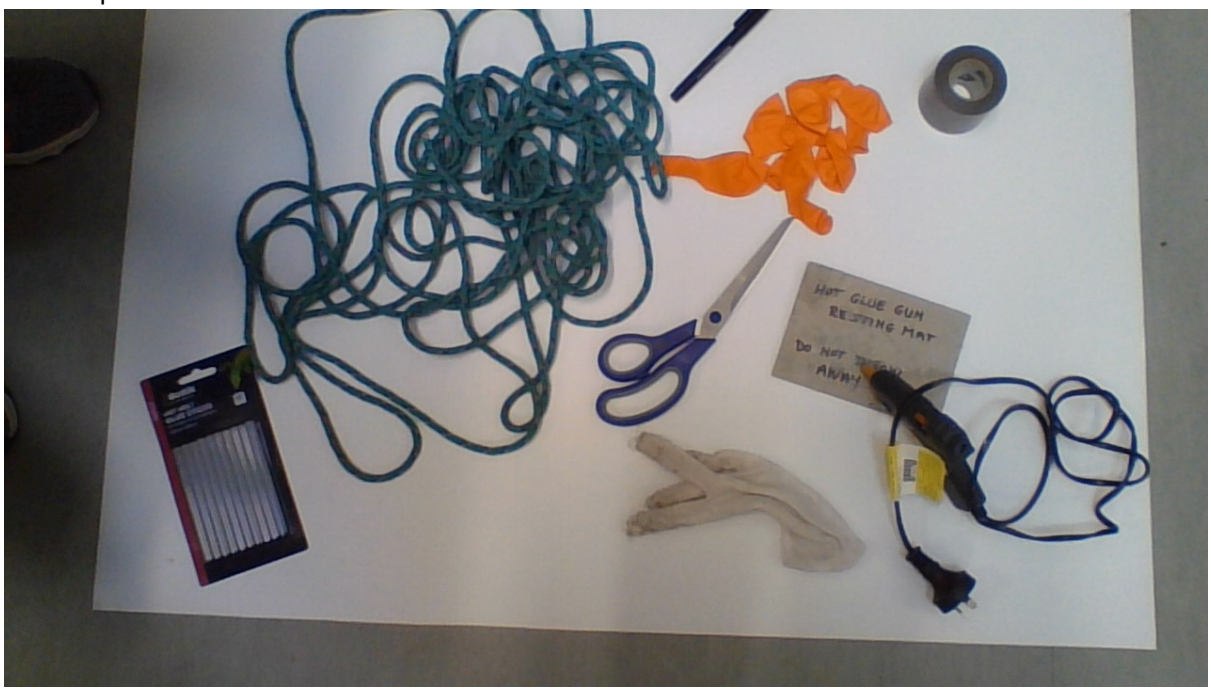
We tried to fill the holes with hot glue but it did not work because it did not stick to the surface of the corex so we used silicone to fill the holes and it worked.

This is Payton and ignatia working on research.

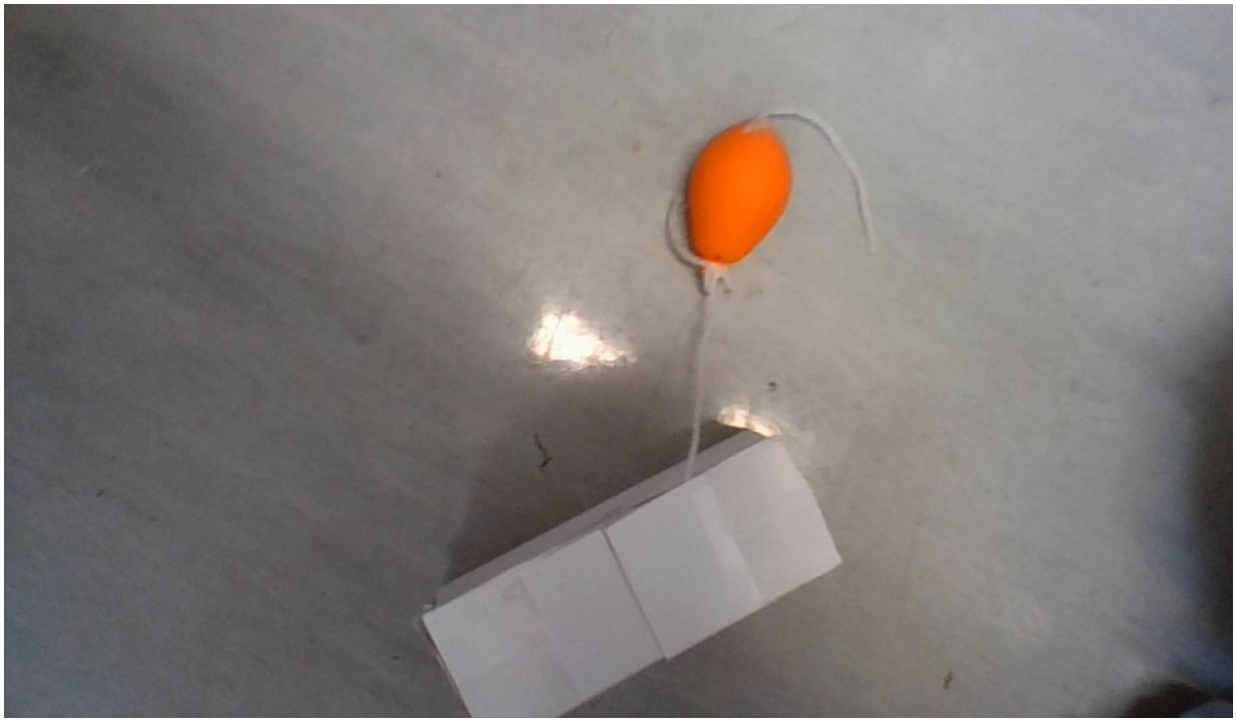




The old plan and research sheet.



. all craft stuff including hot glue gun, resting mat, cotton glove, hot melt glue sticks, rope, orange balloons, duct tape, permeant maker, corex

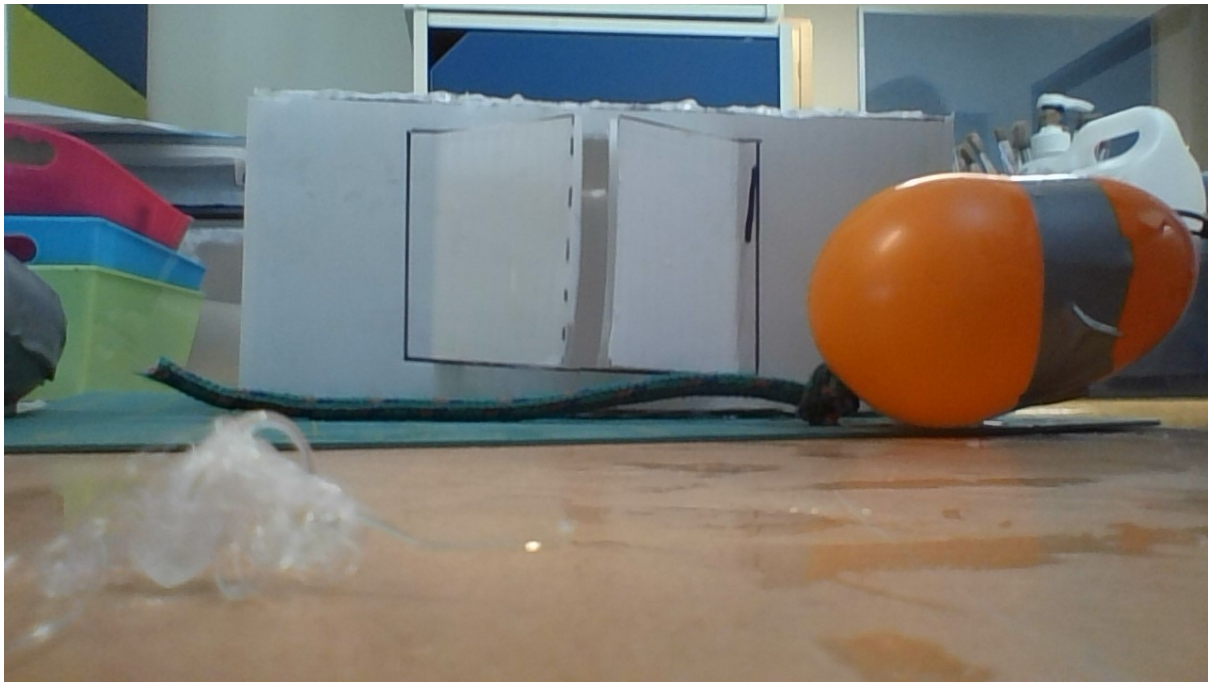


The smaller version of our invention made with paper, a balloon and string.

Payton working on the container with hot glue gun and gloves. Laila writing down information.

Ignatia cutting the corex and Payton gluing parts together.

Ignatia cutting more corex.



Our invention with corex ,rope ,balloon and duct tape .

One of the first tests.

Payton and Laila working on the computer. Another diagram of the shiping container

Some good things about our invention are

. Our invention will make less oil spills happen.

. It is ecofriendly.

. Less animals will be harmed.

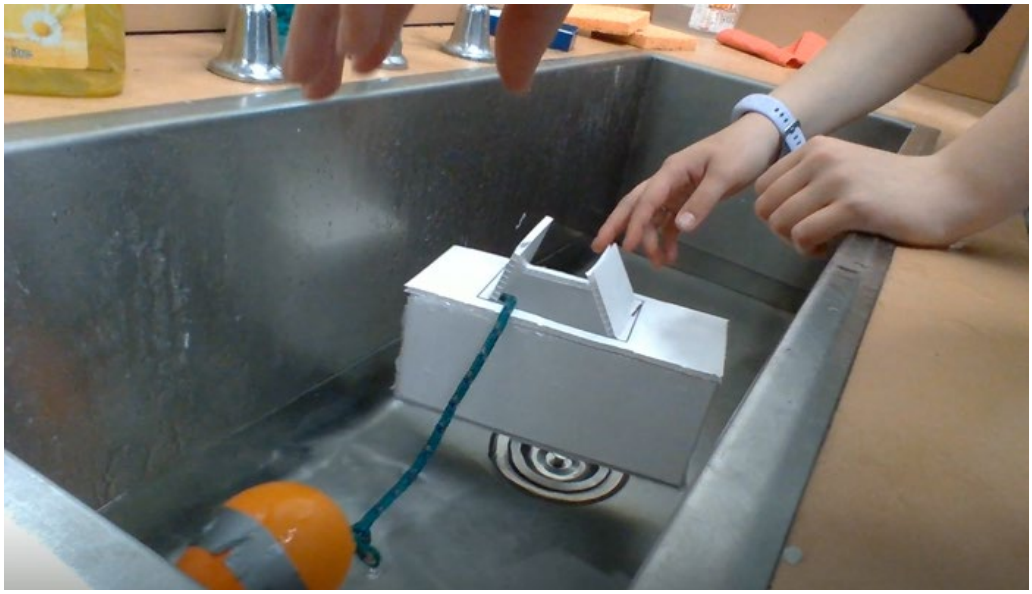
. It would be easy to install.

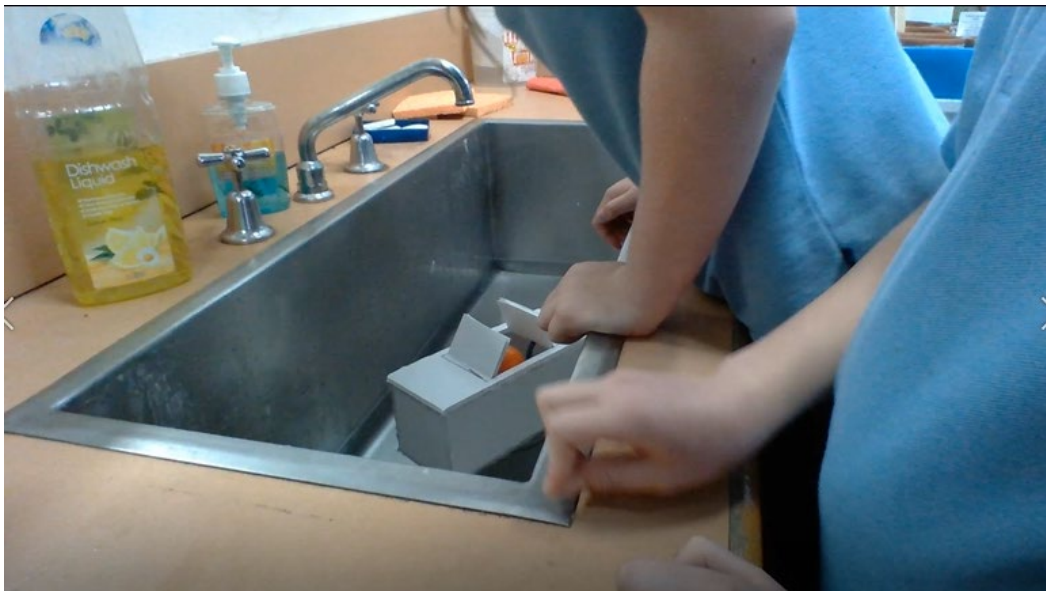
Some bad things about it are that:

. It does not save the cargo.

Hope you liked our invention.

Remember together we can save the sea.




Dishwash
Liquid