

Langbank Primary School

Team: Plastic Reduction Team

“When we visit our neighbouring beaches/shorelines when out with our families we see a lot of rubbish and plastic floating in the Clyde or rubbish on its beaches.”



AIMS AND OBJECTIVES

We are lucky, we all live near the River Clyde but we see the impact that rubbish is having on the river and its wildlife. We wanted to create an invention to reduce the amount of litter on the top and bottom of the Clyde. We also wanted to educate family and friends on the importance of binning rubbish and taking it home.



RESEARCH

We planned our project using a Gantt chart and divided roles between the team.

We researched the impact of marine litter and plastics and found many statistics.

We had the idea of a machine that could collect the litter at the bottom of the Clyde. We researched the materials we would need, such as for the plastic holding area. We made an experiment to see which plastics would float on the water, and how we could get the plastics to move using bubbles.

We had a visit from the SP Energy team to help us understand how our device would work.



OUTCOMES

We calculated we could fit 25 bottles in our holding area and we would compress the plastics to make sure it wouldn't have to be emptied too often.



We decided on sustainable, and strong that could float, such as Fibreglass. We designed a hatch so the net could be replaced.

We decided on solar panels and water wheels to help produce energy, which would be stored in a battery.

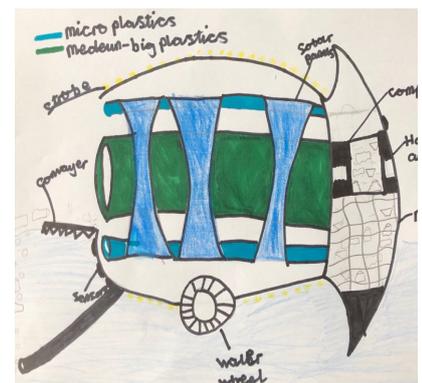
We would use strobe lights and air bubbles to keep fish away.

The SP Energy team told us about sensors, so we fitted a sensor in the holding area



FINAL DESIGN

We decided on a fish that collects plastic. It is powered by solar panels and water wheels. There are LED strobe lights that distract the fish, so they don't get trapped. Hoses with air coming out allow the plastic to float towards a conveyer belt with suction pipes that sorts the plastic. A boat would empty the hatch.



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“We have learned so much about the environment and engineering and how to research these things using the internet.”

Plastic Reduction Team, Langbank Primary School