



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Akshit Gupta	Project Number J1115												
Project Title Surface Water Cleaning Ro-Boat													
Abstract													
Objectives Challenge: Design a device that would help clean trash and garbage from the ocean. Constraints: The device must be: Handy Portable Easy to use and manage (clean the machine) Completed in two weeks Costing no more than \$20.00 Able to pick small and light items													
Methods 6-volt rechargeable battery, gear motors, yoga mat, and plastic board. Tested to find the amount of trash (in grams) could my robot collect in 1 minute.													
Results													
<table><thead><tr><th>Trials</th><th>Trash collected per minute (in grams)</th></tr></thead><tbody><tr><td>1</td><td>37</td></tr><tr><td>2</td><td>33</td></tr><tr><td>3</td><td>38</td></tr><tr><td>4</td><td>35</td></tr><tr><td>5</td><td>41</td></tr></tbody></table>		Trials	Trash collected per minute (in grams)	1	37	2	33	3	38	4	35	5	41
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Conclusions I created this device to solve the purpose of cleaning trash in the ocean. Since it was just an initial prototype, I faced some constraints such as, that it had to be completed in 2 weeks with cost no more than \$20 and that it could pick only small and light items. In the future, the advanced version can be modified into a remotely operated device with features like GPS tracking, mobile app etc. Prototype 2 seemed to be a more efficient prototype than Prototype 1, therefore, I decided to move ahead with Prototype 2 for the final model. As per my experiment, I found out that this device could pick small amounts of trash solving the main purpose. My data also supported the cause and purpose of making this device. The device on an average can pick 37													
Summary Statement This is functional prototype of a boat which can run on ground as well on water for cleaning surface water garbage													
Help Received Adviser - Mr. Robert Evans and Parents													