



MONTHLY CHALLENGE

ENGINEERING - HIGH SCHOOL

Engineering is usually done when there is a specific need in society for which a device is designed, built and tested and then redesigned, rebuilt and retested until the need is met.

INTRODUCTION ON NURDLES

"Nurdles are the building block for all our plastic products. The tiny beads can be made of polyethylene, polypropylene, polystyrene, polyvinyl chloride and other plastics. Released into the environment from plastic factories or when shipped around the world as raw material to factories, they will sink or float, depending on the density of the pellets and if they are in freshwater or saltwater.

Like crude oil, nurdles are pollutants, and will continue to circulate in ocean currents and wash ashore for decades. They are also "toxic sponges", which attract chemical toxins and other pollutants on to their surfaces."

[Taken from www.theguardian.com/environment/2021/nov/29/nurdles-plastic-pellets-environmental-ocean-spills-toxic-waste-not-classified-hazardous]

ENGINEERING QUESTION:

Design a device that would be able to remove floating nurdles from the ocean. You will need to upload a detailed labelled sketch of your device and annotate it to show the how it will remove the nurdles and safely store them and also indicate what will happen to the nurdles once they have been stored.

THE DESIGN SKETCH:

1. Use an A4 page or several A4 pages.
2. Use a black pen/HB/BB pencil to hand draw your sketch.
3. Reminder to plan to show the device with labels and with annotations. You can use more than one page to do this.

(Annotations = add notes to a diagram giving explanation of processes)

INSTRUCTIONS:

- Due date for you to submit your answer on the Google form is by latest 17 April 2023.
- We will announce the Provincial winner for each challenge later in April.
- Solutions will be published on our website at this link - www.ctsc.org.za/stem-clubs/

Please type this link into your Google search bar to answer

<https://forms.gle/FAxHjVaq6NyZmGJ49>

(You will be asked for your name and surname, your grade and your school name.)