

NASA CHALLENGE

NASA SPACE CHALLENGE: SPACE TRASH HACK

GALAXY GREEN



INTRODUCTION

During a hypothetical three -year mission to Mars, an eight-person crew would accumulate almost 13,000 kg of trash. This scenario creates a need to recycle, rather than send extra resources to Mars or send trash back to Earth. The challenge is to design sustainable systems that could manage, reuse, or recycle inorganic waste that is brought to the surface of Mars.

PLASTIC SHEETS

A sheet of plastic that can be shaped into anything . It would reduce waste and be a simple way to recycle plastics



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01. First, you're gonna heat two big flat steel bars . A simple way to achieve this would be to pass current through two sides of the bar .
 02. Then you sandwich all your plastic junk, like water bottles and containers .
 03. Then, while wearing protective gloves, you may bend your plastic sheet while its still warm . The sheets can be turned into anything that is needed .

PROS

PRO 1

The plastic can be used for anything from everyday items to much harder-to-obtain items. It can lose the need to bring most tools, containers, and even clothing.

PRO 2

Melting the plastic is very hassle-free; it can be done at any time and is unaffected by dust storms. It also requires no sunlight or fuel as long as there is an energy source nearby

PRO 3

The insane adaptability can come in very handy when something unexpected might happen, like flash windstorms. It's a good material and will hold its shape for a long time.

PRO 4

The sheets very much supports agriculture by helping manage moisture and light in farming systems. it could be used for plant liners, water wicks, or greenhouse panels.

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Place your plastic
onto a heated
metal bar.



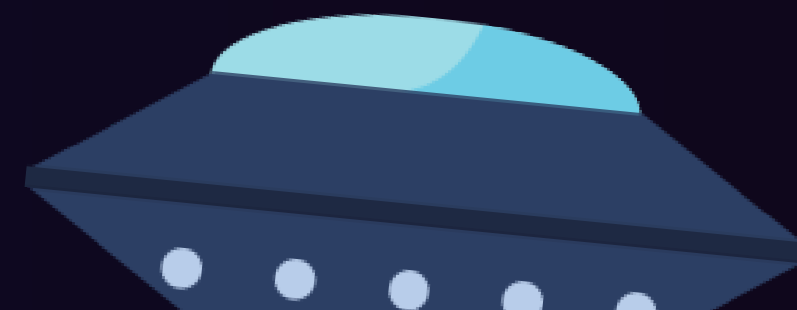
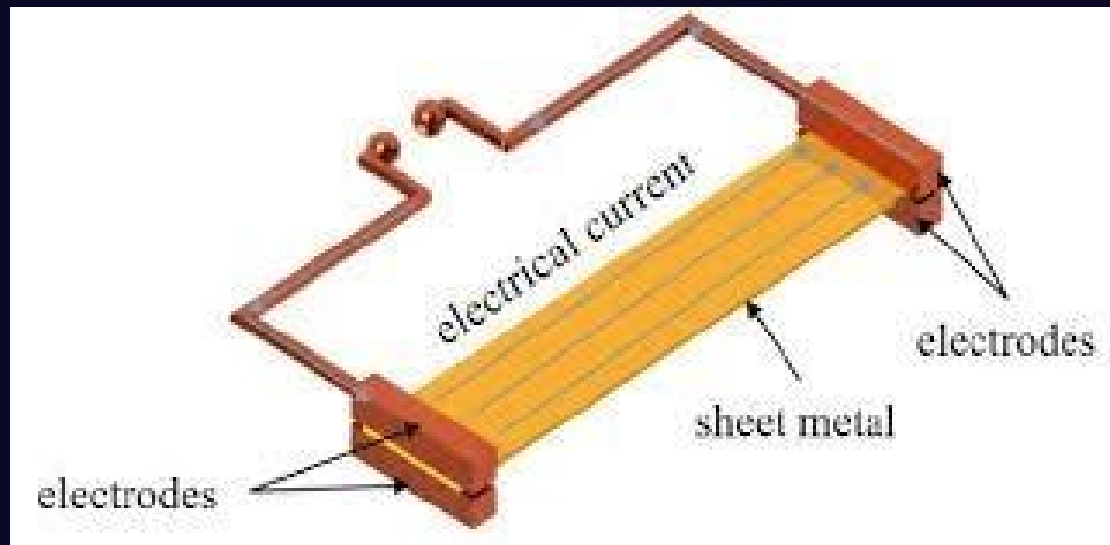
press down all the
plastic with the
other bar until
melted into sheet.



after letting it cool, you
may soften the plastic by
reheating it

o

bend it into whatever
shape is necessary.



WHAT CAN WE RECYCLE?

- plastic containers
- fabrics like nylon and polyester
- bottles
- food trays
- foodpouches
- tools
- clamps
- cups and spoons
- toothbrushes
- gloves
- tiles
- packaging foam
- bags
- worn out gear
- combs

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WHAT ITEMS CAN WE RECYCLE, AND INTO WHAT?

WHAT CAN WE RECYCLE IT INTO?

- tools (hammers, screwdrivers, etc.)
- housing decoration
- party supplies
- science items (vials and lab trays)
- kitchen items (straws, cups, cutting boards)
- utensils
- toilet seats
- belts
- backpacks
- shoes
- clothes
- bed frames
- hangers
- cabinets
- gym equipment
- goggles
- air filters
- small scaffolding
- containers



SUMMARY

Having plastic sheets on Mars will revolutionize how we can work and how we can save precious materials that are very rare to come by. It is a quick and effective way to take care of all the plastics on Mars if there is a way to control the dangerous fumes that are spread. Plastic serves as an excellent material to work with, as it has the potential to replace numerous everyday items.

The background is a deep space scene featuring a dark blue and black void filled with numerous small, bright white stars. Several large, vibrant galaxies are visible, displaying swirling patterns of blue, purple, and pinkish-red light. The galaxies are positioned around the central text, creating a sense of depth and cosmic scale. The text "THANK YOU" is centered in a bold, white, sans-serif font, with "THANK" on the top line and "YOU" on the bottom line.

**THANK
YOU**