

Plastic Bag Rope

On SCOPE's New Materials episode, Julia turned the feeble plastic bag into a much stronger material. Here's how you can do it at home:



What you need:

Lots of old plastic bags (at least 9)
Scissors

What to do:

1. Using the scissors cut off the handles and the very bottom of 9 bags, making 9 plastic loops.
2. Hold each plastic bag between your two hands and scrunch up the sides to make a thin plastic loop.
3. Place the bags into three piles of three.
4. Attach three plastic bags together by looping one bag through another, then back through itself.
5. Do the same to the other two piles of bags.



The three plastic strips will make up the individual strands of your rope, but they need to be plaited!

6. Tie the plastic strands together by making a knot at the top.
7. Plait the strands by placing the right strand over the middle one and then the left strand over the middle one. And then the right strand over the middle, and so on and so on!
8. When you get to the end of the rope, you can loop most plastic bags to the loose ends and keep going!
9. You have now created your very own plastic rope and so all there is to do now is to test how strong it is!

What's happening?

The reason the rope is so strong is because of the braided structure. The braids actually pull together when a weight is loaded onto the rope, which absorbs the force being applied to each individual strand.