

SHENZHEN TEAM 1

IYNT PROBLEM #22

AIRBAG

Use plastic bags and a compressor to lift a bag above the floor level. One can also try to sit on it. Determine all relevant properties of your setup.

AIRBAG

PROBLEM ANALYSIS

- ▶ Airbag
- ▶ Use plastic bags and a compressor to life a bag above the floor level. One can also try to sit on it. Determine all relevant properties of your setup.

MATERIALS

- ▶ Plastic bags, air compressor, scissors, tape,



PROCEDURE

- ▶ 1. Use scissors to cut the plastic bags, then seal it



PROCEDURE

- ▶ 2. leave a hole, then plug the wire of compressor in.



PROCEDURE

- ▶ 3. Launch the compressor, when the air pressure is enough, open the valve of the compressor



PROCEDURE

- ▶ 4. After extracting the wire, seal the hole up as soon as possible.



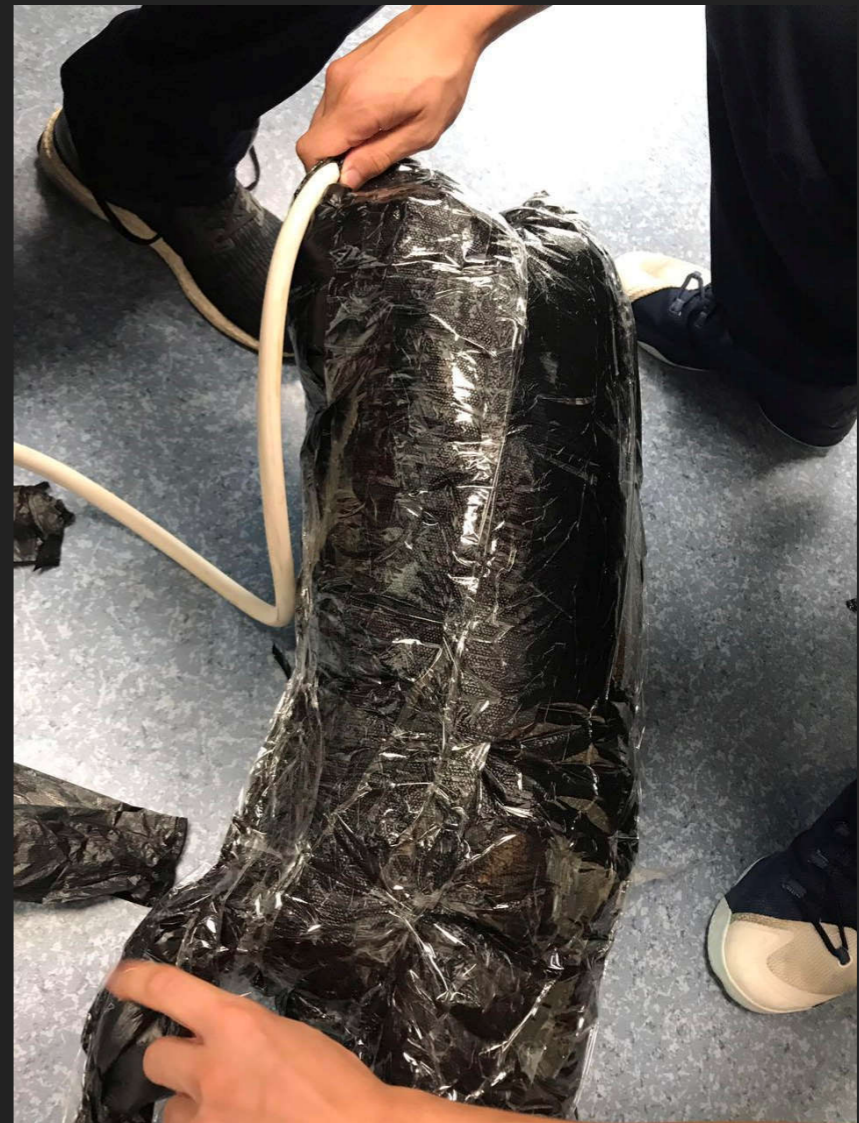
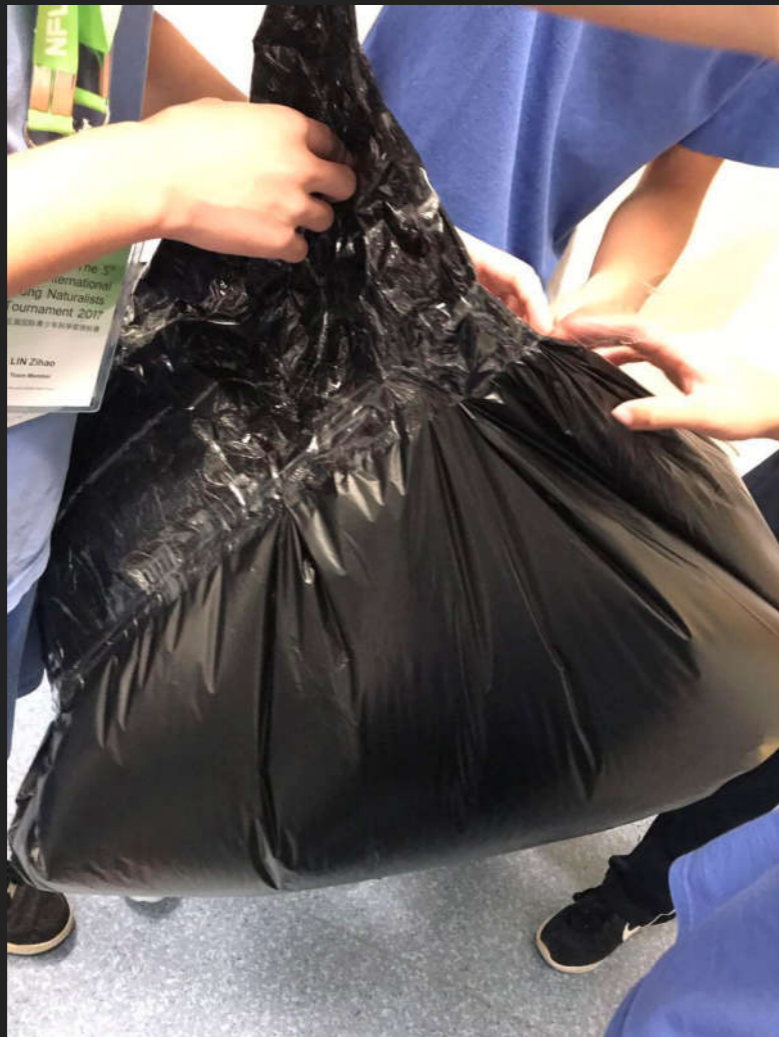
PROCEDURE

- ▶ 5. Repeat the procedure for different size of bag, and charge in different amount of air.



PROCEDURE

- ▶ 6. Compare the differences between a normal sealed bag and a bag which is completely covered by tape.



CONCLUSION

- ▶ Larger the air pressure inside the bag is, more the weights the bag can sustain.
- ▶ Tougher the material is, more air pressure a bag can maintain inside. Thus, more weights the bag can sustain.