



POLAR BEAR PARACHUTES

Design, build, and test a parachute to help your polar bear land safely from her skydiving adventures!

MATERIALS:

- Large coffee filter
- Masking tape
- Marker
- 3oz. paper cup
- Polar bear eraser or figure
- 4-5 paper clips
- 4 pieces of yarn (~12" long)
- Scissors

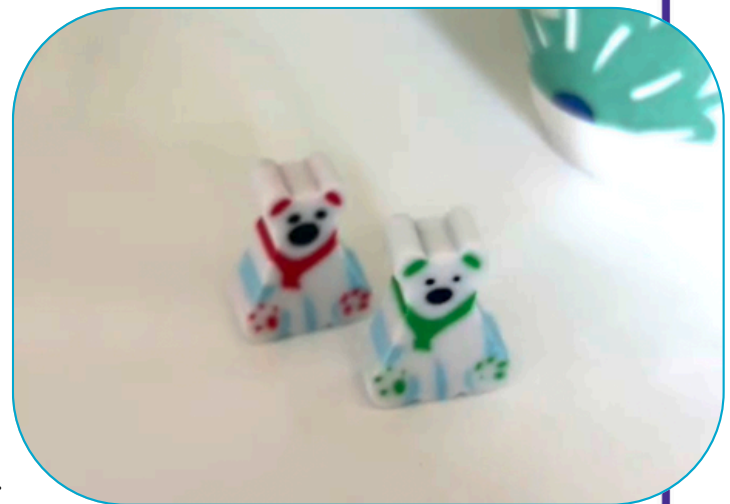
TEKS:

SCI 4/5.4 A: The student is expected to explain how scientific discoveries and innovative solutions to problems impact science and society.

SCI 4.7: Force, motion, and energy. The student knows the nature of forces and the patterns of their interactions. The student is expected to plan and conduct descriptive investigations to explore the patterns of forces such as gravity, friction, or magnetism in contact or at a distance on an object.

HOW TO:

1. Brainstorm ideas for how your parachute should look. Keep in mind what a skydiver's parachute looks like!
2. Decorate the coffee filter.
3. Tape the strings evenly around the edge of the coffee filter.
4. Connect the other end of each string to a paper clip.
5. Attach the four paper clips to the paper cup.
6. Place the polar bear skydiver into the paper cup.
7. Hold your parachute over your head and let it drop!



STEM EXPLANATION

Skydivers rely on parachutes to slow them down as they fall from frightening heights. Parachutes catch air and create **lift**, a force that works against gravity. Parachutes have a large surface area to catch the air and lift the skydiver to lower them to the ground at a slower, safer speed.

Parachutes are usually made of lightweight materials in order to create the most **drag** possible without adding a lot of weight for the skydiver to carry. The coffee filter that you used for your parachute had a large surface area and was able to catch air, causing your polar bear to fall down to the ground slowly and safely.



CAREER: AEROSPACE ENGINEER

Aerospace engineers design and develop aircraft, spacecraft, satellites, and missiles, combining advanced science and engineering to explore the galaxy and beyond.



MEET DANA BOLLES!

Dana Bolles is a mechanical engineer who has been working for NASA since 1995. She is passionate about communicating NASA's exploration of life beyond Earth and raising awareness about diversity, especially the challenges faced by people with disabilities. Living in San Francisco with her partner Shelly and their cats, Dana also dedicates her time to mentoring youth, particularly girls, to excel and be their best in life!



Learn more about Dana!

RESOURCES

<https://www.habitot.org/hands-on-learning/habitot-at-home/stem-activities/coffee-filter-parachute/>, www.ifthencollection.org/