

Anti-Gravity Machine



PURPOSE: How can you overcome gravity and make a balloon hover in the air in a stable position?

MATERIALS:

- balloon
- drinking straws
- metric ruler
- stop watch
- transparent tape

PROCEDURE:

1. Crimp a straw and insert it into a second straw.
2. Measure the straw length and record in the data table.
3. Insert the straw into a balloon and tape the end of the balloon around the straw so no air can leak out.
4. Inflate the balloon.
5. Release the balloon and time the flight. Record the length of the flight.
6. Repeat steps 4 and 5 two more times.
7. Repeat steps 2-6 with three other straw lengths.

DATA:

| STRAW LENGTH | _____ cm | _____ cm | _____ cm | _____ cm |
|---------------------|----------|----------|----------|----------|
| Flight 1 | | | | |
| Flight 2 | | | | |
| Flight 3 | | | | |
| Total flight time | | | | |
| Average flight time | | | | |

QUESTIONS:

1. What forces must balance in order for the balloon to hover without touching the ground?

2. Which straw length worked best? Why?