

Space Lander Design Challenge

(Activity developed by Let's Talk Science)

Challenge:

Your challenge is to work as a team to design and build a device that will land a simulated space probe (a ping-pong ball with a piece of cardboard on the top simulate solar panels) upright after a drop from 1.5m.

Materials:

- 1 ping-pong ball or golf-training ball with a 2.5cm (1") square piece of cardboard attached with tape or hot glue to one side (this is the top of the ball)
- 15 Paper clips
- 10 Craft sticks
- 3 Metal nuts
- Sticky tack
- 6 Erasers
- Tape

Rules:

- You may use only the provided material to build your device
- Your device will be dropped from a height of 1.5 metres (approx. 5 feet) and must land so that the cardboard square (simulated solar panels) on its top faces directly up

Success Levels:

1. You have created a device that **does not** position the ball upright (with the cardboard square facing up) on the ground after a drop of 1.5 metres (approx. 5 feet).
2. You have created a device that **does** position the ball upright (with the cardboard square facing up) on the ground after a drop of 1.5 metres (approx. 5 feet).
3. You have created a device that positions the ball upright (with the cardboard square facing up) on the ground after being dropped upside-down from a height of 1.5 metres (approx. 5 feet).
4. You have created a device that positions the ball upright (with the cardboard square facing up) on the ground. **Tie-breaker:** *the less materials and mass, the better! Landers will be rated by their weight.*