The ping-pong ball challenge

Aim- to build the longest, tallest track that will allow a ping-pong ball to fall steadily for the longest period of time.

Materials (per team)

- **15 sheets of A4 paper**
- **60 cm of sticky tape (provided by the teacher)**
- **1 ping-pong ball**
- **Scissors (for building only – not part of final structure)**
- **Stopwatch (for team timing)**

Class Breakdown (2 x 75 minutes):

Day 1:

- **Introduction to concepts (gravity, air resistance, energy)**
- **Research session (parachutes, slow-fall systems)**
- **Sketch & plan their structure**

Day 2:

- **Build the structure**
- **Testing & competition: slowest fall time wins**
- **Complete worksheet & group reflection**

- **Q1. What is gravitational potential energy and explain how does it change during the fall?**

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- **Q2. How does your design make use of resistance or friction to slow the fall?**

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- **Q3. What types of energy conversions happen in your structure?**

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- **Q4. How is the transformation of gravitational potential energy slowed down in your design?**

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- **Q5. What would you improve in your design and why? Draw diagram.**