

PAPER ROLLER COASTER COMPETITION

Objective:

A team of 3-4 members will design and construct a paper roller coaster using templates that are provided by us (Individual kids will be grouped by us). You must use only the materials that are provided by us to construct the roller coaster. Application of theoretical concepts of Force, Energy, Motion, Inertia, Geometry, Measurement etc to build the sturdiest coaster that keeps the marble rolling for the longest time.

Rules:

- Time for building the coaster is 3 hours.
- Each roller coaster must include five design elements and they must be labeled:
 1. Incline that is not a part of any other element.
 2. Vertical Loop
 3. Wide turn & Narrow turn
 4. Vertical Double loop
 5. Funnel
- The total length of the coaster track must be a minimum of 3 meters and a maximum of 6 meters. Length should be measured and included in the nametag.
- Your coaster must have a name.
- The coaster will be tested using a glass cat-eye marble launched from the highest point of the coaster has to travel through the entire ride, and arrive at the bottom loading platform.
- The starting position at the top of the first hill should be clearly marked. The steel ball or glass marble must end in a designated area or container.
- Contestants cannot hold any part of the track during testing.
- **The decision of the judges is final. Any coaster that violates the rules above or the spirit of the competition will be disqualified.**

Methods and Analysis:

- The length of time that it takes the marble to travel the coaster will be recorded.
- The speed of the marble will be calculated using distance/time and the highest speed calculation will be the winner.
- In the event of a tie; a larger marble will be used and the same information will be recorded.
- Extra points will be provided for creative and complex designs.