

Scitech competition 2023/24

Marble roller-coaster



Aim:

Design and make a roller-coaster for a marble, capable of enabling the marble to run-off as it exits the roller-coaster.

Focus will be on: the number of turns in the rollercoaster:

4 turns for KS1 (years 1 and 2),
5 turns for LKS2 (years 3 and 4),
6 turns for UKS2 (years 5 and 6),
directional focus as it exits,
ability to enable a marble to run-off as far as possible and re-usability.



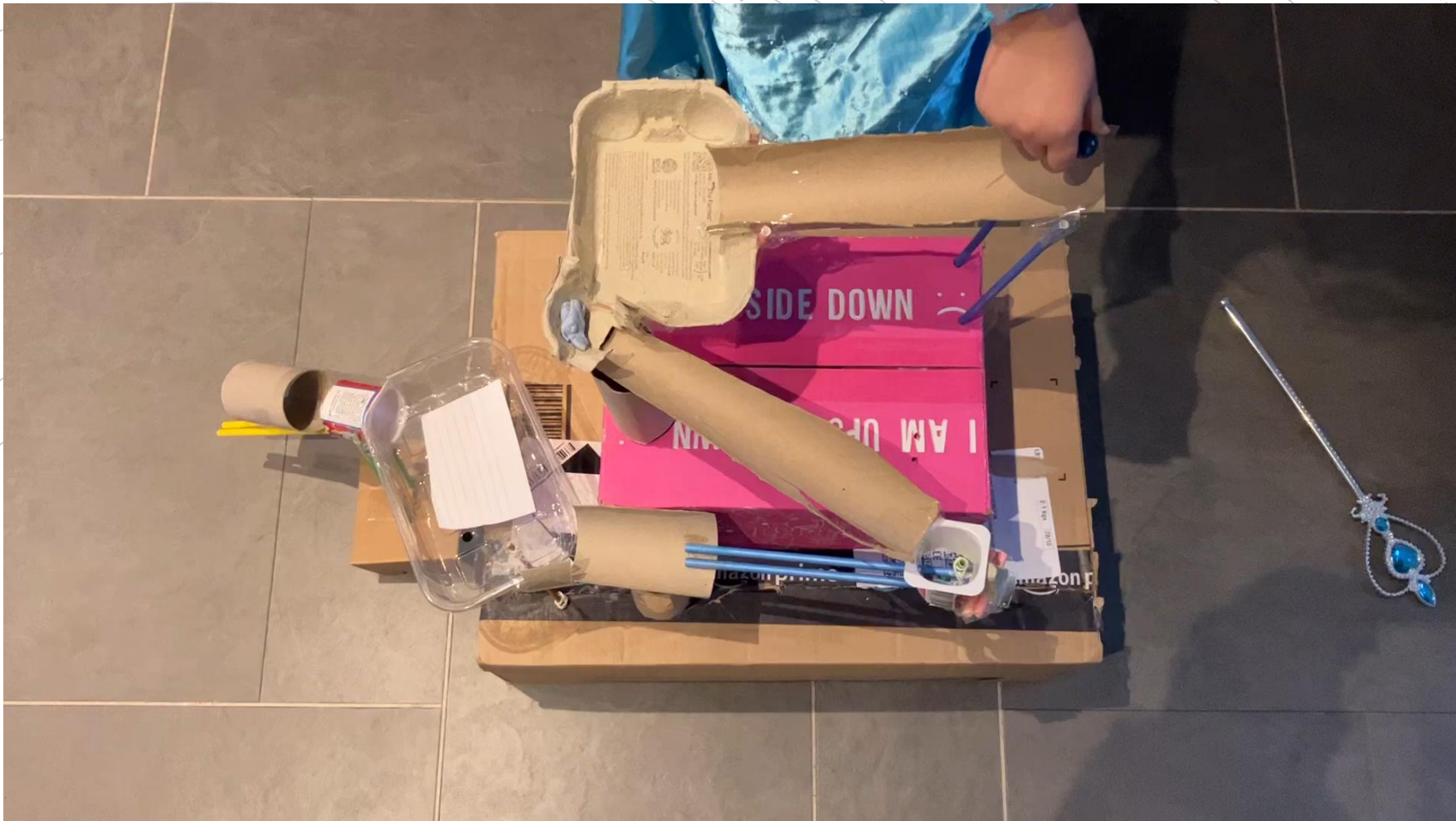


**The roller-coaster must
be self-assembled.
Improvisation and use
of recycling is key!**

**The finished roller-coaster must not
be:**

- Longer than 50cm
- Wider than 50cm
- Higher than 50cm



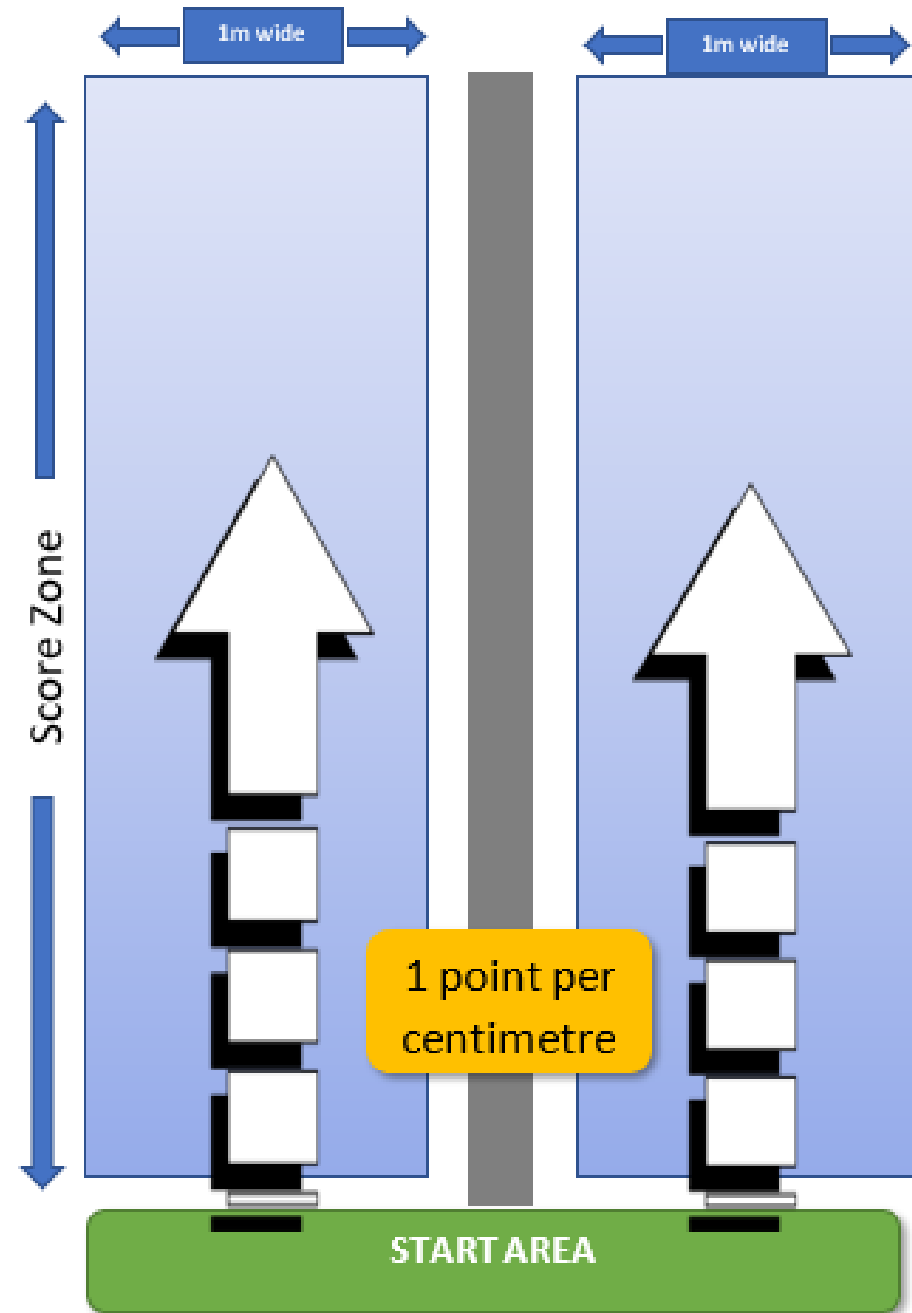


Here's an example (that I made at home with my 6 year old daughter)

placed on the starting line on one of two lanes laid side by side using the Drumba floor tiles. The marble must be dropped/placed in the roller-coaster without force. As the marble exits the roller-coaster, its run-off will be measured in a forward direction (1 point per cm).

If the marble doesn't exit the rollercoaster then it will not score points on that run.

The prime aim is to enable the marble to run-off as far as possible – with straight line distance being measured from the start line.



- All roller-coasters will be offered a practice run and then three scored test runs.
- The highest scoring test run will count as the score for that roller-coaster.
- In the event of a tie, the roller-coaster with the most consistently high score will win (i.e. the highest average score across the 3 runs).
- Entrants can opt to preserve the life of their roller-coaster and not have a practice run.



- This is an 'at home' year so entry is optional. You can work in groups of up to 6 but if these groups are mixed ages, the roller-coaster must be entered for the category relevant for the eldest child in the group.
- Heats to be held in year groups in the week beginning 4th March 2023.
- Heymann Final (4 entrants per year group) on Friday 15th March 2023.
- ALL entries can be submitted for the most aesthetic and most ingenious design awards.



- **Heymann awards available for:**

- **Winner in KS1**
- **Winner in LKS2,**
- **Winner in UKS2,**
- **Most ingenious device and**
- **Most aesthetically designed and finished catapult.**

- **Grand Final at KS1, hosted by West Bridgford School, for winners on Tuesday 16th April.**





**Good luck
everyone!**