# Judges Form for 2023 Roller Coaster Competition

**Team:** _____ School: _____ .

**Judges:** _____

## Technical (Maximum - 70 points)

| Technical Score Maximum (70 points) | The technical score judges the accuracy and reliability of the roller coaster. Teams have three opportunities to achieve a successful run of going from the start to the finish and completing the Rube Goldberg Challenge in 30 seconds +/- 3 seconds. | | | |
|---|---|---|---|---|
| Travel Time Score Doubled if 30 sec. +/- 3 sec. | Up to 35 points will be awarded for a roller coaster when the ball spends a minimum of 20 seconds traveling the path. The technical score will be doubled (up to 70 points) if the travel time is between 27 and 33 seconds. | | | |
| Start/End | The ball begins and ends at the designated locations: 5 points | | Not achieved: 0 points | |
| Rube Goldberg Challenge | Rube Goldberg Challenge Achieved: 10 points | | Not achieved: 0 points | |
| Tricks | Each unique trick completed is awarded 2 points up to a maximum of 20 points. Tricks may be repeated, but no additional points are awarded for the repeated tricks. | | | |
| Trick examples | Means of propulsion | Gravity, spring, rubber band, mousetrap, etc. Each type is counted as a separate trick | Points awarded: | |
| | Simple machine | Pulley, lever, wheel and axle. Each type is counted as a separate trick | Points awarded: | |
| | Magnet | Magnet causes a reaction or transports the ball | Points awarded: | |
| | Lift | A lift is implemented during the run | Points awarded: | |
| | Corkscrew | The ball undergoes a corkscrew motion (horizontal loop) | Points awarded: | |
| | Chain Reaction | A chain reaction takes place during the run | Points awarded: | |
| | Airborne | The ball becomes purposely airborne during the run | Points awarded: | |
| | Loop | The ball transverses an upside-down loop without falling off | Points awarded: | |
| | Finish high | The ball finishes higher than it starts | Points awarded: | |
| | Other | Other unique tricks not mentioned above | Points awarded: | |
| | Other | | Points awarded: | |
| | Other | | Points awarded: | |
| | Other | | Points awarded: | |
| | Other | | Points awarded: | |
| Time Multiplier: (0,1,2) | Start/End Points: | Rube Goldberg Points | Trick points: | Total Points: |

**General Technical Score Checklist:  Does the roller coaster:**
fit into a volume of 3' by 3' by 2' ?___  use a specified beginning and ending point?___ stand up by itself?___  not use prefabricated toys except for decoration?___  not use electrical, chemical or nuclear energy?___  not use water?___

(if these requirements are met, the roller coaster is eligible for a technical award)

## Presentation (Maximum - 30 points)

Is the presentation board neat and easy to read?___/**0-8 points**

Is the information on the presentation board free of errors?___/**0-2 points**

Does the oral presentation accurately identify and describe the tricks of the roller coaster?___/**0-5 points**

Are the Physics concepts the tricks are related to correctly identified?___/**0-5 points**

Do all members of the team participate in the presentation?___/**0-4 points**

Do the team members talk confidently about their experience and use good eye contact and posture?___/**0- 2 points**

Are the team members knowledgeable about what they learned?___/**0-2 pts**

Do team members act enthusiastic about the project?___/**0-2 points**

## Theme (Maximum - 30 points)

Does the coaster have a theme?___/**0-6 points**

Is the theme carried throughout and well integrated into the coaster, poster, and the presentation?___/**0-8 points**

Is the theme creative?___/**0-8 points**

How well crafted is the roller coaster: (is it appealing to the eye, is the construction of the theme and the coaster well done)?___/**0-8 points**