

ROLLER COASTER

Group Physics Activity

Requirements & Points

DESIGN: Accurate drawing of your Roller Coaster. 15 points [F]

- Information of name, theme and color
- Paper size of $8\frac{1}{2} \times 11$
- Labels for the following
 - Newton's 3 Laws
 - Potential Energy (greatest & least)
 - Kinetic Energy (greatest & least)
 - Transfer of P & K Energy
 - Average speed
 - 1 safety feature

Accurate drawing of the passenger car. 5 points [F]

- Labels for the following
 - where passengers sit
 - 1 safety feature

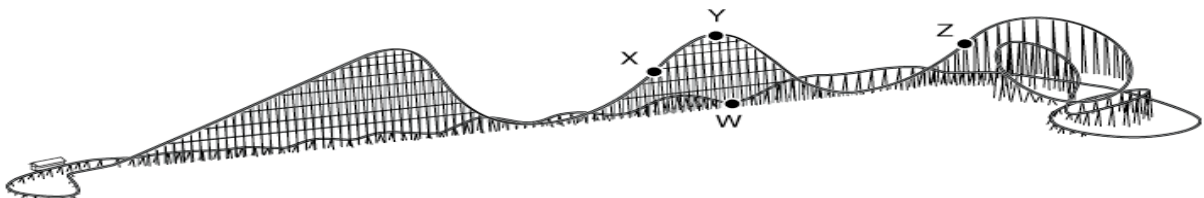
MODEL: Hand-made model of designed Roller Coaster. 30 points [S]

- 30 x 20 inch board max
- originality of theme
- construction neatness & sturdiness
- Labels for the following
 - Newton's 3 Laws
 - Potential Energy (greatest & least)
 - Kinetic Energy (greatest & least)
 - Transfer of P & K Energy
 - Hill (minimum of 10 cm)
 - Loop (minimum of 1)
 - Difficulty (loops, corkscrews, turns, etc)
 - Working (4 in a row at presentation time)

Sign to include the following 5 point [S]

- Theme and Name of the Roller Coaster
- Name of the Company
- Names of Company/Group members

Steel Dragon 2000



EXTRA CREDIT: Optional and point value decided by the teacher.

0-10 points [S]

- Exceptional design (creativity or difficulty)
- 3-D model of the designed car
 - show location of passengers and safety feature
- Use of additional Physics
 - Acceleration
 - two examples within the Roller Coaster
 - formula used and shown
 - Forces
 - types and locations

PRESENTATION: Oral information by all group members

10 points [S]

- Well stated theme
- Explain why the roller coaster is the best & how it works
- Working Roller Coaster (4 in a row)

PARTICIPATION: Written information by all group members

20 points [F]

- Analysis of each member and their contribution on the project.

