CHALLENGE : COASTER

COASTER CAR DESIGN EXPLANATION

Name:_____ Date:_____ Section:_____

Directions: You need to provide Mr. Hollstein with some information about your coaster car design. This information could have been obtained from research your completed online in form of text, pictures, or other sources. In addition to information about your coaster car, you will need to answer some questions about your restraint system design.

Coaster Car Design

I. What was your original source of inspiration for your coaster car and why did you select it?

II. Are there any roller coasters in operation today that have cars that match your design? Which ones?

III. Provide me with some dimensions of your coaster car:

a. Overall Length: _____
b. Overall Width: _____
c. Overall Height: _____
d. Vehicle Weight (in grams) _____ (Only list if your design was selected as the groups final design).

IV. What is the passenger payload for your roller coaster car? What are your reasons for the number of passengers you are allowing in your car?

V. Due to the fact that your group will get an additional $20,000 if your design is selected as the coolest looking design, have you made any modifications to enhance how it looks? Why or Why not?

COASTER CAR DESIGN EXPLANATION

Restraint System Design

VI. What inspired your restraint system design? Why did you feel it would best restrain your passengers?

VII. What materials did you select for your restraint system? Why were these materials selected and why do you feel they will best hold your passengers in place?

VIII. Earlier in the activity we talked about the physics involved with roller coasters and how they affect the human body. Some of the forces we discussed were Centripetal Force, Centrifugal Force, Inertia, Gravity, and Acceleration. Your ball bearing passengers will experience similar forces to actual passengers on a roller coaster.

a. Describe for me how passengers are held in their seats when going around a loop.

b. Describe how the "weightlessness" feeling is created on a roller coaster.

c. If your ball bearing passengers had "stomachs" what would cause them to feel sick while riding a coaster?