Electronic Data Collection on Drop Tower

<u>Before you ride</u>
- On the back of this page, sketch the sequence that the rider goes through, making note of the approximate times they are at extreme positions (very top, bottom, etc.)
- In the space below, describe your data collection strategy for this ride. Will you collect data for the entire ride, or concentrate on a specific portion? Which portion? How long does it take to go through the ride or that part of the ride, and how many data points would you like to acquire?

<u>While you ride</u>
- Notice the launch sequence. When should you initiate data collection in order to gather data over the entire run?
- Secure the accelerometer in a fixed orientation relative to your body. The preferred axis would be straight up and down (vertical).
- When you reach the time on the ride where you want to begin collecting data, press [Start/Stop].

<u>After you ride</u>
Return the unit to the Electronic Data Center. Download the data. If possible, they will print the graphs of your force/mass vs. time so you can do onsite analysis. The data will be posted online so it can be downloaded for further exploration later.

<u>Questions:</u>
Use the back of this page to answer the questions below. Use the ride description to determine where you were on the ride for each of these portions. Also note any peculiar accelerations encountered.
1. Describe the graph during the initial seconds you recorded. Compare the shape of the graph to your movement during that portion ride.
2. Where were the readings greatest? What were the readings there? Explain why the readings were the greatest at that point.
3. Where were the readings the least? What were the readings there? Explain why the readings were the least at those points.
4. In general, the larger the force one feels, the larger the acceleration acting. Do the places where the accelerometer recorded the largest values the same places you felt the largest forces? Why or why not?

Ride Profile:

- In this area, sketch the position of the rider at various times. A typical free-fall ride might show movement from the bottom to top taking 15 seconds or so, a rest at the top of about 5-10 seconds, while requiring only 5 seconds to actually fall from top to bottom.
- Indicate on your ride profile the approximate location of a passenger every 5 seconds. This will enable you to match up your accelerometer data with your location on the ride.