

WHERE IS IT IN THE PARK?

As you rode the rides, you experienced different forces, both in size and direction. When you used the accelerometers, you were actually measuring forces, but we call it "acceleration" because the ratio of F/m is the same for objects of different mass under the same acceleration.

The list below describes seven scenarios that happen at one place or another in the park. Select three of them (but not #0) and fill in a table section for each. A sample, 0, has been done for you to use as a guide in filling in the table.

0. (sample) The net vertical acceleration is zero, but the rider is moving:
 1. The vertical acceleration is greater than 1 g:
 2. The vertical acceleration is less than 1 g:
 3. The longitudinal acceleration is equal to or greater than 1 g:
 4. The longitudinal acceleration is less than 1 g, but not zero:
 5. Centripetal Force is directed horizontally:
 6. Centripetal Force is directed vertically upwards:
 7. Centripetal Force is directed vertically downwards:

Item # 0	Ride FLIGHT DECK	Location (be specific) On the horizontal section just before entering the station at the end.	
Describe your motion at that point We are going in a straight line at a relatively constant speed. This is before we brake. We are just coasting.			
The instrument you used Vertical Accelerometer		Reading on the instrument 1 g	What did you feel at this point? I felt like I was simply sitting still, until we braked that is.
Why did you get the reading you did? We got a reading of 1g due to a push upward equal to our weight. But that's normal, so the net acceleration (which is 1 g less than the reading) is zero.		Why did you feel the way you did? The only upward force is simply equal to the usual upward force. It balances my weight and nothing more.	

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Describe your motion at that point		
The instrument you used	Reading on the instrument	What did you feel at this point?
Why did you get the reading you did?		Why did you feel the way you did?

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