

(S6) Forces Acting During Acceleration:
Apparent Weight on a Roller Coaster

TODAY'S
DATE

E.Q.: Does your weight change when you are riding on a roller coaster?

Newton's first and second law can be used to explain forces acting during constant speed and acceleration

- when an object is at rest, the sum of the forces on an object equal zero
- when an object moves forward, up, or down at a constant speed, the sum of the forces on an object equal zero
- when an object accelerates, the sum of the forces on an object is not zero
e.g., if accelerate up, there must be a net force pushing you up (Newton's 2nd law) and your weight will increase