

Motion and Gravity

“Please keep your hands and arms inside the vehicle at all times.”



We will address the following Maine Learning Results in this unit:

D2e Describe the effect of gravity on objects on Earth.

D4c Describe and apply an understanding of how the gravitational force between any two objects would change if their mass or the distance between them changed

D4e Describe and apply an understanding of the effects of multiple forces on an object, and how unbalanced forces will cause changes in the speed or direction

...and take a stab at these new Next Generation Science Standards:

MS-PS2-1. Apply Newton’s Third Law to design a solution to a problem involving the motion of two colliding objects.

MS-PS2-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

Key Terms:

Inertia

Acceleration

Gravity

Weight

Newton’s First Law of Motion

Newton’s Second Law of Motion

Newton’s Third Law of Motion

Mass

By the end of this unit, you should be able to...

- Explain why something moves in a certain way, by using Newton’s Laws of motion
- Explain the factors that affect the strength of gravity
- Describe the difference between speed and acceleration
- Show how several forces working together affect motion
- Describe how Newton’s laws of motion and gravity, and the Law of Conservation of Energy, apply to a particular sport or amusement park ride