

Gravity and Normal Forces

Forces in a Scenario: Rock and Earth

- In the scenario where a rock is placed on the ground, two main forces are acting upon the rock:
 - **Gravity:** The force exerted by the Earth on the rock, causing it to be pulled towards the ground
 - **Normal Force:** The force exerted by the ground on the rock, preventing it from falling through the ground

Newton's Third Law of Motion: Action and Reaction

- Action and reaction forces always occur in equal magnitude and opposite direction
- When the rock is placed on the ground, the Earth exerts a gravitational force on the rock (action force)
- The rock also exerts an equal and opposite force on the Earth (reaction force)

Normal Forces

- Normal force is always perpendicular to the surface upon which the object is resting
- Normal force is determined by the weight of the object and the orientation of the surface
- In this scenario, the normal force is exerted by the ground on the rock, preventing it from falling through