The Inclined Plane

A Flipped Lesson by Miss Logan

What is an inclined plane?

- An inclined plane is a simple machine
- A large, flat object is tilted slightly higher on one end than the other



What's going on in an inclined plane?





Normal forces are always directed perpendicular to the surface.

• Label the direction of N and mg.



• Mark the direction of acceleration a.



 Choose the coordinate system with x in the same or opposite direction of acceleration and y perpendicular to x.



• Now some trigonometry



• Replace the force of gravity with its components.



Use Newton's second law for both the x and y directions



The force and acceleration in the x-direction have a negative sign because they point in the negative x-direction.

What are the components of Gravity?



What is the Force Normal?



What is the force of Friction?



What is the Net Force?



What is the acceleration?



Follow Up Questions

- Force Normal is always ______ to the surface.
 Force of Gravity must be broken down into _____ and _____ components.
- 3) Draw force gravity, force normal, acceleration and friction vector arrows onto the inclined plane below.

