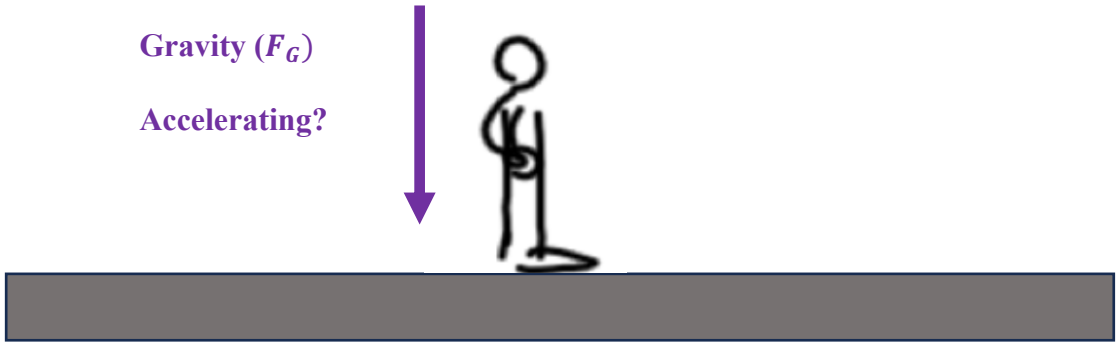
Normal Force (F_N)

We determine that a net force acting on an object will cause it to accelerate!

We also learned yesterday that ALL objects experience a force of gravity!

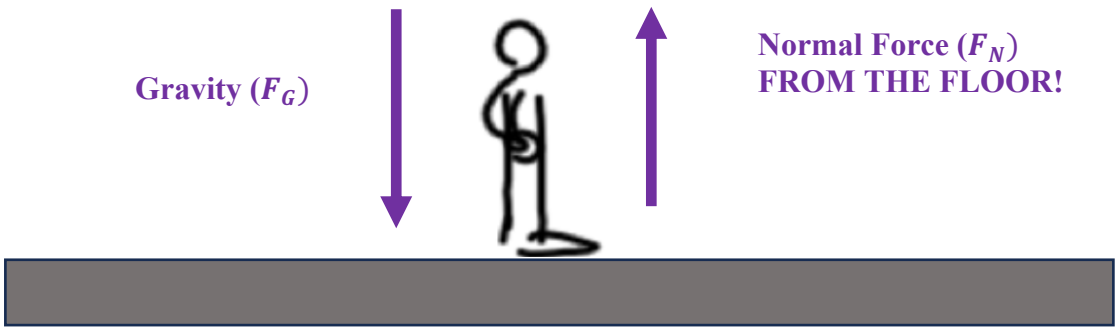
So, by that logic, why don't we fall through the ground accelerating, because of gravity?



Normal Force (F_N)

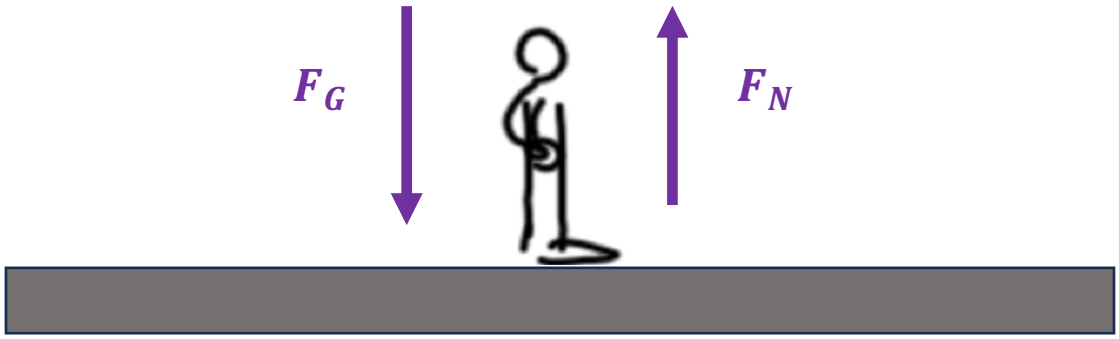
Turns out there is force that is being exerts on us BY THE FLOOR, that points upwards when we're on a flat surface, that equals the force of gravity, causing us NOT to accelerate through the floor!

This is called the NORMAL FORCE!



Important detail!

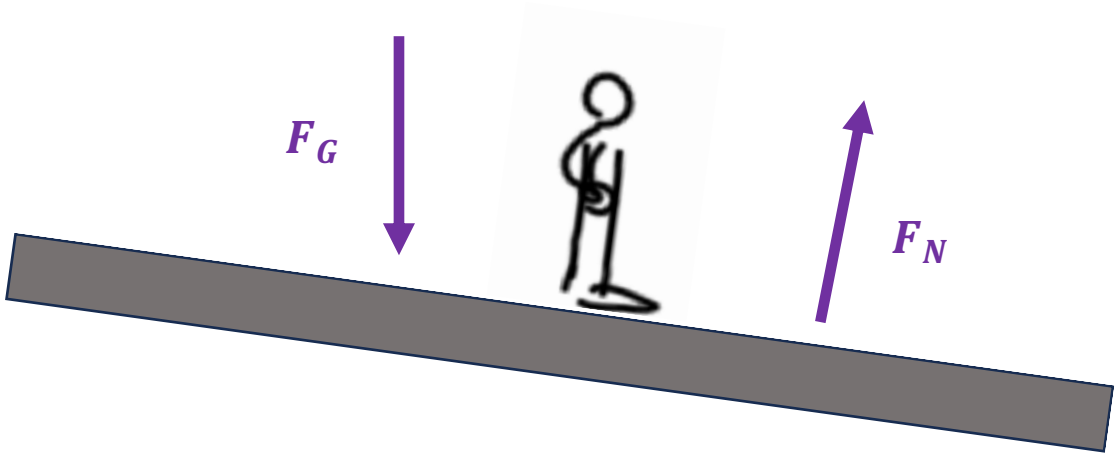
In this situation, Normal Force points upwards and equals the force of gravity, which causes this person NOT to accelerate down!



HOWEVER, Normal force DOESN'T ALWAYS point upwards and the Normal Force DOESN'T ALWAYS equal the force of gravity!

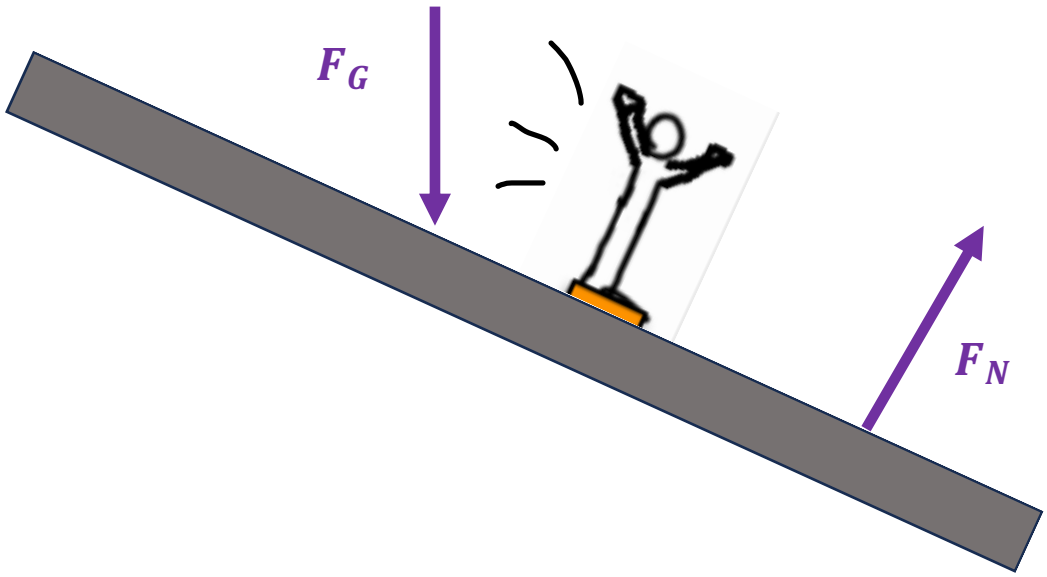
The Normal force points PERPENDICULAR to the surface that it's on!

What if this surface tilted a bit?

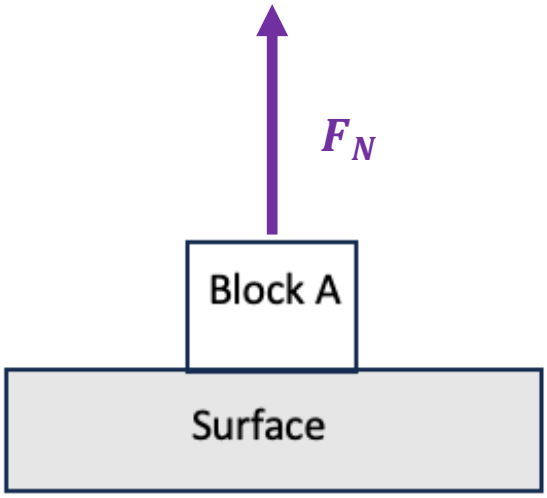


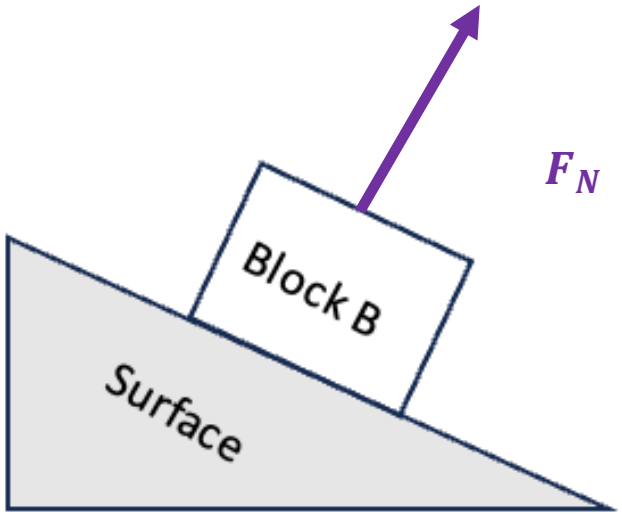
Gravity still points down, but now the normal force points at a bit of an angle! NOT directly upwards!

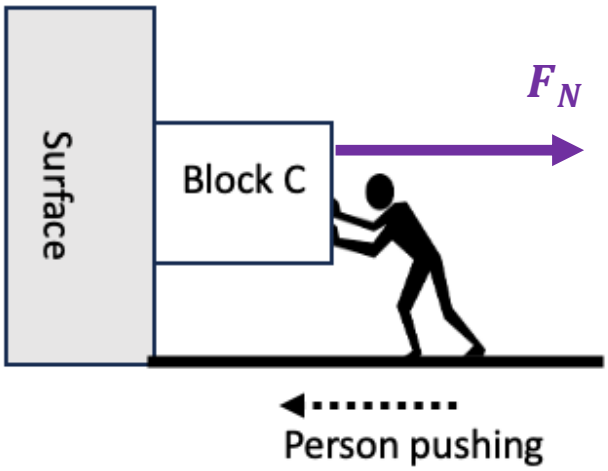
If it gets tilted a lot, the Normal Force will be at an even greater angle, and eventually, what happens to the person?



Slides down the ramp! There IS a Net Force on this person because gravity, normal force, and friction (view 'Friction Notes') are NOT in alignment!


F_N
Block A
Surface


F_N
Block B
Surface


Surface
Block C
F_N
Person pushing