


Forces and Friction

Or Not So Smooth

Pp332-336

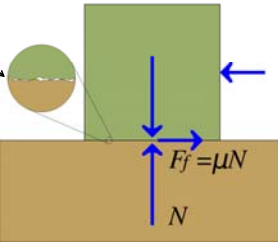
BOX WANTS TO MOVE
IN THIS DIRECTION



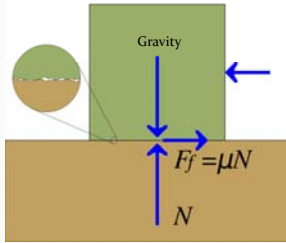
FRICION IS A FORCE THAT
ACTS IN AN OPPOSITE
DIRECTION TO MOVEMENT.

All Surfaces Have Friction

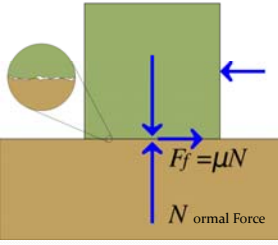
Rough under a microscope



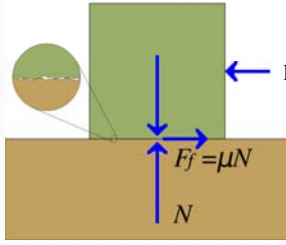
Friction is related to weight



Weight is opposed by the normal force



A force acting to move the object



Is opposed by the force of friction

A diagram showing a green rectangular block on a brown surface. A blue arrow labeled 'Force' points to the left from the right side of the block. A blue arrow labeled 'Friction' points to the right from the bottom surface of the block. A blue arrow labeled $F_f = \mu N$ points to the right from the bottom surface of the block. A blue arrow labeled N points upwards from the bottom surface of the block. A blue arrow labeled 'Gravity' points downwards from the center of the block.

If the Force is larger than Friction, the object will accelerate

A diagram showing a green rectangular block on a brown surface. A blue arrow labeled 'Force' points to the left from the right side of the block. A blue arrow labeled 'Friction' points to the right from the bottom surface of the block. A blue arrow labeled $F_f = \mu N$ points to the right from the bottom surface of the block. A blue arrow labeled N points upwards from the bottom surface of the block. A blue arrow labeled 'Gravity' points downwards from the center of the block. A red arrow labeled 'Acceleration' points to the left from the center of the block.

If the Force the same as Friction, the object will remain static or in constant velocity

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Friction is always less than Gravity

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How much less is dependant on the surfaces

A diagram showing a green rectangular block on a brown surface. A blue arrow labeled 'Force' points to the left from the right side of the block. A blue arrow labeled 'Friction' points to the right from the bottom surface of the block. A blue arrow labeled $F_f = \mu N$ points to the right from the bottom surface of the block. A blue arrow labeled N points upwards from the bottom surface of the block. A blue arrow labeled 'Gravity' points downwards from the center of the block. A red arrow points to the μ in the equation $F_f = \mu N$ with the label 'Coefficient of Friction'.

Air Resistance is a Form of Friction

Two side-by-side photographs of cars. The left image shows a vintage 1928 Ford Model A coupe, a dark-colored open-top car. The right image shows a modern white sports car, likely a Lotus Evija, with a sleek, aerodynamic design.

Friction can be Good



Friction can be Good



Or Friction can be Bad

