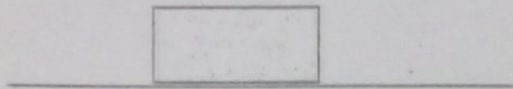


Coefficient of Friction Lab

- 1 Choose a unique combination of surfaces.
- 2 Determine μ_k for the two surfaces using two distinct masses.

Coefficient of kinetic friction:

Draw a force diagram for a block being pulled to the right along the surface of a table at constant velocity.



Surface 1: _____

Surface 2: _____

Since the acceleration of the object is zero, the force of friction will be equal to _____.

According to theory, the coefficient of friction only depends on the surfaces. It does not depend on the normal force. Our purpose is to test that theory.

You will pull the block with one extra kg of mass and then again with two extra kg of mass. Be careful not to accelerate while pulling.

Block plus one extra kg of mass, constant speed

→ or .5 or .1 kg

Mass pulled (block + 1 kg): _____ kg

$$F_N = W = \text{_____ N}$$

$$F_{\text{pull}} = F_{\text{fric}} = \text{_____ N}$$

$$\mu_k =$$

Block plus two extra kg of mass, constant speed

→ different than trial 1.

Mass pulled (block + 2 kg): _____ kg

$$F_N = W = \text{_____ N}$$

$$F_{\text{pull}} = F_{\text{fric}} = \text{_____ N}$$

$$\mu_k =$$

Do you find that the coefficient of friction μ is relatively independent of normal force? *Why or why not?*