Static and Kinetic Friction

Purpose: To study static and kinetic friction.

Materials: Spring scales, wood, various surfaces

Part I – Overcoming Static Friction

- Obtain a flat-sided object (e.g. a block of wood) and attach it to a spring scale to one of them.
- Record the normal force (data will be easier to record if the normal force large).
- Slowly pull the spring scale, keeping the scale as parallel to the surface as possible) watching the value carefully as you pull.
- Record the force just before the object begins to move.
- Calculate the coefficient of static friction.
- Repeat once more with a different normal force.
- Calculate the coefficient of static friction for each trial and take an average.
- Repeat the experiment for a different surface.

Part II – Kinetic Friction

- Record the normal force of an object.
- Slide the object along a surface at a constant speed (the scale should read a constant value; you can use the surfaces from Part I).
- Calculate the coefficient of kinetic friction.
- Repeat once more with a different normal force.
- Calculate the average coefficient of kinetic friction.
- Repeat the experiment for a different surface.