

Activity One: Investigating the Force of Friction

Friction is a force that opposes the movement of objects across a surface. Friction may be unwanted, for example when you're trying to push a piece of furniture across a carpeted floor. Friction may also be helpful. When the brake rubs against the rim of the wheel on your bike, you slow down and stop. Imagine your life without friction.

List three more examples of the force of friction in your daily life.

Part I: Designing the Investigation

In class, you listed several variables that may affect the force of friction. They include:

- Weight
- Amount of surface area
- Type of surface

Your task is to conduct a controlled investigation.

- Which of the above variables will you investigate? _____

This is your **INDEPENDENT VARIABLE (IV)**.

- What will you measure? _____

This is your **DEPENDENT VARIABLE (DV)**.

In a controlled investigation, only **ONE** variable is changed at a time. All other variables are held constant. **Circle the set up** that you will use for each of the variables that you will hold constant or control. For example, if your independent variable is mass, choose one of the choices listed in "Amount of surface area" and one of the choices listed in "Type of surface." **Do not change** these two variables during the investigation.

Independent Variable (IV)	Change 1 or Choice 1	Change 2 or Choice 2	Change 3 or Choice 3
Mass	No added mass	1 kg	2kg
Amount of surface area	Bottom of block	Side of block	End of block
Type of surface area	Carpet	Tile (or other smooth surface)	Sandpaper