FRICTION

Objective: To observe and learn what factors affect FRICTION.

Force: push or pull which can cause motion.

Friction: any two surfaces in contact, rubbing together. Friction is the only force which opposes (stops or slows down) motion.

MEASURING FRICTION

- **"Starting" Friction**: Amount of force to start something moving, to overcome inertia, force keeps object doing what it's doing.
- **"Sliding" Friction**: Amount of force to keep something moving.
- **"Static" Friction:** Amount of force need to start the motion of a stationary object.

MEASURING FRICTION

- **Measuring Force Units:** Newtons (N)
- **Tool:** A Spring Scale is used to measure force.

PROCEDURE

1. Record the amount of friction generated when the brick is pulled across the smooth surface.
2. Take 3 trials and find the average.
3. Record the amount of friction generated when the brick is pulled across the rough surface.
4. Take 3 trials and find the average.
5. Record the amount of friction generated pulling two bricks across a smooth surface.

DATA TABLES

SMOOTH SURFACE

TRIAL	STARTING FRICTION (N)	SLIDING FRICTION (N)
1		
2		
3		
AVERAGE		

DATA TABLES

ROUGH SURFACE

TRIAL	STARTING FRICTION (N)	SLIDING FRICTION (N)
1		
2		
3		
AVERAGE		

QUESTIONS

1. What was the average sliding force of two bricks?_____ N
2. Why is the starting friction greater than the sliding friction?
3. What are three ways that friction can be reduced between two surfaces?

FACTORS THAT AFFECT FRICTION

In any machine, energy is wasted because some of it turns into HEAT:

Decreasing friction = saving energy.

<u>3 factors that affect friction</u>:

1. Amount of contact between surfaces
2. Weight of moving object(s)
3. Smoothness of surfaces