

WEEK: TWO

CLASS: JSS 3

TOPIC: FRICTION

This is the force that opposes the relative motion between two surfaces that are in contact with each other.

EFFECTS OF FRICTION

1. Friction produces heat.
2. Friction causes wears and tears.
3. Friction aids motion/ movement.
4. Friction aids load lifting.
5. Rough surfaces have higher frictional value.
6. Smooth surfaces have lower frictional value.

ADVANTAGES OF FRICTION

1. Walking (locomotion): Friction between ones sole and the ground helps in walking without slipping.
2. Friction belt: Belt drives are able to work because of the friction between the belt and the pulley's rim.
3. Grindstone: It is because of friction that cutlasses, knives etc. can be sharpened on stones by rubbing them on it.
4. Brake: Friction between the brake drum and the brake lining of an automobile bring the car to a halt when they come in contact.
5. Bolt and nut: The threaded surfaces of a bolt and nut give it high friction value, hence, used to hold mechanical pieces together.
6. Tyre: It is the presence of friction between the tyre and the road that makes car motion possible etc.

DISADVANTAGES OF FRICTION

1. Reduction of efficiency: Moving parts of machines encounter a lot of resistance and lots of energy loss on their way to needed operation. So, friction reduces the efficiency of machines.
2. Wears and tears: Friction reduces the size of machines parts because of the contact rubbing against each other which will eventually wears and tears of parts.

Methods of reducing friction

1. By lubrication: To limit the effects of metal-to-metal contacts in machines, the moving parts of the machine are rubbed with a lubricant (grease, oil). Lubricants allow for slippery movement of parts of machines.
2. By the use of ball bearing and rollers: These are small metal balls which can allow a part of a machine to run easily with less rubbing.