

ACTIVITY NO. 12 – STOP! STOP!

Subject	Science
Class	VIII
Chapter/Unit	Friction
Topic	Factors affecting friction
Time	30 minutes
Nature of Activity	Group

What will I learn (Learning Outcome)?

Will experimentally evaluate that friction depends on the nature of the surfaces in contact.

Skills: Applying, Evaluating, Analyzing and Creating

What I have to do?

To show that surface in contact affects the force of Friction.

What do I require?

Sunmica sheet, a sand paper sheet, a spring balance, wooden block with a hook and a wooden table.

What do I need to know?

Friction is the force which opposes the relative motion between two surfaces in contact. It is caused by the irregularities on the two surfaces in contact. The more the irregularities between the two surfaces, the more will be the force of friction.

➤ **Teacher's Activity**

Teacher will-

1. explain the factors which affect friction.
2. make arrangements for the activity
3. make pairs of the students and will explain the steps of the activity.
4. ensure that each participant of the pair performs the activity on his/her own.

.How will I proceed?

➤ **Student's Activity**

1. Attach the wooden block to the hook of the spring balance.
2. Try to pull the wooden block horizontally on the wooden table first by applying a small force on the spring balance.
3. Now spread the sand paper sheet on the table and place the wooden block on it.
4. Try to pull the wooden block horizontally on the sand paper sheet first by applying a small force on the spring balance.
5. What do you observe?
6. Now increase the force gradually on the spring balance till the block starts sliding.
7. Note the position of the pointer of the spring balance, when the block just starts sliding.
8. Now repeat the steps No.4 and 5 with sunmica sheet.

What have I observed?

Surface of contact	Spring balance reading (g) when Wooden block kept on the large edge	Spring balance reading (g) when Wooden block kept on the small edge
1. Wooden table		
2. Sand paper		
3. Sunmica sheet		

What have I learnt?

1. According to the above activity, friction depends on:
 - a. Nature of the surface in contact- Yes/No
 - b. Area of contact - Yes/No
2. For smooth surfaces, friction is _____. For rough surfaces, friction is _____.

What am I curious to learn?

- Let us perform the following activity-
Interlock the two similar sized books by overlapping the pages. Once your books are fully interlocked each person should hold the book by its cover. Now pull firmly to separate the books. (Remember to check around you to ensure that you won't hit anything in case you fall!) What do you find? Are you able to separate the books?
- Let us perform an activity to show the change in static friction with change in weight of the object.

Let me evaluate myself

1. How can we decrease the effect of friction on a body?

2. Why is it difficult to walk on a wet floor?

3. Name the two surfaces between which friction plays the role in the following cases:-

- (i) A student writes, using a chalk, on a board
- (ii) A man turns the lid to open a bottle.

4. Why does it become difficult for a rickshaw puller to pull the rickshaw when three people are sitting on it compared with the situation when only one person is sitting on it?

5. A marble is allowed to roll down an inclined plane from a fixed height. At the foot of the inclined plane, it moves on a horizontal surface

- (a) covered with silk cloth
- (b) covered with a layer of sand and
- (c) covered with a glass sheet.

On which surface will the marble move the shortest distance. Give reason for your answer.
