

# Class 8 Solutions Science Chapter 9 Friction

## Exercises

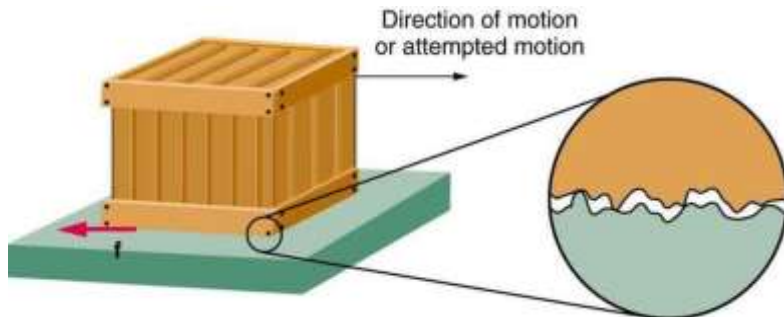
**Q1. Fill in the blanks:**

(a) Friction opposes the \_\_\_\_\_ between the surfaces in contact with each other.

Ans: Motion

(b) Friction depends on the \_\_\_\_\_ of surfaces.

Ans: Nature



Friction force.

(c) Friction produces \_\_\_\_\_.

Ans: Heat

(d) Sprinkling of powder on the carrom board \_\_\_\_\_ friction.

Ans: Reduce

(e) Sliding friction is \_\_\_\_\_ than the static friction.

Ans: Lesser

**Q2. Four children were asked to arrange forces due to rolling, static and sliding frictions in a decreasing order. Their arrangements are given below.**

**Choose the correct arrangement.**

(a) Rolling, static, sliding

(b) Rolling, sliding, static

(c) Static, sliding, rolling

(d) Sliding, static, rolling

**Correct Answer is Option (c)**

**Q3. Alida runs her toy car on dry marble floor, wet marble floor, newspaper and towel spread on the floor. The force of friction acting on the car on different surfaces in increasing order will be :**

(a) Wet marble floor, dry marble floor, newspaper and towel.

(b) Newspaper, towel, dry marble floor, wet marble floor.

(c) Towel, newspaper, dry marble floor, wet marble floor.

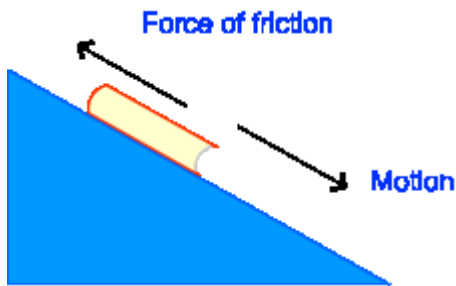
(d) Wet marble floor, dry marble floor, towel, newspaper

**Correct Answer is Option (a)**

**Q4. Suppose your writing desk is tilted a little. A book kept on it starts sliding down. Show the direction of frictional force acting on it.**

Ans: When book slides down on the desk, a frictional force acts between the book and the

surface of the desk. The direction of the friction force on the book is opposite to the direction of its motion and acts in an upward direction. It is shown in the diagram below.



**Q5. You spill a bucket of soapy water on a marble floor accidentally. Would it make it easier or more difficult for you to walk on the floor? Why?**

**Ans:** Friction makes it possible for us to walk on the floor. If a bucket of soapy water spills on the floor, then the force of friction between the ground and feet will decrease. Hence, it would become more difficult to walk on the soapy floor.

**Q6. Explain why sportsmen use shoes with spikes.**

**Ans:** Shoes with spikes offer more friction because of more irregularities in the surface. This gives better grip to sportsmen while running.

**Q7. Iqbal has to push a lighter box and Seema has to push a similar heavier box on the same floor. Who will have to apply a larger force and why?**

**Ans:** Seema has to apply larger force, because friction increases with increase in weight.



**Q8. Explain why sliding friction is less than static friction.**

**Ans:** When something is static, a greater force is required to break the interlocking between two surfaces. When something is in motion, there is no need to break the interlocking and a smaller force is required to keep the object in motion. Hence, sliding friction is less than static friction.

**Q9. Give examples to show that friction is both a friend and a foe.**

**Ans:**

**Advantages of the friction**

- **Due to friction**, we are able to walk.
- We are able to write because of the friction between the **tip of the pen and paper**.

**Disadvantages of friction**

- Because of friction, the **tires and soles of shoes** wear out.

- Friction produces heat between **different parts of the machines**. This can damage the machines.

**Q10. Explain why objects moving in fluids must have special shapes.**

**Ans:** When a body moves through a fluid, it experiences an opposing force which tries to oppose its motion through the fluid. This opposing force is known as the drag force. This frictional force depends on the shape of the body. By giving the objects a special shape, the force of friction acting on it can be minimized. Hence, it becomes easier for a body to move through the fluid.