

CLASS 9

SCIENCE

EXTRA QUESTIONS

Class 9 Science Chapter 6 How Forces Affect Motion – Extra Questions with Answers

Extra practice questions for Class 9 Science Chapter 6 (How Forces Affect Motion), beyond the textbook. These Class 9 Science Chapter 6 important questions are handy for last-minute exam practice.

Contents

Very Short Answer Questions (1 mark)

Short Answer Questions (2–3 marks)

Higher-Order Thinking / Application Questions

Extra practice questions for Class 9 Science Chapter 6 (How Forces Affect Motion), beyond the textbook. These Class 9 Science Chapter 6 important questions are handy for last-minute exam practice.

Very Short Answer Questions (1 mark)

Q1. State Newton's first law of motion in one line.

Ans: An object remains at rest or in uniform motion unless acted upon by an unbalanced force.

Q2. Write the mathematical form of Newton's second law.

Ans: $F = ma$.

Q3. What causes an object to resist a change in its state of motion?

Ans: Inertia.

Q4. Name one way to reduce friction.

Ans: Using a lubricant (or making surfaces smoother, or using ball bearings/rollers).

Q5. Do action-reaction force pairs act on the same object or different objects?

Ans: Different objects.

Short Answer Questions (2–3 marks)

Q6. Explain why a passenger standing in a bus tends to fall backward when the bus suddenly starts moving forward.

Ans: Due to inertia (Newton's first law), the passenger's body tends to stay at rest even as the bus begins moving forward, so relative to the accelerating bus, the passenger appears to fall backward until an external force (like holding a rail) acts on them.

Q7. Two objects of different mass are pushed with the same force. Which one accelerates more, and why?

Ans: The object with less mass accelerates more. From $F = ma$, for a constant force F , acceleration a is inversely proportional to mass m — so a smaller mass results in greater acceleration for the same applied force.

Q8. Why does increasing the surface roughness of tyres improve a vehicle's grip on the road?

Ans: Rougher surfaces increase the friction between the tyres and the road. This higher friction provides more resistance against slipping, giving the tyres better grip, especially important for acceleration, braking, and turning.

Higher-Order Thinking / Application Questions

Q9. A rocket in deep space, far from any planet's gravity, fires its engines briefly and then shuts them off. Using Newton's first law, predict and explain what happens to the rocket after the engines are turned off.

Ans: According to Newton's first law (law of inertia), once the engines are off and no unbalanced force acts on the rocket (no friction or gravity in deep space), the rocket will continue moving in a straight line at the constant velocity it had when the engines shut off, rather than slowing down or stopping.

Q10. When a bullet is fired from a gun, the gun recoils backward. Explain this using Newton's third law, and predict how the recoil speed of the gun compares to the bullet's speed if the gun has much greater mass.

Ans: By Newton's third law, the force propelling the bullet forward (action) is matched by an equal and opposite force pushing the gun backward (reaction) — this is the recoil. Since the gun has much greater mass than the bullet, and momentum is conserved (equal magnitude of momentum change for both, being $m \times v$), the gun's recoil velocity is much smaller than the bullet's velocity, even though the force experienced by both is equal in magnitude.

See also: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#) | [Chapter 5](#) | [Chapter 6](#)

Practice more: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#) | [Chapter 5](#)

Quick revision: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#) | [Chapter 5](#)