

Nova's Forces Fun Quiz

Learning objective: To identify and describe the effects of air resistance, water resistance, and friction as forces that act between moving surfaces, and to recognize that some mechanisms, including levers, pulleys, and gears, allow a smaller force to have a greater effect.

Join Nova the owl as she explores how things move! Read each question carefully and circle the best answer. Good luck, young scientist!

Answer Key: 1. A (Gravity); 2. True; 3. C (Friction); 4. False (It slows things down); 5. Pulleys; 6. B (Streamlined); 7. True; 8. Gears; 9. Newton; 10. True. Nova says: Well done for thinking like a scientist today!

Word bank: Friction · Resistance · Gravity · Levers · Gears · Pulleys · Newton · Surface

1. 1. Which force pulls everything down towards the center of the Earth? A) Gravity* B) Magnetism C) Friction D) Upthrust (1 mark)

2. 2. True or False: Friction is a force that acts between two surfaces that are sliding, or trying to slide, across each other. (1 mark)

3. 3. Which of these is a force that slows down an object moving through the air? A) Magnetism B) Gravity C) Air resistance* D) Upthrust (1 mark)

4. 4. True or False: Water resistance helps objects move faster through the water. (1 mark)

5. 5. What do we call a wheel with a grooved rim around which a cord passes, used to help elevator heavy loads easily? (1 mark)

6. 6. To reduce water resistance, a boat should be shaped to be: A) Square B) Streamlined* C) Very rough D) Heavy (1 mark)

7. 7. True or False: A lever is a simple machine that can help us move a heavy load using less effort. (1 mark)

8. 8. What do we call the toothed wheels that work together to change the speed or force of a movement? (1 mark)

9. 9. What is the unit used to measure force? (Hint: It is named after a famous scientist). (1 mark)

10. 10. True or False: Rough surfaces usually create more friction than smooth surfaces. (1 mark)

Draw: Draw a diagram of a bicycle, labelling where you might find gears and how friction helps the tyres grip the road.



Extension challenge: Research how a parachute uses air resistance to help a skydiver land safely. Write a short paragraph explaining the process in your own words.