

YEAR 7 SCIENCE
PHYSICAL SCIENCES
REVISION - FORCES

1. (a) Describe **two** ways in which a force can be identified when acting on an object.

- Change shape.
- Change movement or direction.

- (b) Give an example for each method listed in part (a).

- Stretch a rubber band.
- 2 marbles colliding.

2. Give **two examples** for each of the following.

- (a) A force acting in contact.

- Push Explosion Collision.
- Pull Friction

- (b) A force acting at a distance.

- gravity
- magnetism
- electric charge.

3. (a) What is **friction**?

- Force between 2 surfaces that rub together.

- (b) In which direction does friction act?

- Opposite direction to movement.

4. Describe **two** examples of applications where friction is:

(a) maximised.

- On the bottom of my shoes when I walk.
- Brakes of a car.

(b) minimised.

- Ice hockey - skates + puck.
- Flying a plane.

5. (a) What is meant by the term **weight**?

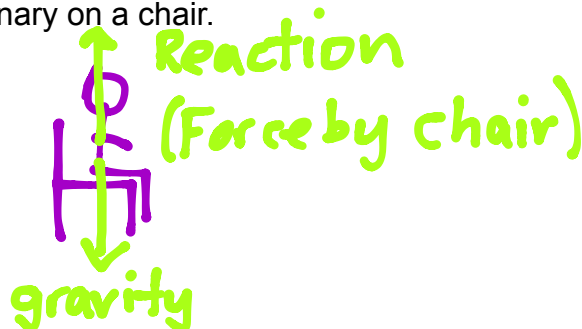
Force due to gravity.

(b) If you are floating around in the International Space Station in orbit above the Earth, do you still have a weight? Explain your answer.

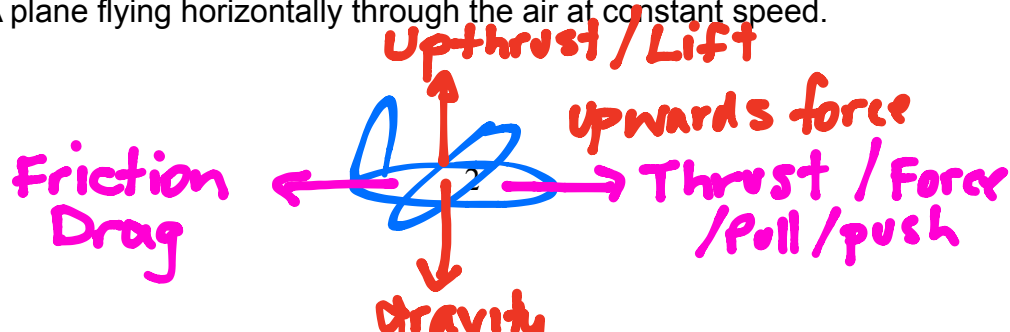
Yes - Earth's gravity pulls on me!

7. Draw a simple diagram to show the forces acting in the following situations.

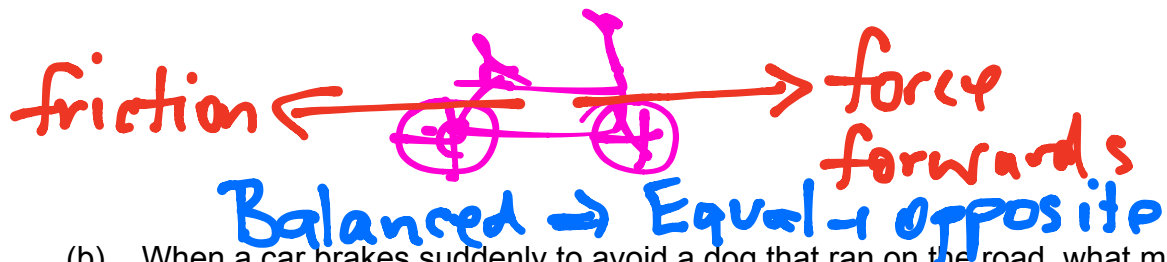
(a) A person sitting stationary on a chair.



(b) A plane flying horizontally through the air at constant speed.



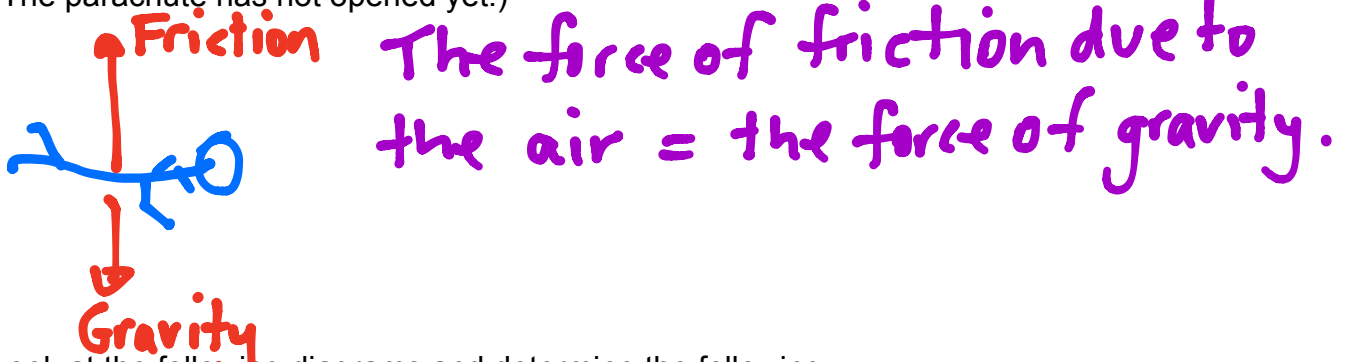
8. (a) When you are riding a bicycle at a constant speed, what must be true about the force you exert through the pedals to push the bike forwards, and the frictional forces acting on you and the bike?



- (b) When a car brakes suddenly to avoid a dog that ran on the road, what must be true about the forces acting on the car?



9. When a person jumps from a plane during a parachute jump, they reach a terminal speed of about 230 kmh^{-1} as they fall. Why do they stop accelerating while falling? (The parachute has not opened yet.)



10. Look at the following diagrams and determine the following:

- The direction of movement - the direction of the overall force.
- The size of the final force.

