ATHERTON HIGH SCHOOL

P2.1 Movement and Pressure **Knowledge Organiser**

Speed

1. Speed is how much distance is covered per unit time
2. Speed = Distance/Time
3. The SI unit for speed is m/s
4. If an object is stationary its speed is 0 m/s
5. Average speed is the overall distance divided by the overall time taken for a journey

$$Speed = \frac{Distance}{Time}$$

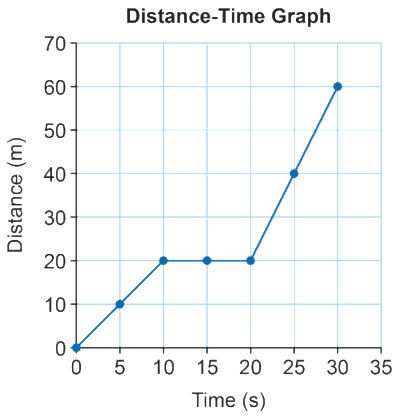
$$Time = \frac{Distance}{Speed}$$

$$Distance = Speed\ x\ Time$$

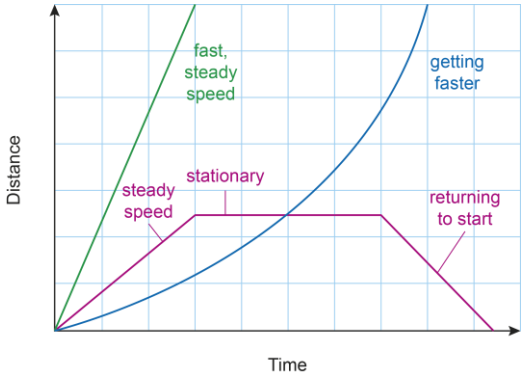
6. Relative motion describes how different observers judge speed differently if they are in motion too
7. If an observer is stationary, the relative motion of the moving object will be the same as its actual speed
8. If an observer is travelling in the same direction as the moving object, the relative motion is the difference in their speeds and the object will seem to be moving more slowly
9. If an observer is travelling in the opposite direction as the moving object, the relative motion is their speeds added together and the object will seem to be moving faster
10. Acceleration describes how quickly a speed is changing (either speeding up or slowing down)
11. An object speeding up has positive acceleration
12. An object slowing down has negative acceleration

Distance–Time Graphs

13. A distance-time graph can be used to describe an object's motion
14. A horizontal line represents a stationary object (speed = 0m/ s)



15. A straight line represents an object moving at constant speed
16. The gradient of a distance-time graph represents speed
17. The steeper the gradient the greater the speed
18. A line returning to the x-axis represents an object returning to its starting position
19. A curved line represents an object accelerating



Pressure

20. Pressure is the force applied per unit area.
21. Pressure (N/m^2) = Force (N)/ area (m^2)
22. Pressure is increased by a smaller area and decreased by larger area
23. Pressure is increased by a larger force and decreased by a smaller force

Moments

24. A moment is the turning effect of a force
25. Moment (Nm) = Force (N) x perpendicular distance from pivot (m)