

# 9K Speeding up

## Extension questions

Science Interactive LTD, PO BOX 50764 LONDON NW6 9AT email: [sales@science-interactive.co.uk](mailto:sales@science-interactive.co.uk)

web: [www.science-interactive.co.uk](http://www.science-interactive.co.uk)

Answer the following questions:



Click mouse to reveal answer

Q1. What does the speed of an object tell us?

Q2. The speed of a moving object is measured in?

Q3. How do you calculate the speed of an moving object?

Q4. A car travels 240 kilometres in 3 hours...what is its average speed?

Q5. What is the opposite to acceleration?

Q6. If the forces acting on an object are unbalanced its speed will?

Q7. What is the rate of changing velocity (direction or speed) called?

Q8. What is a force of compression between two objects commonly called?

Q9. What is the swirly flow in a fluid called?

Q10. What is friction?

Q11. Air resistance acting on a moving object will?

Q12. What are the forces acting on a sky diver as he falls to Earth?

Q13. The amount of air resistance acting on moving object is affected by two things...what are they both?

Q14. What does aerodynamic mean?

Q15. What has a more aerodynamic shape a lorry or a sports car?

Q16. When you brake, a car begins to slow to a stop. What has the kinetic energy of the car been converted into?

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### Answers:

A1. How many metres a moving object travels during a certain time

A2. Metres per second

A3. Divide the distance travelled (m) by the time taken (s)

A4. 80 kilometres per hour

A5. Deceleration

A6. Change

A7. Push

A8. Acceleration

A9. Turbulence

A10. The force that stops two surface moving over each other

A11. Slow it down

A12. Gravity (downwards) Air resistance (upwards)

A13. Its speed its shape (profile)

A14. Streamlined

A15. Sports car

A16. Heat energy

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multiple choice

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Click mouse to reveal answer

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1: A racing car is said to be streamlined or aerodynamic. What does this mean ?

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- A It looks cool
  - B It has low air resistance
  - C It goes very fast
  - D It has good brakes
- 

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2: What is the equation that works out the speed of a moving object

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- A  $\text{Speed} = \text{distance moved} \times \text{time}$
  - B  $\text{Speed} = \text{distance moved} / \text{time}$
  - C  $\text{Speed} = \text{distance moved} \times \text{direction}$
  - D  $\text{Speed} = \text{direction} \times \text{time}$
- 

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3: What statement is not true about friction between two objects ?

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- A It depends on their surface
  - B It depend on how fast they move
  - C It depends on their colour
  - D It depends on if either is smooth
- 

---

4: A runner takes 10 minutes to run 2.4 kilometres. His speed is ?

---

- A  $1.2 \text{ ms}^{-1}$
  - B  $2 \text{ ms}^{-1}$
  - C  $0.4 \text{ ms}^{-1}$
  - D  $4 \text{ ms}^{-1}$
-

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multiple choice

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1: A racing car is said to be streamlined or aerodynamic. What does this mean ?

A

B It has low air resistance

C

D

2: What is the equation that works out the speed of a moving object

A

B Speed = distance moved / time

C

D

3: What statement is not true about friction between two objects ?

A

B

C It depends on their colour

D

4: A runner takes 10 minutes to run 2.4 kilometres. His speed is ?

A

B

C

D 4 ms<sup>-1</sup>

# 9K Speeding up

## literacy in science

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Answer all the questions below:

 Click mouse to reveal answer

1) Unscramble the following words:

sdpee

otinfric

aceranctioel

vocietyl

2) Make three sentences using the following nine words or phrases:

force applied  
friction  
falling object

speed up  
between moving  
Speeds up

slow down  
objects  
terminal velocity

3) Match the word or phrase with the right meaning:

Speed

The maximum speed an object goes falling through air

Terminal velocity

An object that has an aerodynamic shape to cut through air

Streamlined

The distance traveled, divided by the time taken

Answer all the questions below:

1) Unscramble the following words:

speed

friction

acceleration

velocity

2) Make three sentences using the following nine words or phrases:

force applied  
friction  
falling object

speed up  
between moving  
Speeds up

slow down  
objects  
terminal velocity

3) Match the word or phrase with the right meaning:

Speed

The distance traveled, divided by the time taken

Terminal velocity

The maximum speed an object goes falling through air

Streamlined

An object that has an aerodynamic shape to cut through air

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## complete the sentence

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Place the right word or words to complete the sentence:

 Click mouse to reveal answer

liquid

speed

sports

maximum

increase

drag

changes

direction

travelled

- a) To calculate an object's \_\_\_\_\_ you must divide distance travelled by time taken.
- b) A distance time graph shows how an object's speed \_\_\_\_\_ during a journey.
- c) An unbalanced force can change an object's speed, \_\_\_\_\_ of travel and/or shape.
- d) Terminal velocity is the \_\_\_\_\_ speed that a falling object will travel through air.
- e) An \_\_\_\_\_ in an object's speed is called acceleration.
- f) If an object has \_\_\_\_\_ 10 km in 30 minutes, its speed will be 20 kmh<sup>-1</sup>.
- g) The \_\_\_\_\_ on a moving object through a liquid or gas is determined by its speed and shape.
- h) A drag force acts when an object moves through a gas or \_\_\_\_\_ .
- i) Streamlining a \_\_\_\_\_ car reduces the drag force.

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## complete the sentence

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Place the right word or words to complete the sentence:

liquid

speed

sports

maximum

increase

drag

changes

direction

travelled

- a) To calculate an object's speed you must divide distance travelled by time taken.
- b) A distance time graph shows how an object's speed changes during a journey.
- c) An unbalanced force can change an object's speed, direction of travel and/or shape.
- d) Terminal velocity is the maximum speed that a falling object will travel through air.
- e) An increase in an object's speed is called acceleration.
- f) If an object has travelled 10 km in 30 minutes, its speed will be 20 kmh<sup>-1</sup>.
- g) The drag on a moving object through a liquid or gas is determined by its speed and shape.
- h) A drag force acts when an object moves through a gas or liquid.
- i) Streamlining a sports car reduces the drag force.