

SCIENCE, TECHNOLOGY, ENGINEERING AND MATHS (STEM) QUIZ



Test your knowledge and expertise with our fun STEM quiz.

The following questions are for a range of abilities and year groups. Get your friends and family together and learn more about how STEM applies to the world around you.

Have fun and good luck!



Team name: _____



THE ENVIRONMENT

Please circle the correct answer.

1. Choose the correct pairing of words to complete the sentence.

Plants use _____ during photosynthesis and produce _____

- A. Carbon dioxide carbon monoxide
- B. Liquid oxygen cardon dioxide
- C. Carbon dioxide oxygen
- D. Compost methane

2. **What can we do to reduce the rate of global temperature rise?**

- A. Reduce our carbon footprint.
- B. Increase our use of sustainable power.
- C. Offset carbon emissions through approved environmental schemes.
- D. All of the above.

3. Which metal is usually used to make the batteries for electric vehicles?
- A. Lithium
 - B. Uranium
 - C. Aluminium
 - D. Lead
4. Which form of the sun's energy provides solar power?
- A. Heat
 - B. Light
 - C. Both
 - D. Neither
5. Which alternative forms of energy cause less pollution than burning carbon fuels?
Circle all that apply.
- A. Wind
 - B. Wave and water
 - C. Nuclear
 - D. Solar
6. Roughly how long does it take sunlight to reach Earth?
Circle the correct answer.
- A. 8 seconds
 - B. 8 minutes
 - C. 8 hours
 - D. 8 days

MOTION AND FORCES

7. What does speed measure?
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8. Complete the word equation below:

Distance equals speed multiplied by _____

9. If a fighter jet flies at 540 mile per hour, how many miles does it travel in a minute?

10. Who developed the 3 laws of motion? Circle the correct answer.

- A. John Travolta
- B. Isaac Newton
- C. Pythagoras
- D. Nikola Tesla

11. Using the diagram below, label the forces that act on an aircraft as it accelerates from 300 kts to 500 kts, as indicated by the arrows?



12. If you hit a cotton ball and a golf ball with a golf club using the same force, which ball would accelerate the most? Circle the correct answer.

- A. They would accelerate equally but the golf ball would travel further.
- B. The golf ball because it has more inertia.
- C. The cotton ball because it has less mass.
- D. The mud that I hit instead of the cotton ball or golf ball.

13. If you throw a ball in the air, what forces are most likely to cause it to stop? Circle the correct answer.

- A. Friction and gravity
- B. Wind resistance and magnetism
- C. Inertia and magnetism
- D. Gravity and inertia

14. Name the force that pushes you into your seat as an aircraft turns?

- A. Negative g force
- B. Positive velocity force
- C. Positive g force
- D. Lateral drag

**15. What is the correct formula for acceleration?
Circle the correct answer.**

- A. Acceleration = change in speed x force
- B. Acceleration = change in time ÷ velocity
- C. Acceleration = change in velocity ÷ time taken
- D. Acceleration = time between 2 points ÷ 2

FREQUENCY AND WAVES

16. Circle the correct definitions:

- A. The frequency of a wave is the vertical distance that a wave travels from its starting position.
- B. Wavelength is the horizontal distance between the same two points on any wave.
- C. Hertz (Hz) is the measure of frequency.
- D. Sounds are caused by the vibration of particles.

17. We've provided a list of words. Use some of them to complete the paragraph underneath.

faster / slower / distance / direction / seconds / minutes / miles / metres / curved / straight

“ Light waves can travel much _____ than sound waves. A light year is the _____ light travels in one year. Light from the sun takes just over eight _____ to travel the 150,000,000,000 _____ from the Sun to Earth. Light always travels in _____ lines. ”

18. Write the equation for wave speed using the components listed below:

- A. Velocity (v) in metres per second (m/s)
- B. Frequency (f) in hertz (Hz)
- C. Wavelength (λ) in metres (m)

19. We've provided a list of words. Use some of them to complete the sentence underneath.

light / sound / ships / aircrafts / rockets / sharks

“ Echo sounding uses _____ waves and it used by _____ to detect the seabed or shoals of fish. ”

20. Circle the correct answers:

- A. On the electromagnetic spectrum gamma rays have a higher frequency than microwaves.
- B. Light visible to the human eye sits between infrared and ultra-violet waves.
- C. Ships use long wave radio because they are in the sea.
- D. Wavelength decreases with frequency.

Score out of 20: /20

Well done!
