STEM Quiz 2 (Age 11 – 16)

This quiz can be played in teams or individually, and is suitable for ages 11 to 16

There are five rounds to the quiz:

Round 1: Our World in Motion
Questions about the wonders of our world in motion

Round 2: Physics and Space
Questions about forces, motion, energy and space

Round 3: Engineering
Questions about famous feats of engineering and the way things work

Round 4: Chemistry
Questions about materials, changes and chemicals

Round 5: Biology
Questions about living things
Round 1: Our World in Motion

1) What is the fastest animal in the world?
   A Cheetah
   B Sail fish
   C Peregrine falcon
   D The three toed sloth

2) What are the moving plates of the earth’s crust called?
   A Dinner plates
   B Tectonic plates
   C Volcanic plates
   D Hydraulic plates
Round 1: Our World in Motion

3) When animals move a long way to another habitat in search of food, it is known as?
   A   Immigration
   B   Moving house
   C   Migration
   D   Displacement

4) The sea has two high tides and two low tides per day. What causes the sea to move like this?
   A   The gravitational pull of the sun and the moon
   B   Wind
   C   The earth’s magnetic field
   D   The heat of the sun
Round 1: Our World in Motion

5) What is the approximate speed of light?
   A. Three thousand metres per second
   B. Three million metres per second
   C. Three hundred million metres per second
   D. Three billion metres per second
Round 2: Physics and Space

1) What is the name given to the rocks in orbit around the Sun between Mars and Jupiter?
   A Satellites
   B Moons
   C Asteroids
   D Kuiper belt objects

2) A wind turbine transforms movement energy mainly into what other form of energy?
   A Heat
   B Sound
   C Light
   D Electrical
Round 2: Physics and Space

3) How long does the earth take to complete one orbit of the sun?
   A  A day
   B  A week
   C  A month
   D  A year

4) What type of materials are good thermal conductors and good electrical conductors?
   A  Plastics
   B  Glass
   C  Metals
   D  Ceramics
Round 2: Physics and Space

5) In Albert Einstein’s famous equation, \( E=mc^2 \), what does the letter \( E \) stand for?
   
   A Einstein  
   B Energy  
   C Explosion  
   D Entropy
1) Which of these famous engineering projects was completed most recently?
   A The Millennium Dome
   B The Birmingham Bull Ring
   C The Channel Tunnel
   D The Airbus A380 superjumbo jet

2) How could an engineer help reduce the amount of greenhouse gasses we produce?
   A By designing faster ways of digging coal from the ground
   B By studying the effects of greenhouse gasses on our climate
   C By building extra power stations
   D By designing cars that use less fuel
Round 3: Engineering

3) What kind of engineer might help to produce artificial limbs for humans?
   A Automotive engineer
   B Electrical engineer
   C Biomedical engineer
   D Aeronautical engineer

4) How are computers connected to the internet?
   A Through satellite signals
   B Through metal wires
   C Through optical fibres
   D Through power lines
Round 3: Engineering

5) What is the world speed record for a solar powered car?

A  74 kilometres per hour
B  88 kilometres per hour
C  97 kilometres per hour
D  115 kilometres per hour
Round 4: Chemistry

1) To separate solid salt from a solution, what would you do to the solution?
   A  Filter it
   B  Heat it to evaporate the liquid
   C  Drink the solution
   D  Cool the solution to 0 degrees Celsius

2) A kettle boiling is an example of?
   A  An irreversible process
   B  A chemical reaction
   C  An oxidation reaction
   D  A change of state
Round 4: Chemistry

3) Roughly how many atoms make up the head of a pin?
   A One thousand
   B One million
   C One trillion
   D One billion trillion

4) Rusting is an example of what kind of reaction?
   A Reversible
   B Physical
   C Irreversible
   D Explosive
Round 4: Chemistry

5) Which is the only pure metal that is liquid at room temperature?
   A  Iron
   B  Tin
   C  Tungsten
   D  Mercury
Round 5: Biology

1) Yeast and bacteria are examples of what?
   A  Elements
   B  Plants
   C  Micro-organisms
   D  Mammals

2) As well as certain nutrients and oxygen, what other three things do plants need to grow?
   A  Sugar, air and water
   B  Carbon dioxide, water and light
   C  Earth, wind and fire
   D  Shade, air and sand
Round 5: Biology

3) Which organ in your body contains hydrochloric acid?
   A  Stomach
   B  Eye
   C  Liver
   D  Kidneys

4) Excess fertilisers from fields that wash into rivers and streams can cause algae to overgrow. What is the main problem with this?
   A  The algae looks bad
   B  All algae is poisonous
   C  The algae smells horrible
   D  Algae blocks out light, causing other water plants to die
Round 5: Biology

5) What proportion of food crops are pollinated by insects, birds or animals?
   
   A  One third
   B  Two thirds
   C  All of them
   D  None of them

End of Quiz