



**EVERYONE SITTING COMFORTABLY?**

Brains on top form?

OK, then it's time to challenge your loved ones to a few rounds of challenging quiz-questions...

Coming up are 10 questions on each of seven diverse topics. You'll need to elect a question master, and give all players pens and paper to record their answers. When you've finished each round, the question master will check everyone's score against the answers at the bottom of each page. You can then enter these on the score sheet below.

Prizes can provide an an extra incentive to a top performance. And cheating will obviously NOT be tolerated... GOOD LUCK!

**SCORE SHEET**

<b>QUIZ</b>						
Spies & Codes						
Biomimetic						
Inspiration						
Food						
Sound						
Space						
TW Live						
<b>TOTALS</b>						

## HORRIBLE QUIZ

1. What animal kills its prey by holding on tighter every time its victim breathes out?
  - a. A boa constrictor
  - b. A tiger
  - c. A grizzly bear
2. What is an emetic?
  - a. Something that causes you to vomit.
  - b. Something that causes you to sneeze.
  - c. Something that causes your hair to fall out.
3. Which disease, caused by a parasite carried by mosquitoes, makes a person's spleen and liver enlarge?
  - a. Malaria
  - b. Cholera
  - c. Flu
4. If for some horrible reason, you fell from the sky without a parachute what would it be best to land on if you wanted to survive?
  - a. Snow, it causes you to slow down slowly and lessens the impact
  - b. A flag pole, because the area of impact is very small.
  - c. The ground, because it quickly brings you to a stop.
5. Which gas in farts make them smell bad?
  - a. Nitrogen
  - b. Carbon dioxide
  - c. Hydrogen sulphide
6. Oi you - is that a brain or a blancmange under your hat? How much of your brain is *water*?
  - a. 70%
  - b. 80%
  - c. 95%
7. Jaundice and black vomit are symptom of which disease?
  - a. Yellow fever
  - b. Scarlet fever
  - c. Black fever
8. What are an insect's 'mandibles'?
  - a. Its buttocks
  - b. Its antenna
  - c. Its front jaws
9. Which of the following plants does NOT catch and digest insects...?
  - a. The Pitcher Plant
  - b. The Soup Dragon
  - c. The Venus Flytrap
10. Acids can be dangerous ... but *ascorbic acid* is essential in our diet. If you don't get enough, which horrible disease would you get?
  - a. Mumps
  - b. Scurvy
  - c. Malaria

## TICK TICK TIME QUIZ

1. **When the Sun is at its highest point in the sky, what time is it?**
  - a. Midday
  - b. Bedtime
  - c. Dawn
2. **How is the human body clock reset each day?**
  - a. By the noise of an alarm clock.
  - b. By light from the Sun.
  - c. By getting 8 hours sleep.
3. **Sundials are some of the oldest clocks, but how do they work?**
  - a. The Sun casts a shadow of a pointer onto a flat disk.
  - b. Energy from the Sun is used to generate electricity that moves a pointer.
  - c. The Sun's heat expands a metal pointer forcing it to bend.
4. **What is a light year?**
  - a. It is the distance that light travels in one year.
  - b. It is a year with more than 200 sunny days.
  - c. It is the time it takes light to travel from outside the solar system to the Earth.
5. **Why is there a leap year every four years?**
  - a. A year is really 365.25 days long so one extra day is added every four years.
  - b. Julius Caesar wanted certain years to be extended in his honour.
  - c. Every four years the Earth slows fractionally down making the year slightly longer.
6. **According to special relativity you can stay younger if you do what?**
  - a. Travel close to the speed of light.
  - b. Travel close to the speed of sound.
  - c. Travel close to the speed of Concorde.
7. **What's special about an equinox?**
  - a. It is the longest day of the year.
  - b. It is a day when there are 12 hours of daylight and 12 hours of darkness.
  - c. It is a day when the Moon covers the Sun, blocking out the light.
8. **Physicists can only investigate the history of the Universe up to a tiny fraction of a second after the Big Bang. What is this fraction called?**
  - a. The Iota Interval
  - b. The Planck Time
  - c. The Mobius Strip
9. **If it is 2 pm on New Year's Day in London, what time is it at the North Pole?**
  - a. 2 pm
  - b. Midday
  - c. 6 pm
10. **How many seconds are there in a leap year?**
  - a. 19764200
  - b. 31622400
  - c. 79056000

## MAGNETIC MAYHEM QUIZ

- 1. What causes the Earth's magnetic field?**
  - a. The Earth's liquid iron core sloshing around as it spins.
  - b. Electric eels swimming in the Pacific Ocean.
  - c. A mountain of iron at the North Pole.
- 2. Which of the following objects is attracted to a magnet?**
  - a. An aluminium drink can.
  - b. A rubber duck.
  - c. A steel drink can.
- 3. The location of the magnetic North Pole slowly drifts around. Whereabouts is it now?**
  - a. In the Arctic Ocean in northern Canada.
  - b. The Sahara Desert.
  - c. The Bermuda Triangle.
- 4. MRI scans can produce images of inside the body by manipulating magnetic fields. What does MRI stand for?**
  - a. Magnetic resonance imaging.
  - b. Massive reordering of isotopes.
  - c. Magnetic restructuring index.
- 5. The Earth's magnetic field periodically flips, which of the following is evidence for this?**
  - a. Ancient magnetic rocks retain patterns of the old direction of the field.
  - b. Old homing pigeons forget the new direction and often get lost on the way home.
  - c. The hole in the ozone layer.
- 6. How does the Earth's magnetic field shield us from hazards from space?**
  - a. It deflects asteroids that are on a collision course with Earth.
  - b. It deflects hostile alien probes, hiding our presence from them.
  - c. It deflects damaging high-energy particles from the Sun.
- 7. Which way would your compass point if you were at the magnetic North Pole?**
  - a. It would point towards the equator.
  - b. It would spin round and round, very fast.
  - c. It would bend down towards the ground.
- 8. How could you magnetise a needle to make your own compass?**
  - a. Stroke it from head to point with a magnet repeatedly.
  - b. Bend it into an L-shape, leave for a week, then unbend.
  - c. Hold it close to a cassette recorder which is on record.
- 9. Why might dropping a magnet stop it from working?**
  - a. The sudden action of gravity disrupts the magnetic field.
  - b. It realigns itself with the Earth's magnetic field.
  - c. The force of impact disrupts the alignment inside the magnet.
- 10. Which of the following might demagnetise a magnet?**
  - a. Putting it in the freezer.
  - b. Leaving it in the dark for a month.
  - c. Heating it up.

## BIRD BRAIN QUIZ

1. According to the RSPB's Big Garden Birdwatch 2002, what is the commonest bird recorded in the UK?
  - a. Starling
  - b. Blue footed boobie
  - c. Emu
2. Which of the following is NOT a possible explanation for how homing pigeons find their way home?
  - a. They form a mental map of their surroundings.
  - b. They seem to use the Earth's magnetic field to guide them.
  - c. They stop other birds and ask for directions.
3. Which species of bird has the fastest wing beat?
  - a. Hummingbird
  - b. Albatross
  - c. Chicken
4. What bird is famous for laying its eggs in other birds' nests?
  - a. Sparrow
  - b. Cuckoo
  - c. Magpie
5. Why don't you ever see baby pigeons?
  - a. Pigeons hatch fully grown.
  - b. Pigeons are born in the arctic and migrate south when they become adults.
  - c. Pigeons stay hidden in their nests until they are able to fly.
6. What are bird watchers also known as?
  - a. Sniffers
  - b. Scratchers
  - c. Twitchers
7. Why don't woodpeckers get a headache when they peck?
  - a. Their beak is made of rubber.
  - b. Their specially adapted skull contains shock absorbers.
  - c. Their immune system produces its own form of painkiller.
8. Why are flamingoes pink?
  - a. The shrimps and algae that they eat contain a pigment that dyes their feathers.
  - b. The colour acts as camouflage because hyenas can't see pink.
  - c. Flamingoes are the only bird to have blood flowing through their feathers.
9. What is the largest angle owls can rotate their heads through?
  - a. 280 degrees
  - b. 360 degrees
  - c. 90 degrees
10. What's the collective noun for a group of crows?
  - a. A murder
  - b. A kill
  - c. A deathwatch

## ECO QUIZ

1. Ultimately, where does the energy within any ecosystem come from?
  - a. The National Grid
  - b. Wind blowing through the trees
  - c. Sunlight used by plants in photosynthesis
2. Which animal was thought to be extinct but was found alive in the Indian Ocean in 1938?
  - a. Coelacanth - a very ugly fish
  - b. Dodo - a fat bird
  - c. Ichthyosaur - a marine reptile
3. Which type of ecosystem contains half of the species on Earth?
  - a. Arctic tundra
  - b. Coral reef
  - c. Tropical rainforest
4. What is the ratio of insect species to mammal species on the Earth?
  - a. 50:1
  - b. 200:1
  - c. 100,000:1
5. What is a niche?
  - a. A small nook in a tree where birds rest
  - b. The role an organism plays in an ecosystem
  - c. A flan made from nuts
6. Which ecosystem on Earth gives hope of finding life on Mars where oxygen is not available?
  - a. Microbes within the clouds high in the atmosphere
  - b. Organisms in hot pools beneath the Earth's surface
  - c. Underground fungi attached to the deep roots of trees
7. Which of the following species was a surprise recent discovery?
  - a. A new gnu
  - b. A camel with extra hairy kneecaps
  - c. A fish that cannot swim
8. In just 18 months, 3 million red land crabs on Christmas Island were killed by which invasive species?
  - a. Crazy ants
  - b. Frantic ferrets
  - c. Hungry hippos
9. Roughly how many species are estimated to become extinct each day?
  - a. 2
  - b. 120
  - c. 1750
10. Which of these organisms is a 'scavenger' - and eats the remains of other dead organisms?
  - a. Venus Fly Trap
  - b. Bumble bee
  - c. Earthworm

## MONEY QUIZ

- 1. When you put your cash card and PIN into a cash machine, how does it recognise the account?**
  - a. A member of staff in the bank picks up the card, reads the numbers and checks them against a list.
  - b. The account information is held in the black magnetic strip on the back of the card.
  - c. The machine uses laser light to read your name on the front of the card.
- 2. Ordinary paper is made from wood but paper money in the UK is made from cotton and linen. Why?**
  - a. It is traditional to have money made out of fabric.
  - b. It makes it tougher - the cotton fibres hold together better than wood fibres.
  - c. It makes it much easier to wash - this is commonly known as money laundering.
- 3. The Royal Mint say that a £1 coin could be squashed by a weight of approximately 55 tonnes. To squash a coin what would you need to stand on it?**
  - a. 10 large African elephants.
  - b. 10 Polar bears.
  - c. 2 people.
- 4. Which scientist is on the new £10 note?**
  - a. Charles Darwin.
  - b. Stephen Hawking
  - c. Albert Einstein
- 5. When did the first fully printed paper money appear in the UK?**
  - a. 10,000 BC - bartering with beads was rapidly replaced with printed bank notes.
  - b. 1855 - before this every single bank note was signed by hand at the Bank of England.
  - c. 1971 - when decimal currency was introduced.
- 6. What are Australian bank notes made out of?**
  - a. Eucalyptus leaves - in Australia money really does grow on trees.
  - b. Plastic - it is thought to last longer than many other materials and is washable.
  - c. There are no Australian bank notes - people pay with coins or cheques.
- 7. What are the main metals present in a ten pence piece?**
  - a. Uranium and Steel.
  - b. Sodium and Chlorine.
  - c. Copper and Nickel.
- 8. What is the largest value bank note currently in general use?**
  - a. 500 Euro - it's worth just over £300 Sterling.
  - b. 500 Swiss Francs - this can buy you enough Swiss chocolate to cover the Alps.
  - c. 10,000 Yen - this is the size and shape of a bank note but it is made of engraved steel
- 9. £1 sterling = 6,000 Zambian Kwacha. If you had 1,200,000 Kwacha what could you buy?**
  - a. A chocolate bar.
  - b. A new games console.
  - c. A brand new Ferrari.
- 10. Which of the following coins can you still use today?**
  - a. Farthing.
  - b. Half-crown.
  - c. Sovereign.

## NOBEL QUIZ

- 1) Niels Bohr won the physics prize in 1922 for establishing the structure of the atom. In 1940 Denmark was occupied by the Germans and he hid two fellow winners' gold medals from the Nazis. How did he do this?
  - a. He dissolved them in acid, then left them in unmarked jars in his lab
  - b. He melted them and had them cast into cufflinks
  - c. He cut out sections of his notebooks and concealed them in his library.
- 2) Alexander Fleming, Ernst Chain and Howard Florey won the medicine prize in 1945 for the discovery of penicillin, the first antibiotic. From what substance was penicillin obtained?
  - a. A mould
  - b. A flower
  - c. A sea-sponge
- 3) What was Alfred Nobel's own most famous invention?
  - a. Canned food
  - b. Dynamite
  - c. The motor car
- 4) Ronald Ross won the medicine prize in 1902, for showing how the malaria parasite enters humans. How does it?
  - a. Infected mosquitoes transmit the parasite when they bite humans
  - b. Humans catch the parasite from drinking infected water
  - c. Infected people can transmit the parasite by coughing on healthy humans
- 5) Which father and son team won the 1915 physics prize for their work on the structure of crystals?
  - a. Marc Isambard Brunel and Isambard Kingdom Brunel
  - b. George Bush and George W Bush
  - c. William Henry Bragg and William Lawrence Bragg
- 6) Stanley Prusiner won the medicine prize in 1997 for his discovery of 'prions', a biological agent of infection. With which disease have they been connected?
  - a. BSE
  - b. Foot and Mouth
  - c. Flu
- 7) Which of these is not a Nobel Prize category?
  - a. Physics
  - b. Chemistry
  - c. Mathematics
- 8) Apart from being a genius in your chosen subject, what else do you have to be to win a Nobel prize?
  - a. Alive
  - b. Over 6 foot
  - c. Male
- 9) Where are the Nobel Prizes awarded?
  - a. Netherlands
  - b. The USA
  - c. Sweden
- 10) There is no limit to the number of Nobel prizes you can win. How many Nobel prizes did Einstein win?
  - a. None
  - b. One
  - c. Three