

Robert Boyle

Select & Circle the correct answer from the options below to complete the story of Lismore's most famous scientist, Robert Boyle:

1. Robert Boyle was born in....
 - a. a manger
 - b. a large castle in the town of Lismore
 - c. in a land far far away

2. Robert was a real scientific detective. He believed that scientists should prove all their theories by...
 - a. conducting experiments
 - b. arguing about them with other scientists
 - c. dropping apples on their heads

3. Robert also believed that when carrying out research a scientist should always:
 - a. wear safety goggles so they would look like real scientists
 - b. take lots of breaks to watch their favourite TV shows
 - c. make lots of notes and record all their results

4. Boyle's most important theory is the law that bears his name. Boyle's Law states that...
 - a. at a constant temperature the volume and pressure of a gas are inversely proportionate i.e. they move in opposite directions
 - b. gas is best used to keep fizzy drinks fizzy
 - c. gas was what made him burp so often

5. Boyle carried out many experiments on the nature and importance of air. He proved that air is necessary ...
- a. for sound to travel
 - b. to allow us to scream as loudly as possible
 - c. for rock music to be incredibly loud
6. Boyle discovered a substance called litmus that could be used to tell...
- a. if someone was lying
 - b. acids from bases
 - c. a Manchester United from a Liverpool fan
7. Boyle was one of the founding members of a learned society dedicated to the support of the sciences. This group was called...
- a. The Three Musketeers
 - b. The Famous Five
 - c. The Royal Society
8. Boyle's great contribution to the world of science ensures that he will always be remembered as...
- a. The Earl of Cork
 - b. The Father of Modern Chemistry
 - c. A gas man

Teachers' Answer Sheet

1. b

Robert Boyle was born at Lismore Castle on the 25th January 1627. He was the 7th son and 14th child of Sir Richard Boyle, the Great Earl of Cork, and his second wife Catherine Fenton.

2. a

Boyle believed all theories should be proven through experiment. While this may seem obvious to us today many scientists at the time believed they could prove their theories through reasoned argument and discussion. It was Sir Issac Newton, a friend and contemporary of Boyle's, who claimed that he had formulated his theory of gravity by watching an apple fall from a tree.

3. c

We all know how important it is to be safe when carrying out experiments, unfortunately in Boyle's day (1627-1691) scientists would not have had safety goggles as we know them today. The television was another invention that poor Boyle did not live to see. The original version of the television was not invented until 1928 and television sets did not begin to appear in people's homes until the 1950's. Boyle did believe it was vitally important that scientists record and publish their experiments so that others could repeat the tests. This practice is now universally adhered to in the research world and Boyle is credited with pioneering the modern scientific method.

4. a

Boyle's Law states that at a constant temperature the volume and pressure of a gas are inversely proportionate i.e. if volume increases pressure will decrease and if volume decreases pressure will increase. The fizz in fizzy drinks is created by dissolved carbon dioxide and burps are caused by the gas produced by our intestinal bacteria during digestion. However there is no evidence to suggest that Boyle

concerned himself with either of these matters in his research or indeed that he burped any more than anyone else!

5. a

Sound is a series of waves created by the vibration of an object. These waves travel through air or other materials- sound cannot travel in a vacuum. Hence air is necessary for rock or any kind of music to be heard at all. As with other sounds screams are created through vibration- our vocal cords vibrate when air passes through them when we speak, shout, scream and even whisper.

6. b

Litmus is a plant extract that changes colours when it comes into contact with an acid or base and remains unchanged when a substance is neutral. It is still commonly used as an indicator today. The lie detector or polygraph machine was invented by John Mackenzie in 1902 with a more accurate version engineered by John Larson in 1921. A scientifically accurate method of distinguishing rival soccer fans has as yet not been devised; we suggest you try looking at the jersey they wear!

7. c

In 1660 Boyle became one of the founding members of the Royal Society, a learned society dedicated to the support of the sciences, considered to be one of the oldest such societies still in existence. The Three Musketeers and The Famous Five are both fictional creations; the Musketeers were the work of Alexander Dumas while Julian, George, Dick, Anne and Timmy the Dog are the product of Enid Blyton's imagination.

8. b

Boyle is remembered as the Father of Modern Chemistry. His own father Richard Boyle was the First Earl of Cork. Upon his death this title passed to his eldest son of the same name. Much of Boyle's work

did concentrate on the nature and composition of gases but it is uncertain if he would have referred to himself as 'a gas man'!