Significant Islamic Scholars

Read the information carefully and then answer the comprehension questions in as much detail as you can.

Muslim scholars from the early Islamic Empire are responsible for the discovery and development of a wide range of inventions that we now take for granted in our daily lives.

Work by these scholars helped lead the Renaissance in Europe which began in the 14th century - several centuries behind the 'golden age of Islam'.

During the early Islamic civilisation many talented doctors contributed to the development of medicine and surgery.

Muhammad ibn Zakariya Razi

Razi was born in AD 854 and died, aged 71, in AD 925. He made a significant contribution to the history of medicine.

During his work in medicine Razi worked out the difference between smallpox and measles and how best to treat them as two separate diseases.

In his work as a chemist Razi invented a range of phials, flasks and spatulas – items which were used in pharmacies for centuries afterwards.

Razi led studies in the field of ophthalmology (the study and treatment of eyes) and he developed a range of ointments to treat different eye conditions.

Razi is regarded as 'the father of paediatrics' due to his acknowledgement that children need to be treated differently to adults.

Razi believed that everybody had the right to good medical care. He wrote a book called 'A medical adviser for the general public' (Man la Yahduruhu Al-Tabib) which described how people could treat their own medical problems.

Abu al-Qasim Khalaf ibn al-Abbas Al-Zahrawi

Al-Zahrawi was born in AD 936 and died, aged 77, in AD 1013. He was a doctor and surgeon who is regarded as 'the father of surgery'. He developed many surgical techniques and invented many surgical tools. Al-Zahrawi gave up his whole life to help develop new medicines and surgical procedures.

Al-Zahrawis's special achievements include the development of cauterisation and his use of catgut in stitches. Both techniques are still used today.

Al-Zahrawi's book 'Al- Tasrif' was used by European doctors for approximately 500 years after it was finished in AD 1000. It describes how to treat a huge range of medical conditions and many of the techniques described in it are still used today. Al-Zahrawi also wrote a book called 'On Surgery and Instruments' in which he drew over 200 surgical tools.

Significant Islamic Scholars

1. How did the early Islamic scholars influence the Renaissance in Europe in the 14th century?

2. What did Muhammad ibn Zakariya Razi find out about smallpox and measles?

3. Why is Razi regarded as the father of paediatrics?

4. Why did Razi write the book 'A Medical Adviser for the General Public'?

5. Why is Al-Zahrawi regarded as the father of surgery?

6. What medical techniques or procedures did Al-Zahrawi develop that are still in use today?

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7. Why is Al-Zahrawi's book Al-Tasrif so important?

8. How did medicine in the early Islamic civilisation compare to medicine in Europe at the same time?

9. How have early Islamic doctors influenced medicine today?

Challenge: Can you find out about any other early Islamic doctors who helped lead the development of medicine?

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Muhammad ibn Zakariya Razi

Razi was born in AD 854 and died, aged 71, in AD 925. He was not just a doctor but also a chemist and philosopher amongst other things. Razi made a significant contribution to the history of medicine.

During his work in medicine Razi worked out the difference between smallpox and measles and how best to treat them as two separate diseases.

In his work as a chemist Razi invented a range of phials, flasks and spatulas – items which were used in pharmacies for centuries afterwards.

Razi led studies in the field of ophthalmology (the study and treatment of eyes) and he developed a range of ointments to treat different eye conditions. Unfortunately he was not able to help himself when, in his later years, he began to go blind and eventually lost his sight.

Razi is regarded as 'the father of paediatrics' due to his acknowledgement that children need to be treated differently to adults.

Razi believed that everybody had the right to good medical care He wrote a book called "A medical adviser for the general public" (Man la Yahduruhu Al-Tabib), which described how people could provide self-help for their medical complaints. Razi also challenged those who claimed to be doctors and sold fake cures on the streets

Abu al-Qasim Khalaf ibn al-Abbas Al-Zahrawi

Al-Zahrawi was born in AD 936 and died, aged 77, in AD 1013. He was a doctor and surgeon who is regarded as 'the father of surgery' for his ground-breaking development of surgical techniques and the invention of numerous surgical tools. Al-Zahrawi's whole life was committed to the development of medicine and surgery.

Al-Zahrawis's special achievements include the development of cauterisation and his use of catgut in stitches. Both techniques are still used today.

Al-Zahrawi's book Al- Tasrif was used by European doctors as a reference guide for approximately 500 years after it was finished in AD 1000. It contains advice on how to treat a huge range of medical conditions and many of the techniques described in it are still used today. Al-Zahrawi also wrote a book called 'On Surgery and Instruments' in which he drew over 200 surgical tools.

Abu 'Abdullah Muhammad Ibn Musa Al-Khwarizmi

Al- Khwarizmi was born around AD 800 and is regarded as 'the father of algebra'.

Al-Khwarizmi also introduced the Hindu-Arabic numbers 1-9 and 0 in his book about arithmetic which made the use of these numbers more popular in the Islamic world – 250 years before people in the West would use them.

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Algebra, a branch of mathematics which uses letters and numbers to represent amounts, was developed as a separate branch of mathematics by Al-Khwarizmi. Al-Khwarizmi wrote Kitab al-jabr wa'l-muqabalah (The Book of Restoring and Balancing) about algebra (Al-jabr).

Ibn al-Haytham

Ibn al-Haytham was influential in the study and development of optics and invented the first camera.

Al-Haytham invented the first camera obscura or pinhole camera based on his studies. He proved that light travels in straight lines and that we can see because light reflects off objects into our eyes. Before Al-Haytham other ideas about how we see included the Greek belief that our eyes sent out rays of light like lasers to light up the world around us.

Significant Islamic Scholars

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Significant Islamic Scholars

7. Why is Al-Zahrawi's book Al-Tasrif so important?

8. Al-Kwarizmi is known as the father of algebra. How else did he contribute to the development of mathematics?

9. What did Ibn al-Haytham invent?

10. What did Ibn al-Haythams studies prove?

11. Which of the early Islamic scholars you have read about interests you the most? Why?

12. What do you think was the most significant discovery/invention of the early Islamic scholars? Why?

Challenge: Can you find out the names and achievements of other notable early Islamic scholars?

Significant Islamic Scholars

Read the information carefully and then answer the comprehension questions in as much detail as you can.

Muslim scholars from the early Islamic Empire are responsible for the discovery and development of a wide range of inventions that we now take for granted in our daily lives.

Work by these early pioneers preceded work of European scholars in many fields and was fundamental in leading the Renaissance in Europe which began in the 14th century - several centuries behind the 'golden age of Islam'. Significant advances in the study of medicine occurred during the early Islamic civilisation with many talented doctors contributing to the development of new medical techniques and surgical tools.

Muhammad ibn Zakariya Razi

Razi was born in AD 854 and died, aged 71, in AD 925. He was not just a doctor but also a chemist and philosopher amongst other things. However, Razi made a significant contribution to the history of medicine. He also had progressive ideas about patient care and helping the less fortunate and vulnerable members of society.

During his work in experimental medicine Razi worked out the difference between smallpox and measles and how best to treat them as two distinctly separate diseases. He was also among the first doctors to study fluids in the body in order to distinguish between different contagious diseases.

In his work as a chemist Razi invented a range of phials, flasks and spatulas – items which were used in pharmacies for centuries afterwards.

Razi was very influential in the field of ophthalmology (the study and treatment of eyes) and he developed a range of ointments to treat various eye conditions. Unfortunately he was not able to help himself when, in his later years, he began to go blind and eventually lost his sight completely.

Being a naturally caring and understanding person Razi understood and promoted the need for good doctor patient relationships. He recognised that all people needed to be treated differently and that different techniques and medicines worked better for some people than others and he is regarded as 'the father of paediatrics' due to his acknowledgement that children need to be treated differently to adults.

Razi strongly believed that everybody had the right to good medical care irrespective of their position in society. One of his best known books entitled "A medical adviser for the general public" (Man la Yahduruhu Al-Tabib), offered guidance on how people could provide self-help for their medical complaints in cases when they were unable to visit a doctor. Razi also despised those who claimed to be doctors and sold fake cures on the streets and he challenged their actions and warned people to be wary of them.

Abu al-Qasim Khalaf ibn al-Abbas Al-Zahrawi

Al-Zahrawi was born in AD 936 and died, aged 77, in AD 1013. He was a doctor and surgeon who is regarded as 'the father of surgery' for his ground-breaking development of surgical techniques and the invention of numerous surgical tools. Al-Zahrawi's whole life was committed to the development of medicine and surgery.

Al-Zahrawi specialised in cauterisation which involves burning an area of flesh, inside or outside the body, to stop bleeding or infection. It was a progressive and revolutionary technique at the time.

Al-Zahrawi's book Al- Tasrif was used by European doctors as a reference guide for approximately 500 years after it was finished in AD 1000. It contains advice on how to treat a huge range of medical conditions and many of the principles and techniques described in it are still used today while countless other modern techniques are directly descended from Al-Zahrawi's ideas.

In his book entitled 'On Surgery and Instruments' Al-Zahrawi provided drawings of over 200 surgical tools which he had

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invented. He showed these in use during different surgical procedures to illustrate their function and many of them are still recognisable in their modern counterparts.

Al-Zahrawi was the first doctor to use catgut for stitching wounds as he observed that the body could naturally absorb this without ill-effects. Catgut is still used in stiches today.

Abu 'Abdullah Muhammad Ibn Musa Al-Khwarizmi

Al- Khwarizmi was born around AD 800 and is regarded (amongst other accomplishments) as 'the father of algebra'.

Al-Khwarizmi introduced the Hindu-Arabic numbers 1-9 and 0 in his book about arithmetic which made the use of these numbers more popular in the Islamic world. However it would be around another 250 years until people in the West began to use them as they were still using roman numerals.

Algebra, a branch of mathematics which uses letters and numbers to represent quantities, was developed as a separate branch of mathematics by Al-Khwarizmi. Al-Khwarizmi wrote Kitab al-jabr wa'l-muqabalah (The Book of Restoring and Balancing) which outlines his principles of algebra (Al-jabr).

Al-Khwarizmi was also a prominent astronomer who wrote around a hundred astronomical tables based on his study of stars and planets.

Ibn al-Haytham

Ibn al-Haytham was influential in the study and development of optics and invented the first camera.

During his time spent under house arrest by ruler Al-Hakim, Al-Haytham was intrigued by the way the sunlight travelled through a tiny hole in one of his wooden shutters. He noticed that he could see an image of a tree on the wall opposite and it occurred to him that this phenomena could be used to produce a copy of an image. Al-Haytham went on to develop the first camera obscura or pinhole camera based on his observations. His studies also provided proof that light travels in straight lines and that we can see because light reflects off objects into our eyes. Prior to Al-Haytham other theories about how we see included the Greek assumption that our eyes sent out rays of light like lasers to illuminate the objects we looked upon.

Significant Islamic Scholars

1. Describe how early Islamic scholars influenced the Renaissance in Europe in the 14th century.

2. List three ways in which Muhammad ibn Zakariya Razi made a significant contribution to the history of medicine.

3. Why is Razi regarded as the father of paediatrics?

4. What did Razi's journal 'A Medical Adviser for the General Public' aim to do?

5. Describe Razi's progressive ideas about patient care.

6. Why is Al-Zahrawi regarded as the father of surgery?

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7. What is cauterisation? Who do you think this was such a ground-breaking idea at the time?

8. What medical techniques did Al-Zahrawi develop that are still in use today?

9. Why is Al-Zahrawi's book Al-Tasrif so important?

10. Al-Kwarizmi is known as the father of algebra. How else did he contribute to the development of mathematics?

11. Like many other early Islamic scholars, Al Kwarizmi did not specialise in one field of study. Why do you think this is the case?

12. How did Ibn al-Haytham first propose the idea that an image could be copied?

13. What did Ibn al-Haytham's studies prove?

14. Which of the early Islamic scholars you have read about interests you the most? Why?

15. What do you think was the most significant discovery/invention of the early Islamic scholars? Why?

Challenge: Can you find out the names and achievements of other notable early Islamic scholars?