

# 'Science and Islam' (SBS series) - WORKSHEETS

## compiled by DI DUNLOP

In late 2009, SBS showed an excellent three-part series called *Science and Islam*, produced by Professor Jim Al-Kalili. When visiting ancient Egyptian tombs, his guide revealed that Islamic scholars had cracked the hieroglyphic code long before the discovery of the Rosetta Stone, and that the study of ancient Egypt did not begin in the nineteenth century but during the latter part of the first century AD.

The series had three parts:

- (1) The Language of Science
- (2) The Empire of Reason
- (3) The Power of Doubt

The Professor develops the story from the use and naming of algebra, through to the development of chemistry and the scientific method, and then the challenge of astronomy — which was the basis for Copernicus challenging the belief that Earth was the centre of the Universe.

## ACTIVITIES: 'Science and Islam'

- Draw a **TIMELINE** which shows the scientific developments of the Islamic world from the eighth century to the twelfth century.
- Find five (5) Arabic words or **TERMS** which we use in **Mathematics / Science** today. Give their meanings.

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- **EXPLAIN** the importance of the development of nine (9) digits plus zero for **Mathematics**.

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- How did the decimal point come to be used?

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- On a **MAP**, mark in the extent of the Islamic Empire by end of the 8th century.
- Arabic became the common language of the Empire. **DISCUSS** the impact this would have had on scientific knowledge and political power.

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- What was the *Translation Movement*?

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# ACTIVITIES: 'Science and Islam'

- Explain the difference between the *Koran* and the *Hadith*.  
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- In the *Hadith* the Prophet (Mohammed) said 'God did not send down a disease without also sending down its cure'. Does this account for the early development of medical practice in the Islamic world? EXPLAIN.  
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- DISCUSS the importance of the Islamic value of compassion in the development of medicine.  
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- Explain how the *Translation Movement* was responsible for the spread and development of knowledge in areas as diverse as dance, literature and medicine.  
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- Outline how algebra was developed.  
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- What is 'scientific method'? How significant is its development for modern science?  
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## ACTIVITIES: 'Science and Islam'

- How did Islamic science assist in the control of the Nile floodwaters?

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- Why was knowledge about the size of the Earth important for Muslims?

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- Explain how experimentation was driven by trade.

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- Outline how alchemy was the forerunner for the development of chemistry.

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- Explain the significance of *classification* and the *periodic table*.

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- Explain the importance of the linking of mathematics and physics.

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- What motivated Islamic scholars' interest in astronomy? EXPLAIN.

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# ACTIVITIES: 'Science and Islam'

- In the tenth century, Ibn al-Haytham said: 'Scientific ideas are only valid if they are mathematically consistent and reflect reality.' EXPLAIN.

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- What role did Venice play in linking the developments of the Islamic world with that of the Renaissance in Europe?

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- EXPLAIN why you think Islamic scientific development fell into decline in the fifteenth century.

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- How was Newton influenced by the scientific traditions developed in Asia?

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- What impact did the rise of European colonial power have on the Islamic world?

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