algorithms

introduction

An algorithm is a process or a set of rules that are followed in calculations or other problem-solving operations. This may sound rather boring but you would be amazed how important algorithms actually are. Every single computer programme uses algorithms to function. From PCs to smartphones, aircraft systems to robots, anything that uses a computer programme simply couldn't exist without algorithms. But have you ever wondered where the word "algorithm" comes from? Algorithms are actually named after the 9th century Muslim mathematician Muḥammad ibn Mūsā al-Khwārizmī, whose name in Latin was pronounced "Algorithmi". Al-Khwārizmī was certainly not the first person to discuss algorithms in his mathematical writing, but his contribution to our understanding and use of algorithms was so important that we now use his name whenever we use an algorithm. So next time you're using your laptop or smartphone, remember the important role al-Khwārizmī played in making our modern computer programmes possible.

questions to think about

- How many everyday objects can you think of that use computers?
- Think about your travel to school today? In what ways were computers involved?
- What tasks are done nowadays by computers that used to be done by people? How has this changed the process? How has this changed people's jobs?
- How would your life be different without computer programmes? Think about your studies, your hobbies, getting around...
- How do you think technology will develop in the future?

How are computers being used here?

Many of these items use algorithms to work.

where to find out more

An introduction to algorithms:
https://www.bbc.com/bitesize/articles/z3whpv4
http://www.bbc.co.uk/guides/zqrq7ty
Learn more about algorithms and their use in computer programmes: https://computer.howstuffworks.com/what-is-a-computer-algorithm.htm
What are algorithms? The Economist explains: https://www.economist.com/the-economist-explains/2017/08/29/what-are-algorithms
Learn more about Abū ʿAbdallāh Muḥammad ibn Mūsā Al-Khwārizmi: http://1001inventions.blogspot.com/2010/03/contribution-of-al-khwarizmi-to.html

Islamic Innovations