# Alhazen

**965 –1040 AD**

## What did he discover?

Alhazen was born Abū 'Alī al-Hasan ibn al-Haytham in 965 AD in Basra, Iraq. His name was Latinized to Alhazen. He was a polymath, which means he was a person of wide knowledge. He was an early physicist, mathematician and astronomer. He was particularly interested in optics, metaphysics and the scientific method. He is often referred to as the "World's first true scientist".

Alhazen investigated and formulated the laws of reflection and refraction of light. He was also able to explain why images appeared upside down in a camera obscura; these were dark vaulted rooms which sometimes had small holes in the walls. When light came through these holes, an image from the outside would be projected on the wall but upside down. Alhazen carried out experiments with handmade pinhole cameras to prove that these images occurred because light travels in straight lines.

He was the first to use mathematics to explain visual phenomena, he famously explained the 'moon illusion' and calculated the method for the sum of fourth powers, or indices. It is also believed that his greatest, and furthest reaching, achievement was inventing the 'scientific method' as we know it today. He was the first to experiment with all his theories physically rather than just entertaining abstract thought. His method of "observe, hypothesize, experiment, revise and repeat" is the scientific method we see in action today.

He was ahead of his time and made ground-breaking discoveries, which enabled the progression of science in the generations after him.

## Something to think about...

Why does the moon appear to look bigger on the horizon?



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