

*Baker Street Elementary*

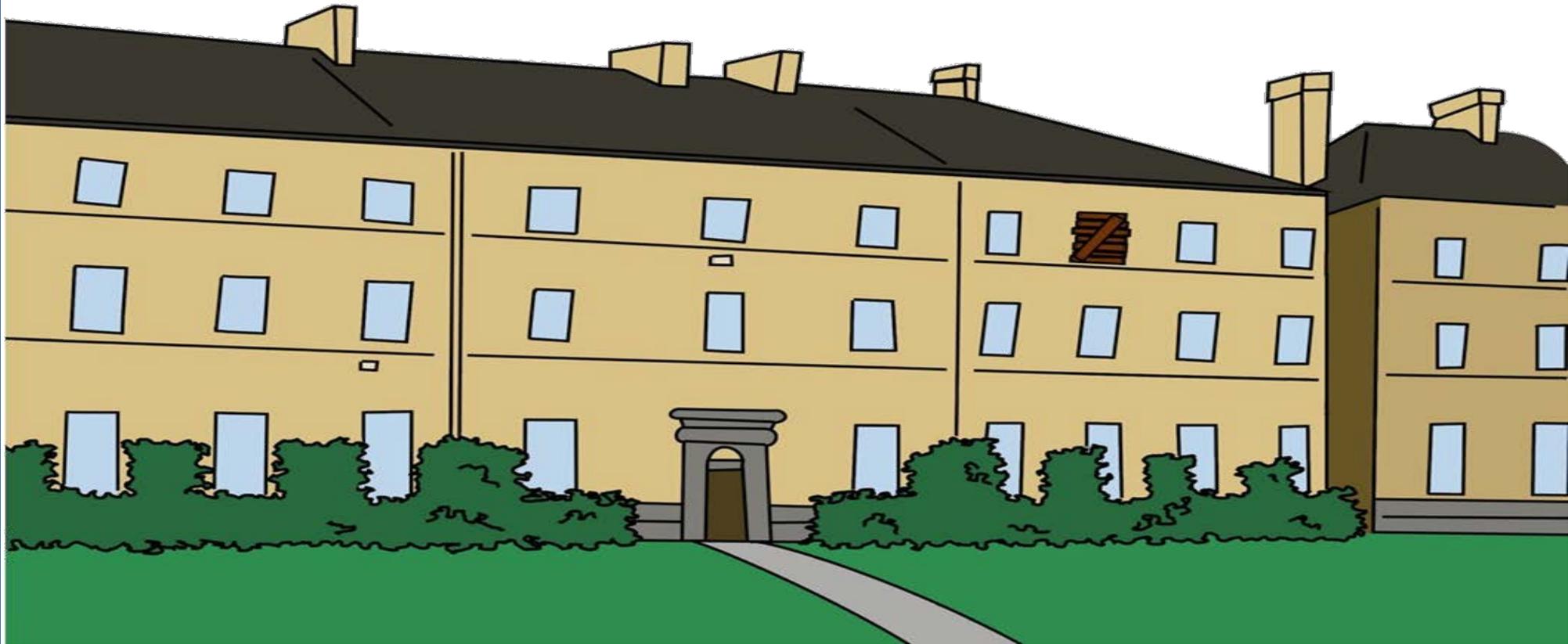
*Presents*

*"The Life and Times in Victorian London"*



# *Baker Street Elementary*

*The Life and Times in Victorian London*  
*# 083 -- I Can See Clearly Now -- 11/17/2018*

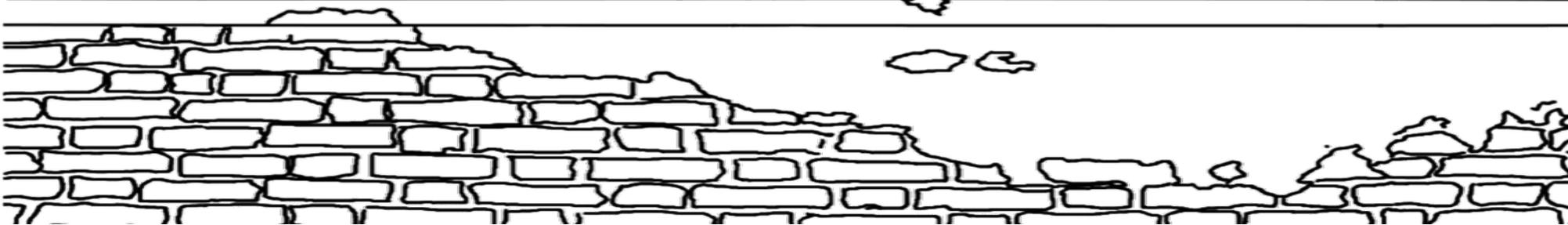




*Welcome to topic number 083...  
today Master Paget and I will  
be looking at magnifying glasses  
and microscopes in the Canon.*



*While the image of Sherlock Holmes has been tied to the magnifying glass, only ten percent of the stories actually include a reference to the use of lenses.*



*He used a magnifying glass or lens in six of the stories in the canon (A Study in Scarlet, "The Adventure of the Red-Headed League," "A Case of Identity," "The Adventure of the Beryl Coronet"...*



... "The Adventure of the Norwood Building," and "The Adventure of Black Peter") and a microscope at the end of "The Adventure of Shoscombe Old Place."





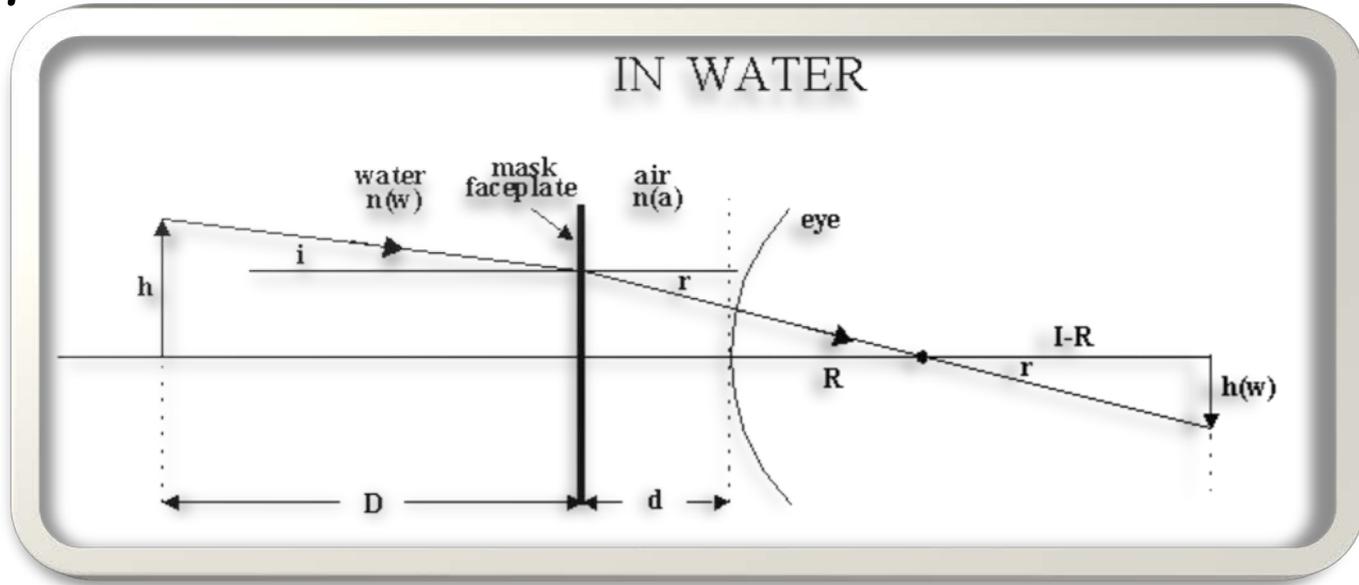
*Nonetheless, the history of optics suggests these tools serve as a fitting symbol for the detective.*



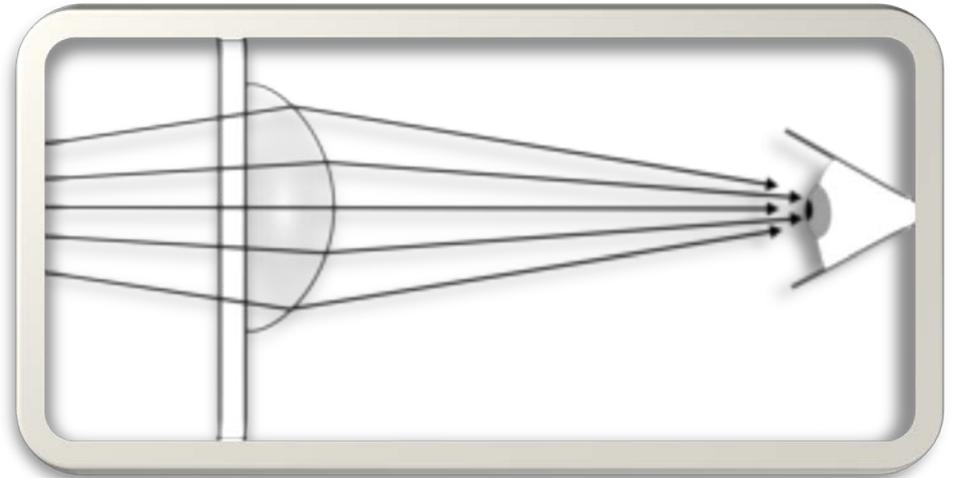
*References to magnifying devices, most likely using water, date back to 424 BC.*



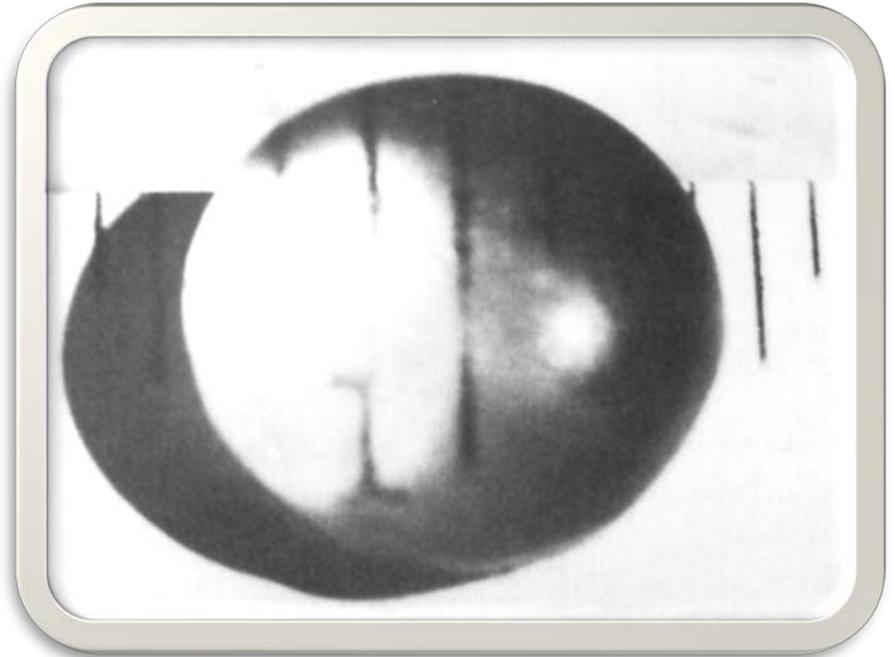
*The Roman invention of glass in the first century included experimentation with different shapes.*



*They discovered that those with a convex shape (thicker in the middle) would enlarge an object held near it and could also be used to burn objects by concentrating light.*



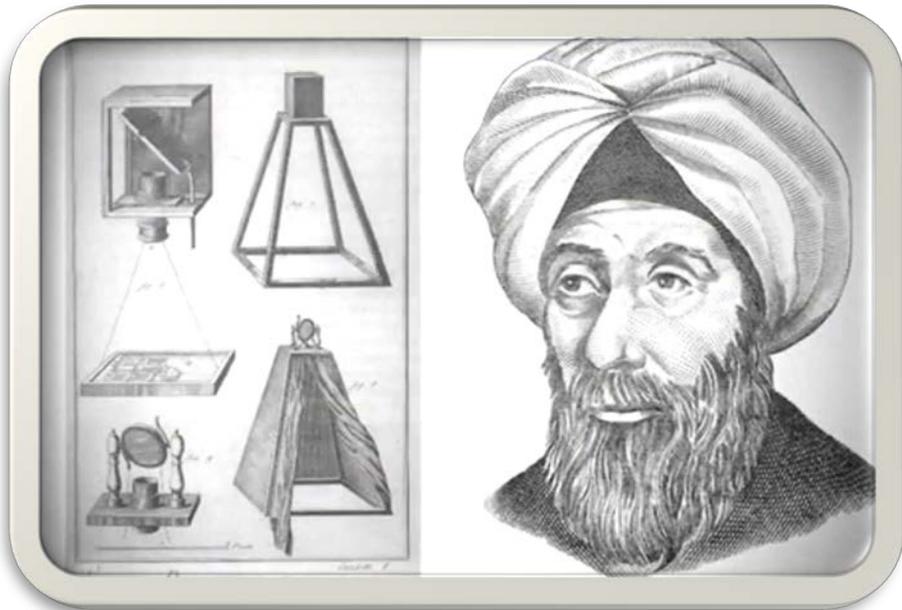
*The term "lens" derives from the Latin word of "lentil" because the shape resembles that of the lentil bean.*



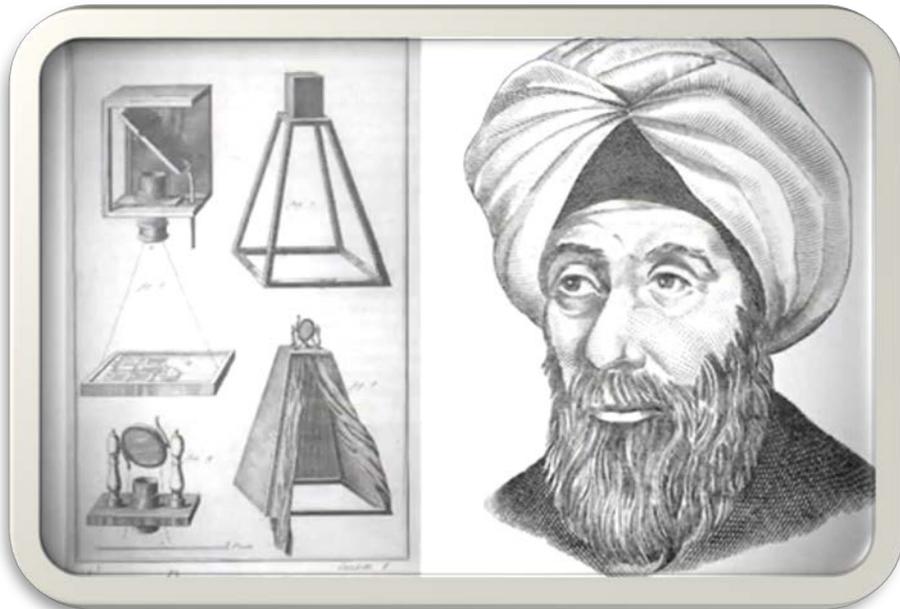
*While the interest and use of lenses languished in Europe following the fall of the Roman Empire, the Arab mathematician Ibn al-Haytham completed a seven-volume work on optics (written from 1011-1021).*



*Considered the first true researcher, Ibn al-Haytham followed the scientific method of testing hypotheses through experimentation five hundred years before the approach re-appeared in Renaissance Europe.*



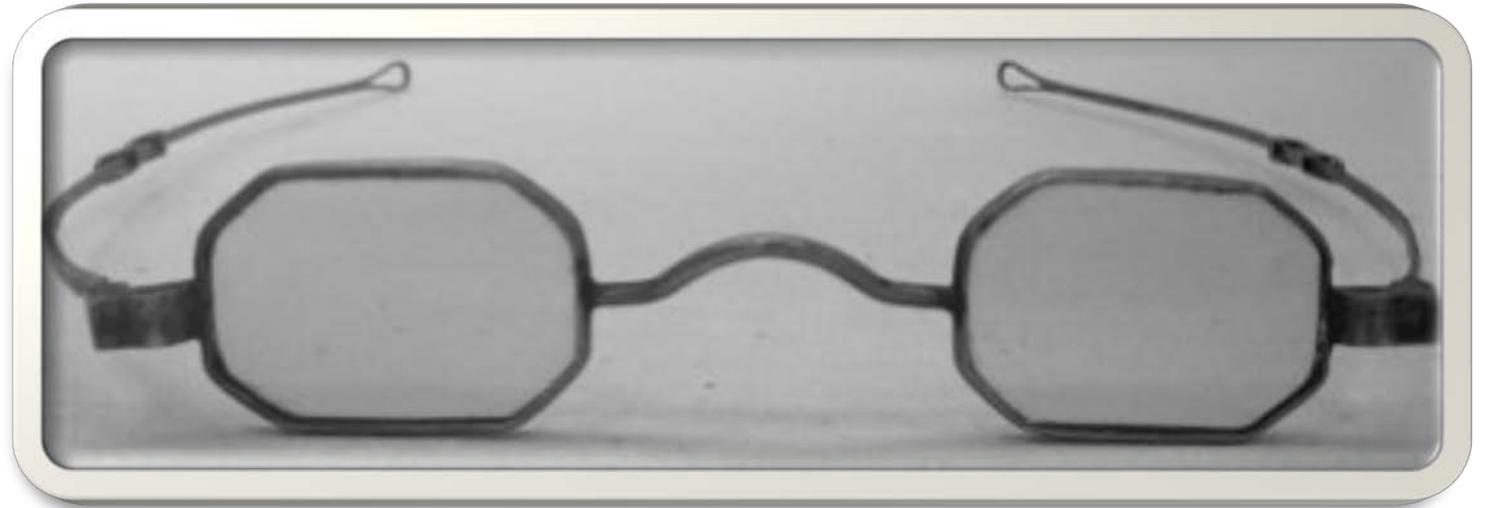
*His investigations with light, vision, mirrors and magnifying lenses were later translated into Latin in the 12th or 13th century and influenced a resurgence in the interest of lenses in Europe at that time.*



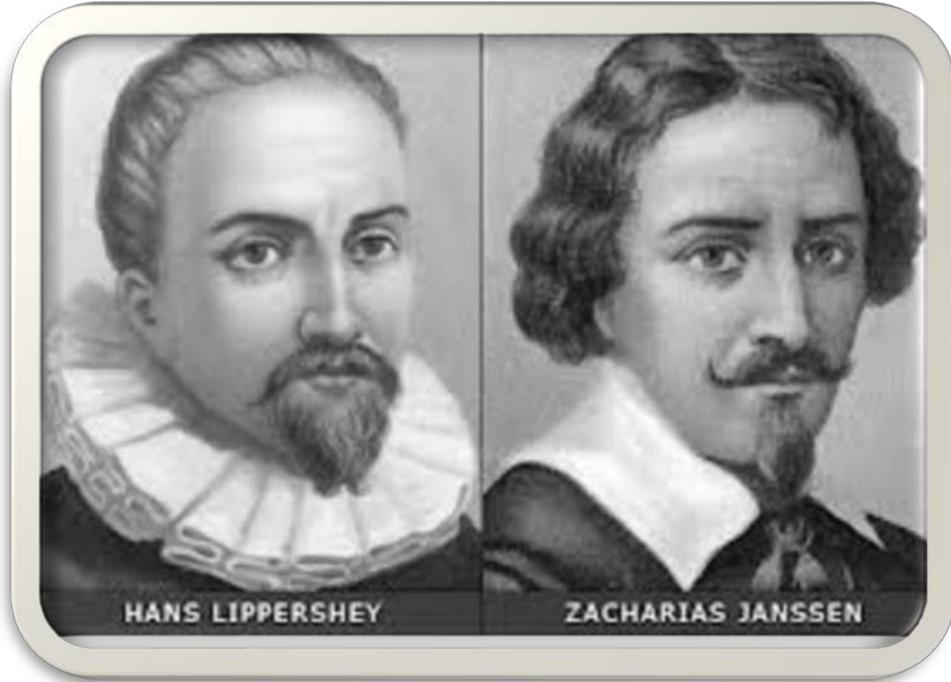
*Convex lenses appeared as eyeglasses (consisting of two lenses with handles riveted together) in Italy in the late 1200s and in Roger Bacon's magnifying glasses in 1250.*



*He created these lenses for additional study of light, mirrors, reflection and refraction inspired by the writings of Ibn al-Haytham.*



*In the 1590s, Dutch spectacle makers Hans and Zacharias Jansen arranged several lenses in a tube and discovered they could increase the magnification beyond that of a single lens...*



*... but it was considered more of a novelty than anything with practical applications.*





*Anton van Leeuwenhoek, however, saw the potential and made and used the first true microscope.*





*He also developed techniques to grind and polish lenses to reach a power of 270x magnification.*



*By the Victorian era, the lenses for magnifying glasses and microscopes were well-made and very precise.*



*Dr. Robert Ing, a forensic scientist, has concluded Holmes most likely used a "10 power silver and chrome magnifying glass"—a much more powerful instrument than the 2x-6x typically available today.*



*His microscope was most likely "a brass tripod base monocular optical microscope probably manufactured by Powell & Lealand" based on the instrument's popularity at the time.*



*While Holmes might be considered ill-equipped by current forensic lab standards, such equipment was considered state-of-the-art and served him well in his pursuits.*



*The image of Sherlock Holmes and his magnifying glass serves as an appropriate symbol for the detective.*



*Given its roots in the scientific method,  
the lens represents his disciplined  
approach to collecting and following facts  
to their final conclusion.*



*So we have completed  
topic 83 in our series...*

*Yes, but we'll be back  
with another topic  
soon...*



## References for this topic:

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*Baker Street Elementary*

"The Life and Times in Victorian London"

IS CREATED THROUGH THE INGENUITY & HARD WORK OF:

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