

# David Livingstone: Reading his words

An educational worksheet for children aged 9-13 published by

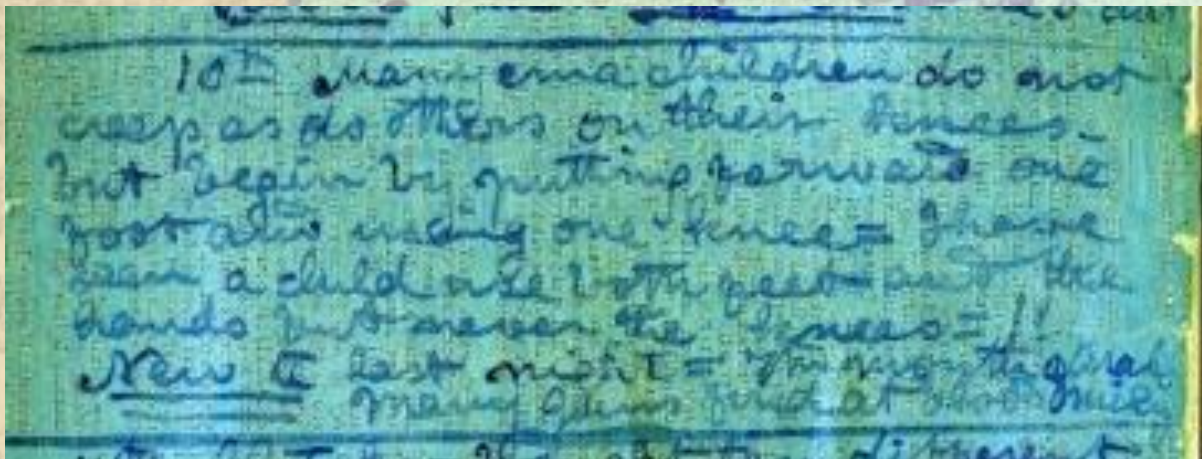
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Towards the end of his last expedition in Africa David was running short of supplies and had no ink or writing paper left to keep his diary. He had to use anything that was available, writing on old bits of paper, and eventually writing on a copy of *The Standard* newspaper from 1869. For ink he crushed red berries and used their juice.

Can you read any of the words on the image below, taken from David's 1871 field diary?



No? Neither could anyone else. Berries do not make good ink. Try again with this version. How many words can you read now?



A group of academics and scientists decided David's diaries were so important that they developed a special way of photographing them which turned David's writing 'up' so it could be read, and turned the newspaper print 'down,' so it couldn't be seen.



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## Experiences and Outcomes

### Literacy and English

Students can practice deep reading and textual analysis to explore Livingstone's letters.

### Sciences

Students can explore spectral imaging and identify what wavelengths of light are.

### Suggested Questions

What do you think happens to letters that are left outside or in bright sunlight for too long? Why don't you try your own experiment?

What can you see in the sky that shows different wavelengths of light? [Hint: you usually see it after it has been raining.]

### Further Reading:

The process used to read David's words is called multi-spectral digital imaging. This involves taking 14 photographs of each page of his writing, each image taken whilst the page was being exposed to a specific wavelength of light. This means we can see far more than we could with an ordinary camera. Click on the link below to find out how the images could be turned into something which could be read clearly

[http://livingstone.library.ucla.edu/1871diary/image\\_processing.htm](http://livingstone.library.ucla.edu/1871diary/image_processing.htm)



This educational resource was developed by Kate Simpson and Megan Ward, who are staff of *Livingstone Online* ([livingstoneonline.org](http://livingstoneonline.org)). *Livingstone Online* is the leading site for learning more about the life and writings of David Livingstone. Visit our site to discover an array of images and texts that supplement the educational material found in this worksheet.