

How did the Victorians see in 3D?

Class: Primary 4-5

Subject: Social Studies/Science

Duration: 30mins

Lesson Focus and Goals:

- Learn about some of the ways photography was used in the past
- Understand why photography is so special to St Andrews

Materials Needed:

- PowerPoint Slides
- Mini Stereoscopes x15 (1 between 2)
Purchase from:
[The Lite OWL - LSC Official Online Shop \(londonstereo.com\)](http://The Lite OWL - LSC Official Online Shop (londonstereo.com))
£75 for 15

CfE Learning Points:

- By exploring places, investigating artefacts, and locating them in time, I have developed an awareness of the ways in which we remember and preserve Scotland's history. SOC 1-02a
- I have explored my senses and can discuss their reliability and limitations in responding to the environment. SCN 1-12b

Teacher Notes:

- Start with a discussion introducing David Brewster and one of his inventions (the stereoscope).
- Then go on to look at some examples of stereoscopic images which can be printed or bought from the London Stereoscopic Company (same link as above). Examples can also be found here [Photographs - Library - University of St Andrews \(st-andrews.ac.uk\)](http://Photographs - Library - University of St Andrews (st-andrews.ac.uk)) by searching for 'stereo pairs'.

Background Information:

- David Brewster (1781-1868) was a famous scientist and inventor. He also was principal of the University of St Andrews for a while.
- He helped to put St Andrews on the map when it was still a small town because of his inventions. We could say that it is partly down to him that St Andrews grew to be what it is today.
- He was very interested in how light works and how we see things that involve light, such as a reflection in a mirror. This led him to invent the kaleidoscope.
- Another of Brewster's inventions was a device called a lenticular stereoscope. This device allowed people to look at a pair of photos, each taken at the same time, by two cameras placed at slightly different angles. The cameras were designed to represent our two eyes which each see different things. Being able to look at the two photos simultaneously tricks our brain into allowing us to see in 3D.
- Brewster's version of the stereoscope was more portable than others that had been invented previously, making it more accessible.
- The device was revolutionary, and the Victorians thought it was amazing. Some even said that looking at photos of places through a stereoscope was as good as going on holiday to the actual places!

Discussion Questions:

- Has anyone used a kaleidoscope before? If so, can you explain what it is?
- Can anyone think why we would want to have a pair of photos instead of just one?
- Put your hands up if you think the two photos (on slide) are the same? And put your hands up if you think they are different? (They are different)
- Line your finger up to my head... now close one eye and look through the other and do the same with the other eye. What do you see? (Different things)
- Can you try and look at the photo on the left (on slide) with your left eye and the photo on the right with your right eye? - this is really difficult! Luckily the stereoscope helped us to do this.

Activity Instructions:

- In pairs take one of the stereoscopes and practice looking at stereo pairs. As detailed above these can be printed (to the correct size) or bought online.
- The aim here is to get more of a feel of how stereoscopes work and to see what an incredible invention they were because they meant that people could see in 3D over 170 years ago!
- Interesting to experiment while looking through the stereoscope, for example, by opening one eye and closing the other or moving the stereo pairs around.

