POLAR EQUIPMENT

INVESTIGATING WHAT EQUIPMENT POLAR EXPLORERS USED AND HOW IT HAS CHANGED.

POLAR EXPLORATION KS2

Curriculum mapping:

Computing

Purpose of study: Ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology

Aims: are responsible, competent, confident and creative users of information and communication technology

KS2: select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

English

Purpose of study: English will teach pupils to speak and write fluently so that they can communicate their ideas and emotions to others and through their reading and listening

Aims:

- **acquire a wide vocabulary, an understanding of grammar and knowledge of linguistic conventions for reading, writing and spoken language**
- **write clearly, accurately and coherently, adapting their language and style in and for a range of contexts, purposes and audiences**

History

Purpose of study: History should inspire pupils' curiosity to know more about the past. Teaching should equip pupils to ask perceptive questions, think critically, weigh evidence, sift arguments, and develop perspective and judgement. History helps pupils to understand the complexity of people's lives

Aims:

- **understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance, and use them to make connections, draw contrasts, analyse trends, frame historically valid questions and create their own structured accounts, including written narratives and analyses**

KS2: a study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066

Introduction activity

As a class look at the 'A. Stephenson with theodolite' image

Ask the class to think about what they think this explorer is doing.

Explain that he is actually using an instrument called a theodolite – a surveying instrument which is still used today. A theodolite is pointed at the target object to get measurements and angles; the distance it shows is recorded. Explain that a theodolite is a precision instrument for measuring horizontal and vertical angles outside. If you were using a theodolite, you would need to know mathematics (geometry and trigonometry) and physics.

This would mean that polar explorers who went on an expedition with a certain job, like surveying and recording the newly discovered land would be highly trained and would know how to use equipment like a theodolite.

Show the class the 'modern theodolite image resource'. Explain that with a modern-day resource, the measurements are read and stored digitally; whereas the polar explorer would have to use knowledge of maths, geometry, trigonometry and physics to work out the measurements.

Main part of lesson

Listen to the journal reading 'BGLE extract reading southern lights'.

Explain that in this extract, A. Stephenson, an explorer with the British Graham Land Expedition (1934-37), is recording a journal about using a theodolite and the stars at night to plot where the camp location was on a night in September 1936.

Discuss what it must have felt like to have to plot your location so that you could go to bed knowing where you were. What would it be like to not know where you are?

Look at the 'Navigation' pages in the encyclopedia of artefacts resource (pages 46 to 53) here:
http://polar.lgfl.org.uk/encyclopaedia_of_artefacts.html#book/5

http://polar.lgfl.org.uk/encyclopedia_of_artefacts.html#book/49 and
http://polar.lgfl.org.uk/encyclopedia_of_artefacts.html#book/51

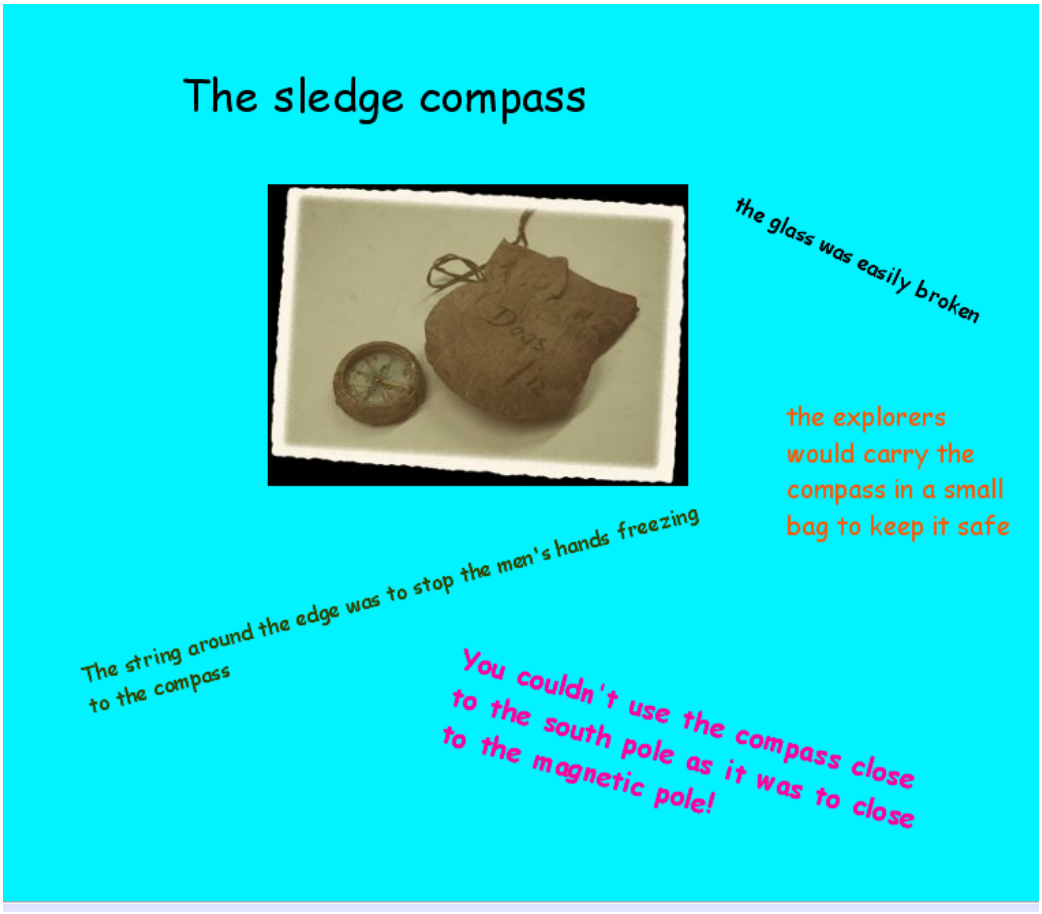
http://polar.lgfl.org.uk/encyclopedia_of_artefacts.html#book/53

The artefacts shown here are the sextant, watches, sledge compass and sun compass.

Explain that in this lesson you would like the class to choose one piece of equipment, read the text on the Polar site about it, watch the accompanying video, and use j2e5 to create a presentation about their chosen piece of equipment.

Demonstrate how to right click and copy the image from the Polar resource and paste into j2e if necessary.

Pupils are to create a presentation using interesting facts, e.g.



As a follow up activity, you could ask the class to research a modern-day version of their chosen piece of equipment and add this information into their presentation as a compare and contrast activity.

Remember to discuss safe searching and validation of the site the pupils use if they are carrying out their own research, as well as the issue of copyright if using images from another source. Draw pupils attention to the fact that in the 'modern theodolite image resource', it says 'Royalty Free Stock Photo'. Explain that this is because this image has no copyright limitations and can be used as a stock photo. Discuss the correct use of images in presentations.

Plenary.

As a class, share some of the completed presentations.

Look at the Peter Clarkson Polar Stories resource page 14 'Handheld GPS'

Watch the video together and discuss how this modern technology makes exploration of the Polar Regions easier and safer as navigation is more accurate and straightforward. Discuss the use of GPS.