A BLAST FROM THE PAST!

Breaking news!
A Viking ship, which for 1,000 years has held the body of a chieftain, with his shield on his chest and his sword and spear by his side, has been excavated on a remote Scottish peninsula – the first undisturbed Viking ship burial found on the British mainland.

Did you hear about the Viking burial ship that was discovered in Scotland?

Yes! Apparently it’s over a thousand years old!

Pete and Bert, school friends
A blast from the past!

Teacher’s guide
On 19 October 2011 we heard in the news that a Viking ship, buried for more than 1000 years, along with the body of a chieftain and his sword, shield and spear, had been excavated on the peninsula of Ardnamurchan, a remote area on the west coast of Scotland. We thought this would make an interesting theme for this issue’s It’s in the News!

In these slides there are links to geography and history. If you do a topic on the Vikings, you might find these slides helpful. If not, why not share this with your class anyway? The slides give opportunities for work on a variety of mathematical concepts such as number, shape and measurement.

… continued on the next slide
… continued
Before you use the slides you might find the following websites useful for information on this discovery and the Vikings in general:

- **The Guardian** - this includes a video of part of the excavation
- **Ardnamurchan** - this website gives details of this area of the UK
- **BBC History** has useful information about the Vikings.

You might also find it helpful to make use of the article on the Vikings in **Issue 39** of the Primary Magazine.
**1st slide: A blast from the past!**

- Introduce the first slide by asking the children to read the children’s comments and the ‘Breaking News’ information. If the ship is over 1 000 years old, in what year might it have been built? If the first invasion of the Vikings took place in AD 793, how many options are there? You could use this as an opportunity for some number line work, such as counting on and back, finding differences.

- As well as the finds mentioned in the slide, the report states that there were also a knife, an axe, and a bronze object thought to be part of a drinking horn. Dozens of iron fragments, which are still being analysed, were also found in the boat. You could ask the children to find examples of these in the internet and explore their shapes including symmetry.

- What is a dozen? You could explore the properties of the number 12. Younger children could make patterns of objects or number sentences that total 12.

- The excavated Viking ship was 5m long and 1.5m wide, Ask the children to explore these dimensions on the playground or in the hall. They could sketch out the real size of the boat using chalk. Can they all fit into it? How many rows of children would fit from side to side? How many children in each row? Does this number stay the same, increase or decrease from one end to the other? Rows of the same number of children would give the opportunity to explore arrays.

- They could make a scaled down drawing. Encourage the children to make up their own scale so that their drawing will fit onto a piece of A3 paper. They could then work out how much smaller to make it so that it fits on a piece of A4 paper. This is a good opportunity to explore ratio and proportion.

- You could also use the dimensions for some conversion between imperial and metric units.

...continued on the next slide
1st slide: A blast from the past! continued...

- You could read some snippets of The Guardian article to the children to give them a sense of the excitement the archaeologists felt on discovering this relic. You could show them the video clip too.

- You could explore the number 1 000, for example what are its properties – is it odd or even, what are its factors, is it a square number etc. The children could apply the rules of divisibility to find its factors. If you need to know the rules of divisibility here are some of them:

  - 2: if it is even
  - 3: if the digits total 3, 6 or 9
  - 4: if it is even and the last two numbers are divisible by four
  - 5: if the number ends in 5 or 10
  - 6: if it is even and divisible by 3
  - 8: if it is even and the last three numbers are divisible by 8
  - 9: if the digits total 9 or a multiple of 9
  - 10: if the number ends in zero.

- They could identify Ardnamurchan, the place where this discovery was made, and describe its position in the UK using the four or eight compass points.

...continued on the next slide
1st slide: A blast from the past! continued…

- Download the information from the Ardnamurchan website and ask the children to make up a fact file of things to see, what to do etc. Encourage them to search for as many mathematical facts as they can find to add to their fact file.

- Show some of the photographs of the Ardnamurchan peninsula from Google. Ask them to spot any mathematical themes. These could include shape, symmetry and number. You could ask them to make a drawing or painting of one of the photographs, for example Ardnamurchan: Sunset and ask them to accurately paint the picture with the symmetry that can be seen from the reflection in the water.

- The BBC weather website gives current details of the weather in Ardnamurchan over a four day period. Ask the children to look at these and compare the maximum and minimum temperatures with those in your area. They could display this information in a line graph. The Ardnamurchan website gives links to three-day and five-day forecasts. The children could also explore these. Are they the same or do they vary? You could make similar comparisons with rainfall. Ask the children to search on the internet for this information for themselves.

- Ardnamurchan lies at a latitude of 56.7N and a longitude of 6.0W. Discuss with the children what this means. Give them maps or use Google Earth or a similar website to explore the latitudes and longitudes of your area and others that they are familiar with. They could list these. You could use this as an opportunity to explore compass points and directions.

…continued on the next slide
1st slide: A blast from the past! continued...

- Look at the map of the UK on the slide. Can the children locate whereabouts on the map they live? You could give the children maps of the UK, maybe by downloading them from a website. *It’s in the News Issue 35* has a map that you could use. They could then find their location and the approximate location of Ardmunachan. They could work out the approximate distance from one to the other using the scale on the map. They could explore ways of getting there, which roads to take and what mode/s of transport. They could work out how long it would take to drive at an average speed of 60mph. Would it be quicker to fly to Glasgow airport, hire a car and drive the rest of the way. They could plan a trip.

- Can they locate any other cities in the UK? You could give them a copy of the slide so that they can mark those they think of onto it. You might need to give them a map to assist them with this. They could then make mathematical fact files for the cities which include their populations.

- You could discuss the different countries in the UK. Ask the children to highlight these on their maps. You could explore these countries and ask them to make up a database of the information which includes such things as population and climate. Depending on the age of the children, they could explore population according to age group, gender etc. They could then explore these by posing questions and use their databases to answer them. Suggestions on how to create and use a database can be found in the ICT articles in *Issue 38* and *Issue 29* of the primary magazine. You could discuss which country appears to have the largest area and how could they find out if they are correct. They could cut the individual countries out and explore their areas by placing them on centimetre squared paper. They could then cut each country up and arrange the pieces into a rectangular shape and then calculate the area in square centimetres. They could then scale the sizes up to find the approximate real areas.

- Focus on the Viking swords. How many can the children see? You could use this as an opportunity to practise number pairs to 10, addition and subtraction of small numbers etc.

…continued on the next slide
$1^{st}$ slide: *A blast from the past! continued…*

- Look at the Viking coins. Ask the children to give an estimate of how many there are. Discuss the most efficient way to count them. As they are in pairs, you could use this as an opportunity to count in twos and practise two times table facts and corresponding divisions.

- Focus on the Viking ship. Ask the children what they think is happening. It is a Viking burial ship for a dead chieftain. Can the children count the shields on the ship? If there are ten on one side and the same number on the other, how many shields altogether? You could ask questions such as if there are 24 shields altogether, how many would be on each side? This would be a good opportunity to rehearse doubling and halving.

- Focus on the sail of the ship. What shape do they think it will be if straightened out? This could lead into an exploration of quadrilaterals – what are they, which have specific names and what are their properties, which would make good sails?

- Ask the children to describe the Viking chieftain. What is he carrying? What are his clothes like? Can they see anything symmetrical in what he is wearing or holding? You could ask them to sketch his helmet, sword and shield, making them symmetrical of course!

- You could highlight the chieftain’s shield and use it to explore rotation. The children could make a circle as described in ‘Space Junk’ from *It’s in the News* Issue 39. They could divide it into four sections and colour as in the slide. They could then explore rotating it around a central point of their choice and draw and colour it in the new positions.

- Younger children could explore simple fractions using this shield. They could make half and colour each half in a different colour or pattern. They could explore different ways to show half. They could make quarters and do a similar thing. They could then explore eighths by halving the quarters. You could ask equivalent fraction questions such as how many eighths make a half, a quarter? In how many different ways could you make half (e.g. quarter and two eighths), three quarters (e.g. half and two eighths) etc.?
2nd slide: Viking Invasions

- Introduce the second slide by asking the children if they know when the Vikings invaded the UK. Establish that the first Viking invasion happened in AD 793 and the last in 1066. They could plot these on the number line you might have created from the first slide. Plot the year we are in today and other significant times e.g. the birth year of the children, periods in history that you have previously covered. Work out the differences between these dates using the counting on strategy.

- Look at the Viking invasion map. Can the children tell which countries these people came from? They could explore the countries in more detail, making up the usual fact file to include temperatures and rainfall and population etc.

- They could work out approximately how far these distances are and how long it might have taken the Vikings to travel them.

- Give the children copies of the map of the UK from Issue 35 of the Primary Magazine and ask them to find some cities that are in the area that the Vikings settled. They could create mathematical fact files for these so that you can compare them. You could work out distances between them using the scale on the map.

- Ask the children to find out if their village, town or city is in this area. What do they notice about the place names of some of the places that were Viking settlements?

- Ask younger children to tell you how many boats they can see on the slide. How did they count? You could explore efficient counting strategies such as multiplying three by three and adding two, multiplying three by four and subtracting one. These ships could lead into work on number pairs for certain totals, simple addition and subtraction, doubling and halving etc.

…continued on the next slide
2nd slide: Viking Invasions continued…

- If possible print this slide out. Ask the children to cut out the shields and ships and use them to create different repeating patterns. How many different ones can they find using one ship and one shield, two ships and one shield, two ships and two shields etc.

- Ask them to identify the shapes in the shields. Can they see shapes that could be triangles and quadrilaterals? Can they see any lines of symmetry? You could ask them to design their own shields using a variety of 2D shapes – making them symmetrical of course!

- You could ask the children to explore other historical excavations, such as those found at Sutton Hoo. It’s in the News! in Issue 32 of the Primary Magazine featured the remains of a settlement discovered late in 2010 at the site of a hotel development in Syon Park, Hounslow. They could make a database of what they find.

A little bit of history in Issue 39 of the Primary Magazine features the Vikings. You may like to use what has been written in that to explore this period of history in more detail.

There are numerous links between the Vikings and mathematics. We have given a taste of just a few which we hope might get you started the next time you cover this topic!