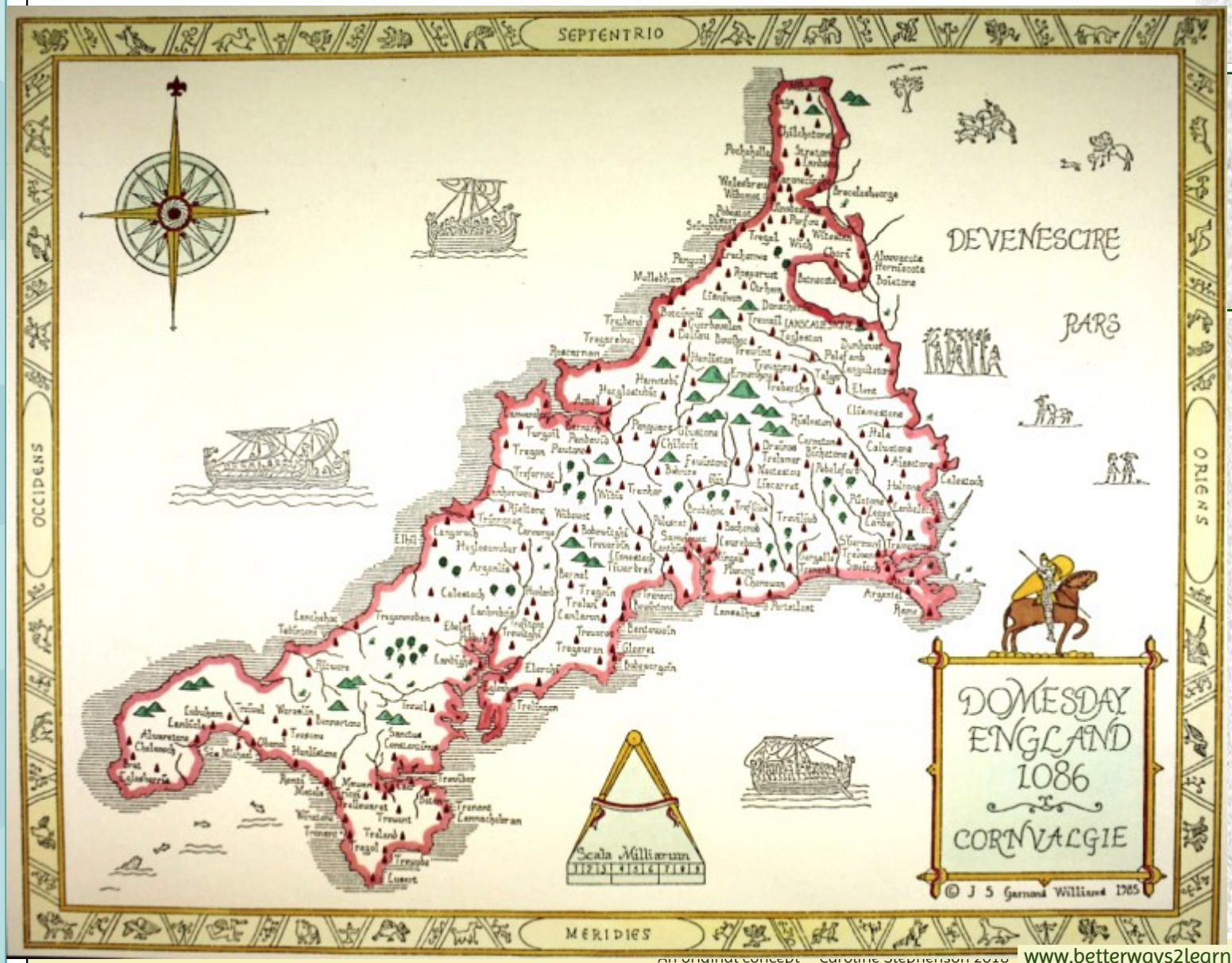
A Better Ways 2 learn Project

developed & demonstrated at

The Meadow Barns Centre PL24 2SA



The story of

MAPS

www.betterways2learn.co.uk

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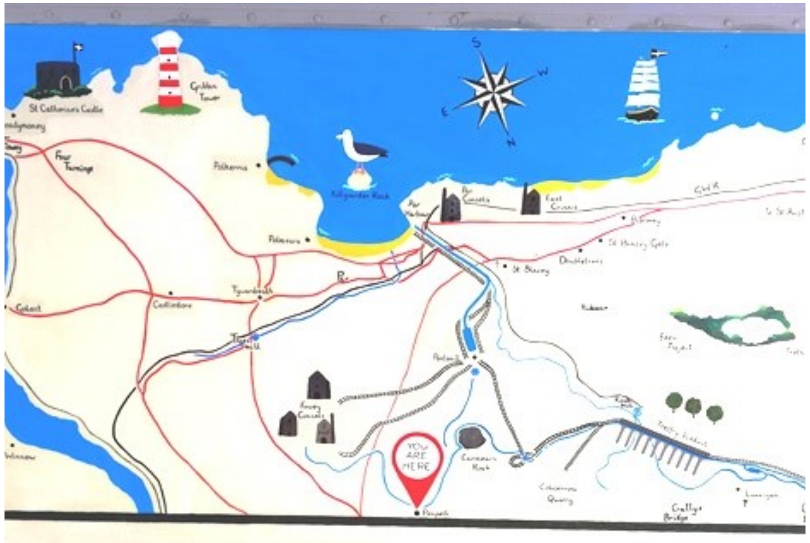
The Map at Meadow Barns

PL24 2SA
The Meadow Barns Centre



Our map was planned, sketched and then painted by an artist - Louise Harding.

It is a combination of the official kinds of map, like the ones made by Ordnance Survey (OS for short - more about this later) and an artistic landscape kind of picture.

TASK 1 - Draw a page of OS map images, on the left, with full descriptions on the right.

Official maps have a recognised list of images, used for representing landmarks, such as churches or railways … even pubs!

(Geography and Art)

The important things maps show us

Maps are commonly used to find our way from one place to another. That was not always the priority. Throughout history the main concern was that a map should provide accurate plans for fighting wars.

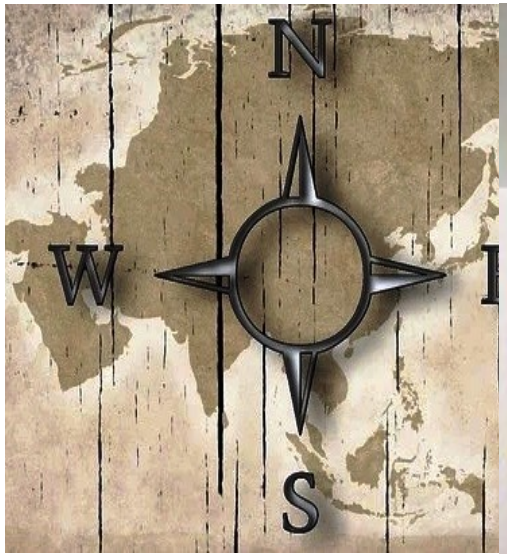
Recently, with the arrival of GPS systems on phones, maps are less popular. But SAT NAVs can cause ridiculous accidents - read about it here .. https://www.smithsonianmag.com/innovation/brief-history-maps-180963685/

In addition to distances and directions, we sometimes like to find out how high above the sea level we will be going .. Some Apps describe it in terms of an elevator between floors in a hotel!

TASK 3 - How did map makers help people to know locations?
How can the height above sea level be shown?
How about making a model of hills and valleys around your home?

4) What is the story of the Compass Rose?

Our Meadow Barns compass is upside down. Question Do you remember why? Answer To reflect the landscape that you can see ahead.



When the compass was invented it greatly improved the accuracy of maps and thus the safety of ships, navigating unknown waters around the world. This is quite a detailed and complicated source, but it is very interesting and covers lots of important geographical concepts: - https://www.nps.gov/fora/learn/education/navigation-and-related-instruments-in-16th-century-england.htm

5) Magnetism and making a compass

The compass works because of magnetism - a fascinating invisible power around our planet. We can see & feel its pull on metals, but not all metals. Can you find out which?
The earliest understanding of magnetism was from a special rock, called a Lodestone (AKA magnetite). Could you find one in Cornwall?
There are lots of **TASKS** you could undertake about this.

1) Make a globe from a ball & thread, to repre-sent magnetic fields.
Stick pins in for North, East, South and West.

2) Hunt for some lodestone and use to magnetise a metal rod or nail
3) Make an actual compass, floating in a bowl of water in your garden to show N-S
See this great example https://www.youtube.com/watch?v=4_tQQFHpSa4 World of Engineering

6) Finding your place with Triangles

Sailors at sea wanted to navigate from maps. But first they had to know the exact location of their boat. Sun, moon and stars could help them, but not in bad weather.
A transformation occurred in the 1820s when pre-existing telescopes with measurement capabilities, called Theodolites, were upgraded to be more accurate, for drawing the first official Ordnance Survey maps.

Using a Theodolite the location of a 3rd point could be found, in relation to 2 others that were already known. The calculations were based on angles & lengths of sides on triangles, hence the name Triangulation.

TASK - Visit a website called the Renaissance Mathmaticus & find the section about Snell's triangulation. Set up a mini one in the garden!

7) Elevations and Trig pillars

TASK - Watch the 1st three Youtube films from 'Navigator Bushcraft'.
It is clear from Film 3 that anyone can find locations precisely using high points (elevations) in the landscape, + the compass angles, map, pencil & ruler. This explains why high points, like church towers & the Gribben Head marker, were so important to navigation in this area.

In the early 1900s the UK was falling behind other countries, using only old triangulation maps. The director of Ordnance Survey wanted something more accurate and so he set up the Re-triangulation of Britain. It took almost 30 years (1935 to 1962) to complete, & involved making 6,500 specially built high pillars. These were called Trig Points or Pillars, short for Trigonometry (the study of triangles).
There are Trig Points close to Meadow Barns. Your final **TASK is to start visiting some, taking photos and keeping records. GOOD LUCK!**

8) In conclusion - a competition

If you find this topic as interesting as I have, then you may get very hooked into researching. So, why not produce something as a permanent record of what you do?

- It could be a diary, with some photos or other illustrations. Your own drawings would be even better, in a scrap book.
- It could be a film, a bit like a TV news report, where you introduce and describe what you have most enjoyed.
- Ideally it will include some original writing ... it can be technical and scientific but even better if you get creative. A poem, a song even ..
- You could adapt words of this song, 'Money makes the World Go Round' but change to 'Magnets make the world go round' etc ..
- Let's see how many other families get interested in this.
- There will be certificates and prizes for the best!

SUMMARY, DISCLAIMER & COPYRIGHT

This pack is designed as a stimulus and guide for further exploration. The age of student I have in mind is in the final year of junior school, but content may be simplified for younger readers or explored in greater depth for older ages.

I cannot vouch for the correctness of any speaker or writer on the various websites suggested. In particular you may not hold me responsible for getting lost, or having an accident exploring in the landscape!

Further Questions or to book a visit please send your email to cjs@betterways2learn.co.uk