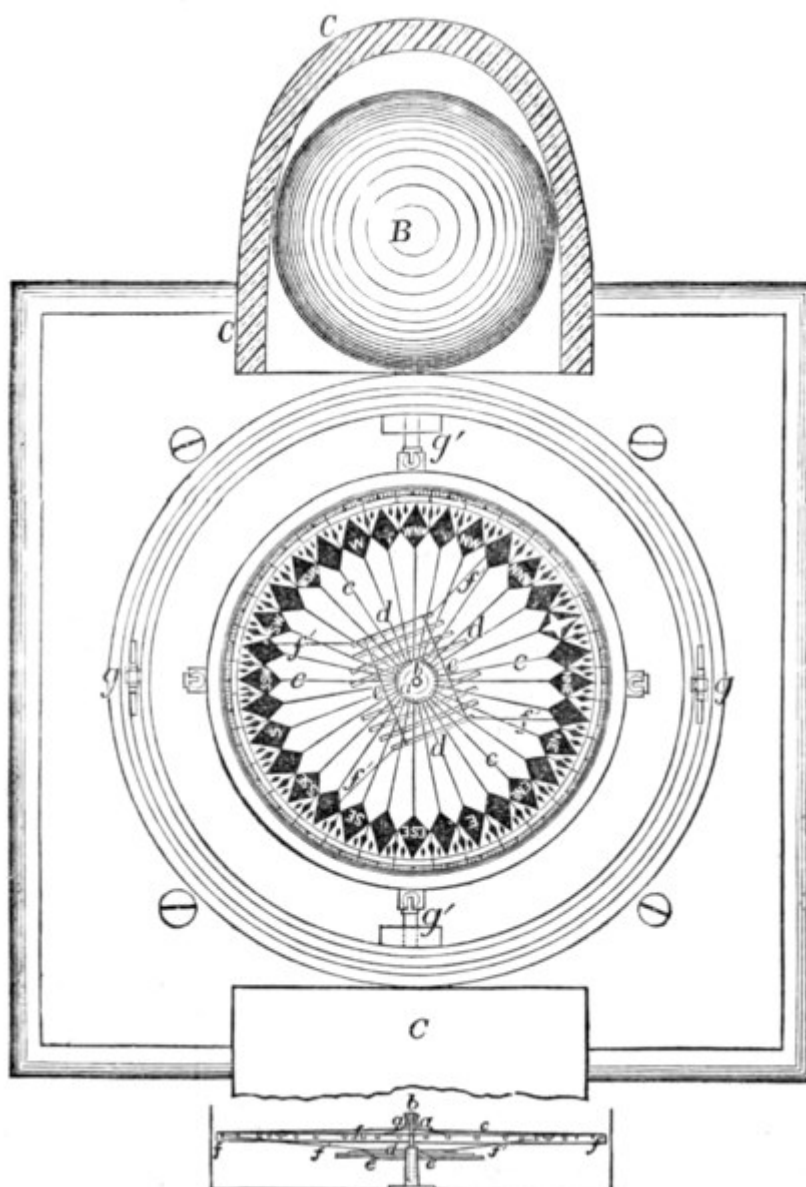


Let's Investigate

Mapping



Hi! I hope you enjoy exploring math with us this year. I created these pages for my children and I am happy to share them with you, so your family can enjoy them also. I have tried to include a variety of activities that can be used with children of all ages. Just print off the activities that you think will suit your children. Most of the activities are investigative, so you won't need an answer book. If you get stuck please email me and I will be happy to help. If the activities are research based questions I will provide links to help with finding the answers. I have also included a list of books, or web pages, you might enjoy to explore while looking at the topic. I hope you enjoy these investigations!

Created by Jo Buijs

Instagram

[nature_study_australia](#)

[Jo_mathinnature](#)

Please print these pages freely within your home. If you would like to share this resource, please link back to naturestudyaustralia.com.au. Thank you!

Any pictures are either my own work or have been sourced at

Clip Art ETC <https://etc.usf.edu/clipart/> (Images have been used according to the free classroom use license.)

Or

Wikimedia Commons https://commons.wikimedia.org/wiki/Main_Page

Front cover picture:

[Fig. 2.—Plan and Transverse Section of Sir William Thomson's Compass-card.](#)

Collecting Maps

Have you ever thought of starting a map collection?

When you visit places stop by the information centre and ask for a local map. Shopping centres, zoos, botanic gardens also offer free maps.

Store your maps in a folder with clear plastic sleeves.

If you have relatives interstate or overseas, maybe they would be happy to send you a map from where they live.

Second hand book stores and op shops are a great source of old atlases.

Symbols on Maps

Look at the maps that you have collected, what kind of symbols can you find?

Draw them and write what they represent in your math journal.

Did you know that we use symbols in math all the time?

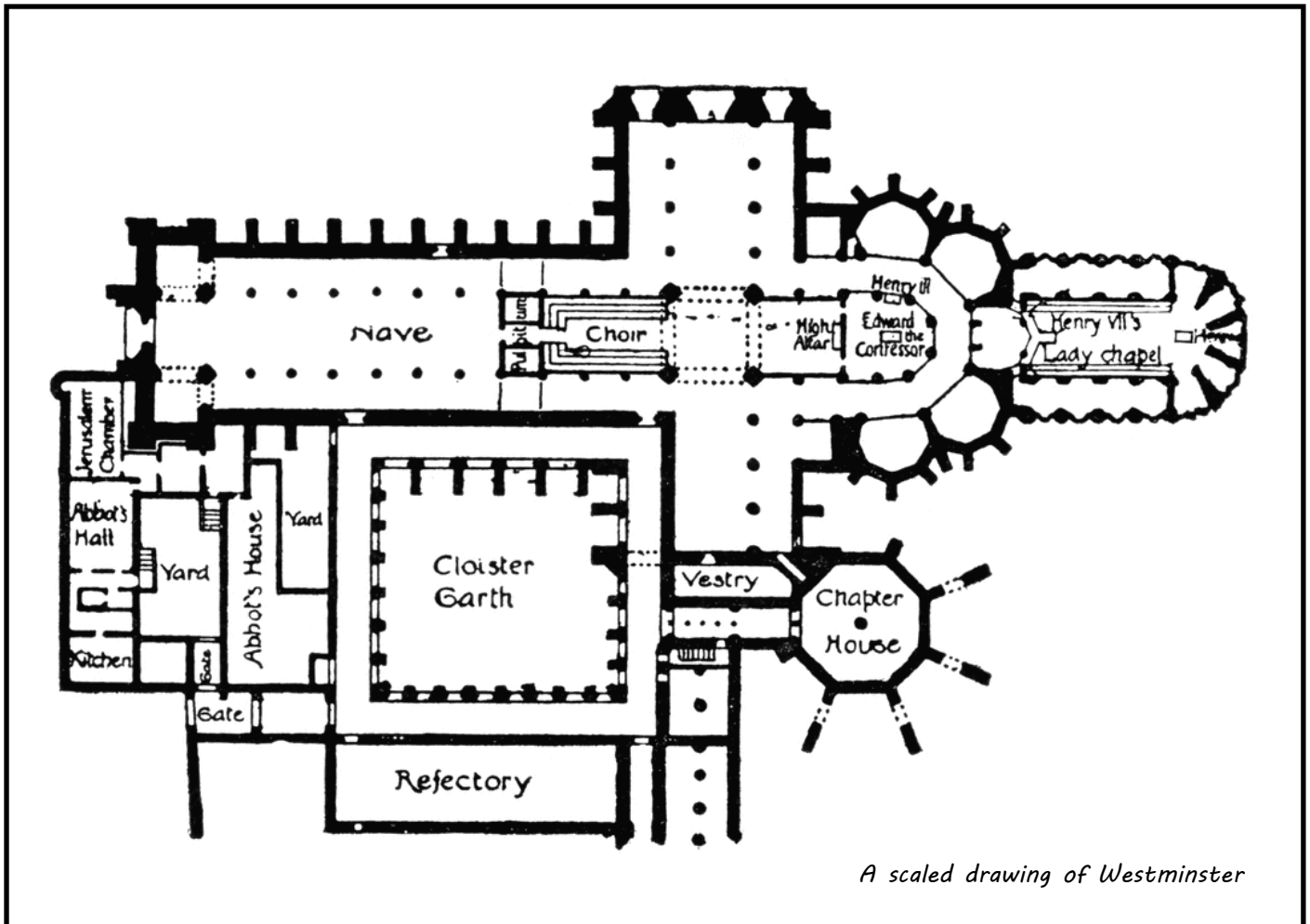
Here are some ones that you might recognise:

+ - = x \$ %

And here are some that you might not know yet:

π \emptyset Δ

Keep a page in your math journal where you can list the math symbols you know and add any new math symbols and their meaning.



Working out scales

Lets do some math with scales! I would like to draw a map of my house.

My house is has a rectangle shape, I have measured the short side (width) and the long side (length). My measurements are 9 meters for the width and 14 meters for the length. To draw my house I am going to write my measurements in centimetres.

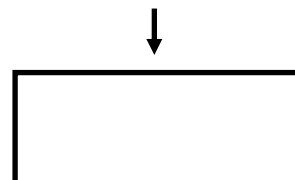
$$9 \text{ meters} = 900 \text{ cm}, 14 \text{ meters} = 1,400\text{cm}.$$

The scale that I have decided to use is 1 : 50. This means that a centimetre on my drawing is actually 50cm or 1/2 a meter. To work out how long my drawing line has to be, I am going to divide the measurement by 50.

$$900 \div 50 = 18 \text{ and } 1400 \div 50 = 28.$$

Now I can draw a rectangle with the sides measuring 18cm and 28cm.

It is fun drawing a scaled map of your house, ask your parents to help your measure and draw your house!



How World Maps Are Made

Have you seen a globe of the world? Our planet is a sphere, so how do you make a flat map of a round world?

There are few different ways that this is done, all of them distort the real shape of each continent. Take a balloon and blow it up to a small sphere shape. Cover the balloon with strips of masking tape and then one strip around the middle. Draw some continents with a marking pen. Pop the balloon. Now cut the masking tape by following the lines to the middle. Lay this as flat as you can. Can you see why the continents will be distorted in a flat map?

Learning About Gerardus Mercator

A famous map maker who lived in the 1500's was Gerardus Mercator.

Learn about him and create a poster showing what you learnt about him and what you think is important about his achievements.



Google Map Investigation

Google Earth is a fun way to explore our planet.

For this investigation you will need a computer and internet.

Open up google earth <https://earth.google.com>

- Click Search
- Find the Sydney Opera House
- To move around drag with your mouse
- You can zoom in and out, At the bottom right, use +/- or right drag the mouse
- Click the 3D icon

Use the scavenger hunt card to find the places, tick them of as you go!

What Is Hiding Here?

| Co-ordinates | What did you find? |
|------------------------|--------------------|
| 48°51'30"N 2°17'40"E | |
| 33°51'24"S 151°12'55"E | |
| 27°59'17"N 86°55'29"E | |
| 51°30'04"N 0°08'30"W | |
| 25°20'44"S 131°02'13"E | |

Advanced Math Activities

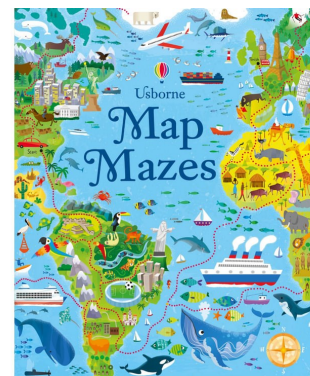
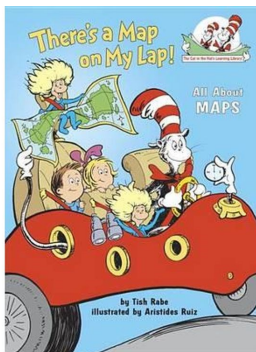
Research: Map makers use different projections to create flat maps of a round world. Research the different map projection processes and write a report on which you think is the most accurate.

Research: Compare maps of the world in the 18th century to those we have today. Describe how they were created and how the process has changed over time.

Extension Work

You can learn more about map bearing measurements with this [VIDEO from FUSE](#).

Books, videos and links that you might find helpful...



Video Links

[For the young ones—Curious George](#)

[Mapping throughout history](#)

[Why every maps is wrong](#)

Links

Lots of links and ideas at [Mr.Donn's page](#)