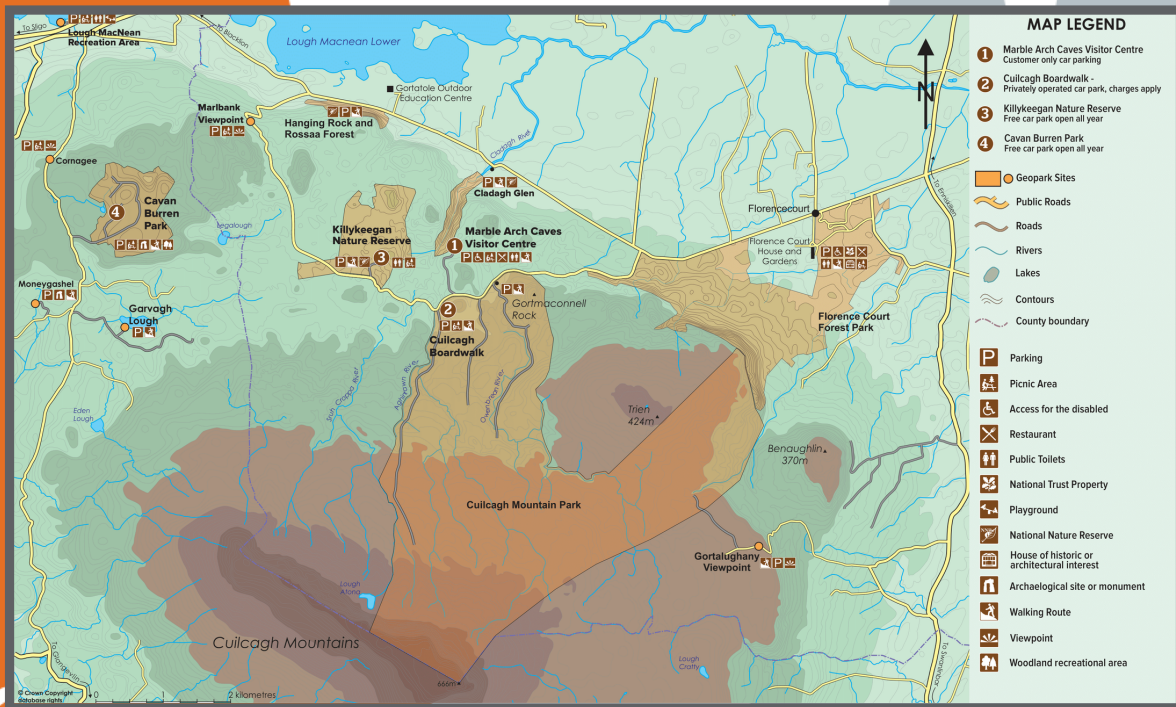# Map Skills
How to Use Maps

Figure 1. Map of Geopark Sites

What are maps?

A map is a drawing or representation of a place which provides some information about what the place is like in reality. They can be useful tools to help us orient ourselves in relation to what can be found in the world around us.

Q. Can you think of any maps you've seen before? Are they always on paper?

There are lots of different types of maps, but for today we are going to learn how to use a basic map representing a place on Earth that we are familiar with. We will look at elements found on maps which help us read them and understand what they mean.

An Example - Map of Local Geopark Sites, Figure 1.

Take a closer look at the map above of sites within the Geopark. You can see it has different elements which have been draw on it to tell us more about what the sites are like in real life. Before we visit the area we can build up a picture of what it's going to be like once we arrive. It has;

- A compass direction (North arrow)
- A legend with map symbols (e.g. the Marble Arch Caves Visitor Centre, parking and picnic areas)
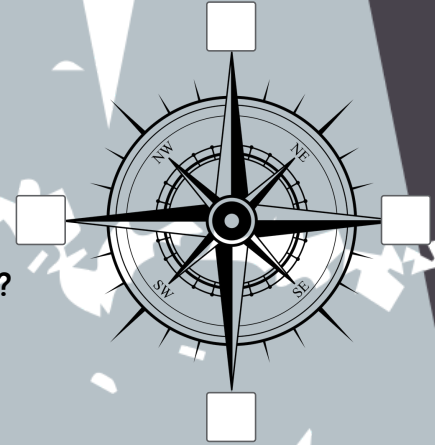- A scale (the green and white bar, 0 to 2km)

To better understand maps we'll take a closer look at each of these and explain how they are used.

MARBLE ARCH CAVES

Waterways Ireland
Uiscebhealaí Éireann   Watterweys Airlann

Compass Directions

A compass direction is indicated on maps using a north arrow or a compass rose. This allows users of the map to orientate themselves and travel in any direction they want.

Can you label the four main compass directions missing on the compass?

Activity - Using the Compass Directions

- Using card, or cardboard, make four large letter markers, N, S, E and W to represent the four main compass points (North, South, East and West).
- Find a compass, or a compass app on a phone and place the markers at the North, South, East and West corners of an open area near to you, such as your garden or somewhere local like a lawn, playground or park.
- Practice moving from one compass point to another, thinking about what direction you are traveling in as you move.
- If you have a a few people, why not have some fun and practice some "Simon Says" by nominating someone to shout out compass directions e.g. "Simon says....travel North" and the last person to reach the North marker is out.
- Don't forget if Simon doesn't "say" then everyone should stay still like a statue!

Did You Know?
The red hand of a hand-held compass always points North. We can use this to determine which direction we are facing.

Map Symbols

On the map above (Figure 1.) you may have noticed some symbols on the right hand side under the title **Map Legend**.

As you can imagine it would be very difficult and untidy to draw everything that's found in one area on a single map, so cartographers (map makers) use symbols to identify common landmarks.

Activity - Guess the Symbols

What do you think these symbols represent?

Do you have any of these landmarks close to where you live?

Map Skills
How to use maps

Scale

It may seem obvious, but a map needs to be a lot smaller than what it represents in real life. How much smaller something is on the map is called it's scale.

As an example of scale we can think about toys, such as toy cars, boats, or animals These are also made to a much smaller scale compared to what size they are in real life. The toys may be smaller but everything else has to be representative e.g. their shape.

A scale bar is added to maps so that people can work out the distance between two points. For example, the scale bar plotted on the Geopark map (Figure 1.) is 1cm =1km. So for every 1cm on the map, we would travel 1km in real life within that area.
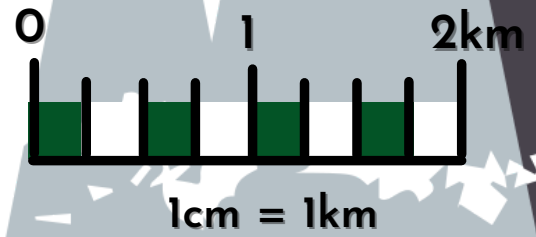
0   1   2km

1cm = 1km

Figure 2. Scale bar used on the map of the Geopark sites

Did You Know?
That scales are also used when representing the size very small objects too. For microscopic things such as cells in the human body scientists use very small units of scale e.g. the unit to measure most human cells is micrometre(µm)

Activity

Let's consider the scale above - 1cm=1km
How far would you travel between two locations if the distance on the map is 5cm?

Answer: _____ km

Now that you have the answer in kilometers(km), what would this distance be in metres(m)?

Answer: _____ m

Many maps, such as Ordinance Survey maps, have scales of 1:50,000. This means that one centimetre on the map represents 50,000 centimetres, or 500 metres.

The Importance of Maps

The great thing about maps are that they can be made to represent just about anything. If you research maps using the internet or books you'll find lots of interesting maps created for all sorts of reasons. As technology advances there are lots of exciting and innovative new ways that maps are being developed, one of which is GIS, or Geographical Information Systems, which uses computers to map all kinds of data.

Maps have been used as tools for navigating the globe, from the freezing tundras of the Artic to the sand dunes of our hottest deserts. Interestingly there are still areas on earth yet to be mapped such points in our deepest oceans and the passageways and chambers of hidden caves yet to be discovered.

Mapping our planet against what we've found in space using telescopes and advanced equipment has also meant humans have now begun exploring our solar system.

Activity - Make Your Own Map

In order to better understand how maps work we have a challenge for you. Your challenge is to make your own map, from scratch, by investigating a local area such as your garden, local park, or a trail you like to visit. Check to see if there are any current maps of the trail or area first as you can use these to plan your route.

Title: ....

Map Legend

Obesrvations:

....

....

....

Q. Did you pass anything interesting on your trail?

Q. Can you invent a symbol to represent it on the map?

Q. Is your map like previous maps plotted for the area?

- If you are up for a challenge, you can make notes of which compass directions you turn at each junction, what landmarks you pass, and note them down your map when you get home.
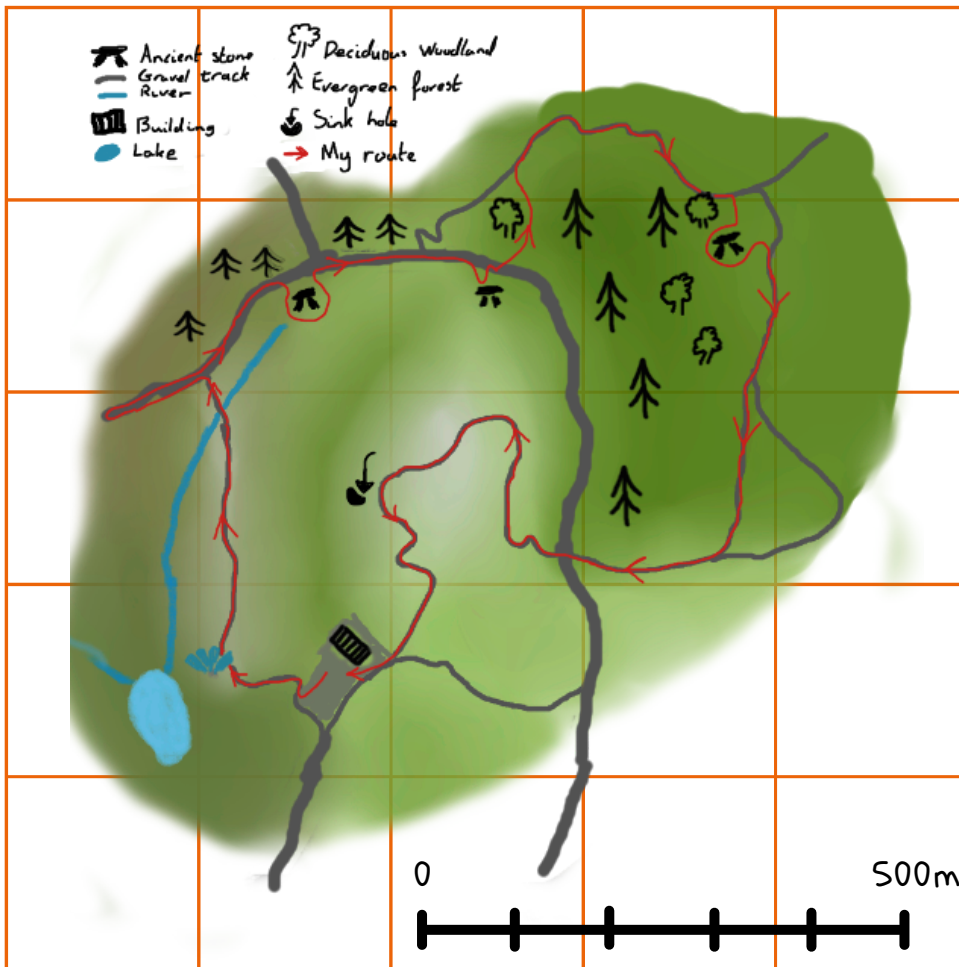
Don't forget to include;

- A title for your map (location and what the map is showing)
- A North arrow (use a compass or a phone app)
- A map legend using some symbols
- A scale (if you don't know the exact distance you could pace it out as steps)
- Make some observations of interesting things you see along the way

Example — Activity - Make Your Own Map

Below you'll find an example of a map drawn for this activity. This is a map of a route along the Cavan Burren Park Trail.

Title: Cavan Burren Trail

Legend on map:
- Ancient Stone
- Gravel Track
- River
- Building
- Lake
- Deciduous Woodland
- Evergreen forest
- Sink hole
- My route

Map Legend

- 🏛 Ancient Stone
- — Gravel Track
- — River
- 🏢 Building
- 🔵 Lake
- Deciduous Woodland
- ⌇ Evergreen forest
- Sinkhole
- → My Route

0 — 500m

Observations: .

On the trail I noticed some smaller paths which might have been made by animals using the area or by the people looking after the Cavan Burren Park.

I noticed some areas of woodland and thought it would be great to mark these down on my map. These were similar to other maps I found online.

I could hear lots of birds and saw some signs of nibbled pine cones so there must be animals living close by.

Maybe next time I can map their habitats.

Don't forget to include;
- A title for your map (location and what the map is showing)
- A North arrow (use a compass or a phone app)
- A map legend using some symbols
- A scale (if you don't know the exact distance you could pace it out as steps)
- Make some observations of interesting things you see along the way
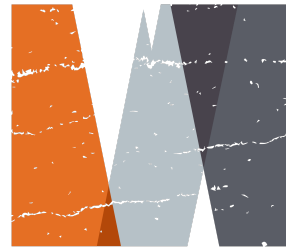
Looking for some for inspiration and information on local trails for your map making?

Both the Marble Arch Caves and Waterways Ireland offer lots of information on local trails and walks you can explore, when it's safe to do so of course. Just check out the links below;

Marble Arch Caves

- https://marblearchcaves.co.uk/local-attractions/
- https://marblearchcaves.co.uk/cladagh-glen-marble-arch-national-nature-reserve/
- https://marblearchcaves.co.uk/attractions/cuilcagh-boardwalk-trail/
- https://www.marblearchcavesgeopark.com/discover-the-geopark/ **(Marble Arch Caves Global Geopark)**

www.marblearchcaves.co.uk

Waterways Ireland

- https://www.bluewaysireland.org/destinations/shannon-erne
- https://www.bluewaysireland.org/itineraries/family-fun-on-the-shannon-erne-blueway
- https://www.bluewaysireland.org/Lists/Blueways/Attachments/1/Ballyconnell%20Loop%20Walking%20Guide.png
- https://www.bluewaysireland.org/trails/ballyconnell-loop-walking-trail

https://www.waterwaysireland.org/

Want to explore maps further?

Waterways Ireland have some other map exploring resources at;

- https://learning.waterwaysireland.org/Resources%20Assets/Exploring%20Maps.pdf