

## THE USAGE OF GPS, COMPASS, MAP

Navigating through unfamiliar terrains during outdoor activities such as hiking, trekking, or mountaineering requires essential skills and tools to ensure safety and accuracy. GPS, compass, and map reading are fundamental navigational tools used by outdoor enthusiasts. Understanding how to use each of these tools effectively can make the difference between a safe journey and a potentially dangerous situation.

### Global Positioning System (GPS)

#### Usage:

- GPS is a satellite-based navigation system that provides real time positioning, navigation, and timing services. It can pinpoint your exact location on Earth, providing coordinates such as latitude, longitude, and altitude.
- It is commonly used for tracking routes, marking waypoints, and navigating unfamiliar terrains.
- Many GPS devices also provide additional information like speed, distance travelled, estimated time of arrival, and digital maps.



#### How to Use:

- **Turning on the Device:** Switch on your GPS device or smartphone with GPS capability and allow it to acquire satellite signals. This may take a few minutes, especially in areas with dense tree cover or narrow valleys.
- **Understanding Coordinates:** Learn to read the coordinates (latitude and longitude) and understand how they relate to your map.
- **Setting Waypoints:** Mark important locations as waypoints, such as your starting point, key landmarks, or your destination.
- **Following Routes:** Use the GPS to follow preloaded routes or create your own. Always have a backup method (like a map and compass) in case the GPS fails.

### Compass

#### Usage:

- A compass is a simple yet essential tool for determining direction (north, south, east, west) and orienting yourself in the wilderness.
- It works without batteries and can be used in any weather condition, making it a reliable backup to electronic devices.
- Compasses are used in conjunction with maps to triangulate your position, set bearings, and navigate through unfamiliar areas.



## How to Use:

- **Holding the Compass:** Hold the compass flat in your hand so the needle can move freely. Ensure you're not near any metallic objects or electronic devices that might interfere with the needle's alignment.
- **Finding North:** Allow the compass needle to settle, then note where it points. The red end of the needle usually indicates magnetic north.
- **Setting a Bearing:** Rotate the compass housing to align the orienting arrow with the needle pointing to north. Then, turn your body until the direction of travel arrow points in the direction you wish to go.
- **Using with a Map:** Place the compass on the map, aligning the edge with your current location and destination. Rotate the map and compass together until the needle points to north on the map, then follow the bearing indicated by the direction of travel arrow.

## Map Reading

### Usage:

- Topographic maps are crucial for understanding the terrain, including elevation changes, natural features, and manmade landmarks.
- Map reading allows you to plan your route, identify key features along the way, and cross reference with your GPS or compass.
- Maps offer a broad view of the area, helping to visualize the entire landscape and not just your immediate surroundings.

### How to Use: Adventure awaits, go find with -

- **Understanding the Map:** Familiarize yourself with the map's legend, scale, and contour lines. Contour lines represent elevation; closely spaced lines indicate steep terrain, while widely spaced lines indicate gentle slopes.
- **Orienting the Map:** Use your compass to align the map with true north. This makes it easier to relate the map to the actual landscape.
- **Identifying Landmarks:** Look for key features such as rivers, trails, ridges, and peaks on the map. Compare these with what you see in your surroundings.
- **Plotting a Course:** Mark your starting point and destination on the map. Draw a route that follows trails, ridges, or valleys, avoiding difficult terrain if possible.
- **Cross Referencing:** Regularly check your map, compass, and GPS together to confirm your position and ensure you are on the correct path.

A table of typical point symbols used in topographical maps of the world (from Olson and Whitmarsh, 1944; actual size). Copyright 1944, Harper & Brothers.

Railway Station	Level Crossing	Motorway	Trunk or main road	Footpath	Bridleway	National Trail/Long Distance Route; Recreational Route
Camp site/caravan site	Viewpoint	Picnic site	Access information point	Building of historic interest	Recreation/leisure/sports centre	Museum
Site of battle	Castle/fort	Cadw: Welsh Historic Monuments	Historic Scotland	English Heritage	National Park boundary	Nature reserve
Access land in woodland area	Access land boundary and tint	Cycle trail	Information centre	Telephone	Parking	Garden/arboretum
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Place of worship with spire, minaret or dome	Place of worship with tower	Place of worship	Youth hostel	School	Post office	Public convenience
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Bus or coach station	Cliff	Wind pump; wind generator	Electricity transmission line	Quarry	Footbridge	Well; spring
Non-coniferous trees	Coniferous trees	Marsh, reeds or saltings	Orchard	Bracken, heath or rough grassland	Scrub	Contours
1:25 000 scale Explorer™					<small>OS Map Symbols Manual - 100000 © Crown Copyright and the Ordnance Survey All rights reserved. No part of this publication may be reproduced without permission in writing from the Ordnance Survey. www.ordnancesurvey.co.uk</small> 	
		Scree	Sand; sand & shingle	Mud		

	ARGENTINA	BRITISH (GSGS)	CZECHOSLOVAKIA	DENMARK	FINLAND	FRANCE	GERMANY	ITALY	NETHERLANDS	RUSSIA	SURVEY OF INDIA	SWEDEN
HOUSES	■		■	■	■ □	■	■	■	■	ALL SYMBOLS BROWN	■ RED	■
CHURCHES	⊕	⊕	⊕	⊕	⊕	○	⊕	⊕	⊕	⊕	⊕ RED	⊕
CHAPELS, ETC	⊕	⊕ MOSQUE	⊕	⊕	⊕	⊕	⊕	⊕	⊕ BASE IN RED	⊕	⊕ RED	⊕
CEMETERIES	⊕ ⊕	⊕		⊕ ⊕ ⊕		⊕ ⊕ ⊕	⊕	⊕	⊕ WALL RED		⊕ ⊕ ⊕	⊕
FACTORIES	⊕		⊕			⊕	⊕	⊕		⊕	⊕ Chy	⊕
WINDMILLS	⊕	⊕	⊕		⊕	⊕	⊕	⊕	⊕	⊕		⊕
WATERMILLS			⊕	⊕	⊕	⊕	⊕		⊕	⊕		⊕
SAWMILLS			⊕	⊕			⊕			⊕		⊕
MINES	⊕ ⊕		⊕		⊕	⊕	⊕	⊕		⊕	⊕	⊕
QUARRIES					⊕	⊕	⊕				⊕ 30d	
LIGHTHOUSES	⊕	⊕		⊕		⊕	⊕	⊕	⊕	⊕	⊕ RED	⊕
BUOYS						⊕				⊕	⊕	⊕
TRIANGULATION POINTS	⊕	⊕	⊕	⊕	⊕ <sub>1/4</sub>	⊕	⊕	⊕	⊕		⊕	⊕
FORESTRIES			⊕				⊕			⊕	DARK RED FILL-IN ⊕	