



Compass Facts

Have you ever used a compass to help you figure out which direction to go?

A compass is a magnet-based instrument used for navigation and orientation.

It works because Earth itself is a huge magnet!

The needle of a compass aligns itself to point towards the top of Earth's magnetic field. It lets us have a consistent sense of direction.

Who uses compasses?

- Aviation: Pilots use compasses to navigate their aircraft.
- Surveying: Surveyors use compasses to measure the distance and direction between points on the Earth's surface.
- Archaeology: Archaeologists use compasses to find their way around ancient sites.
- Geology: Geologists use compasses to map the Earth's surface and to study the Earth's magnetic field.
- Marine biology: Marine biologists use compasses to find their way around coral reefs and other underwater habitats.
- Forestry: Foresters use compasses to navigate through forests and other natural areas.
- Search and rescue: Search-and-rescue personnel use compasses to find lost people.

Can you think of other situations when a compass might be useful?

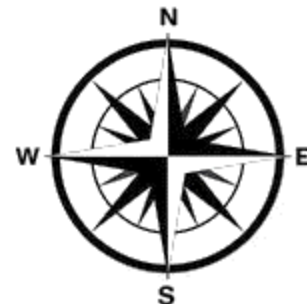
Points on the Compass

There are four main directions on a compass: north, east, south and west. These are the four **cardinal** directions, all set at 90-degree angles around the face of the compass.

Between the cardinal directions lie the **ordinal** directions:

These are northeast, southeast, southwest, and northwest.

To find a **compass bearing** is to determine the exact degree of measure between a chosen point and true north. Compass bearings are always measured moving clockwise along the compass face, with north being 0 degrees.



Wayfinder: Compass Challenge 1

One participant hides a few items (three or four is best) around the space.

Another participant, the Finder, must locate all the items, but walking backwards.

The group will be responsible for directing the Finder towards the items using only directional instructions that they shout out.

To begin, the Finder can check their compass and orient themselves. Then they will have to follow only the directions that are given to them from the group and remember their orientation to move towards the first item and then onto the other items until they locate them all.

For example

Walk ten steps EAST

STOP

Take three steps SOUTHEAST

Now one step NORTH

Look down!

CHALLENGE!

Add variations to the size of your steps: giant steps or baby steps

Use a timer to see who can get through the path the fastest.

Record your directions below. Use as many lines as needed:

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Take _____ step(s) _____

Obstacle Course: Compass Challenge 2 – best for larger groups of 6 or more

Split participants into two groups.

Split the room into two spaces. One group will work on one length of the space, the other on the other side.

Each group will have a defined START and END point. These can be marked with two items or by marking spots on the floor with masking tape.

Participants will use masking tape on the floor to create as challenging a path as possible between the two points. Consider including

- gaps (indicating a big step or a jump)
- zigzags (indicating quick directional changes)
- obstacles (can be items from around the space like chairs, sticks, rocks, etc.)

Each group must plan their path and then create a set of directions for it.

When both groups are ready, they will switch and try to get through the opposite group's course without hitting any obstacles or making a mistake.

Draw your plan and record your directions here: