

COMPASS

I. What is a compass?

- A. A compass is a device used for determining the direction of north.
- B. The first compasses appeared in China over a thousand years ago.
- C. Marco Polo, on his travels, noticed that a magnetized needle floating on a chip of wood always swung around to point north. Many people thought the needle moved by magic.

II. Why does a compass always point north?

- A. Think of the North Pole as a huge magnet. Think of the compass needle as a smaller magnet. In magnets, like forces always repel each other and opposite forces always attract. The magnetic force at the North Pole (actually Northern Canada) attracts the opposite magnetic force on the compass needle causing it to always swing around to the north.
- B. Usually, the end of the compass needle that points North is painted red or stamped with the letter "N".

III. What are the parts of the compass?

A. Direction of Travel Arrow

- 1. This points toward your destination.

B. Baseplate

- 1. This gives the compass a stable base and often includes scales for measurement.

C. Orienteering Arrow

- 1. This allows you to orient your compass in relation to your direction of travel.

D. Compass Needle

- 1. Always points toward magnetic north.

E. Compass Housing

- 1. This holds the needle and has markings that indicate the major points of the compass and degrees from north.

IV. What are the major points of the compass?

- A. There are eight main points on the compass.
 - 1. North 5. Northeast
 - 2. East 6. Northwest
 - 3. South 7. Southeast
 - 4. West 8. Southwest
- B. Face north. South is now behind you. East is to your right and West is to your left. Northeast is halfway between North and East. Halfway between East and South is Southeast. Halfway between South and West is Southwest and halfway between West and North is Northwest.
- C. When you know the direction of North and the major points of the compass, it is easy for you to find your bearings.

V. What are Bearings?

- A. A bearing is a term used to show direction. A bearing is the number of degrees between an object and North on your compass. For example, due East is 90 degrees, due South is 180 degrees.
- B. Method of finding a bearing:
 - 1. Point the Direction of Travel Arrow toward a landmark.
 - 2. Turn the Compass Housing until the Orienteering Arrow lines up with the Compass Needle.
 - 3. The number where the Direction of Travel Arrow touches the Compass Housing is the bearing of the landmark. This number indicates the number of degrees the landmark is from magnetic north.

VI. What is the difference between North and Magnetic North?

- A. True North is the direction of the North Pole.
 - 1. Topographic Maps are drawn with True North at the top.
 - B. Magnetic North is a region in Canada more than a thousand miles away from the North Pole. It is caused by the Earth's magnetic fields. Magnetic North is the direction that all compasses point.
- VIII. If a map shows True North and a Compass shows Magnetic North, how can I get true bearings?
- A. The difference between Magnetic North and True North on a map is called the Declination.
 - 1. You will find a key to the Declination in the margin of a Topographic Map.

IX. How do I make the adjustment for Declination when using a compass with a map?

- A. Change the map.
 - 1. Draw Declination lines parallel with the angle of Declination in the key.
- B. Change the compass.
 - 1. Some compasses have an adjustment screw to adjust for declination.
- C. Adjust the position of your map.
 - 1. Shift the position of your map so that the angle of declination points toward Magnetic North.

Bearing Exercise:

Equipment needed: Compass, Large Paper Bag.

- 1. Turn the compass housing to any bearing. (for example 30 degrees)
- 2. Scout places paper bag over his head so that his field of vision is limited to only viewing the compass.
- 3. Mark a starting place.
- 4. Scout orients the compass and walks 10 paces in the direction pointed to by the Direction of Travel Arrow.
- 5. At this point, the Scout adds 120 degrees to the first bearing. (for example $30 \text{ degrees} + 120 \text{ degrees} = 150 \text{ degrees}$.)
- 6. Scout walks 10 paces on the new heading.
- 7. Scout adds 120 degrees to the new heading. (for example $150 \text{ degrees} + 120 \text{ degrees} = 270 \text{ degrees}$.)
- 8. Scout walks 10 paces toward new heading.
- 9. If you have done everything right, you will be standing beside the starting point.

X. Conclusion

- A. Learning about the Compass is the first step toward orienteering. When you are hiking in the backwoods, a compass is your friend and most valuable tool. It could save your life.