LESSON PLAN
INTRODUCTION TO THE COMPASS
(45 Minutes)

MATERIALS REQUIRED

1 pathfinder compass per Scout
1 topographic map per Scout
1 straight edge per Scout
1 pencil per Scout
1 lensatic compass

INTRODUCTION

There are many ways to determine the prime directions (north, south, east, and west). However, to determine specific directions a compass is required).

PURPOSE AND MAIN IDEAS

The purpose of this period of instruction is to introduce you to the pathfinder compass.

We will do this by covering:

- Types of compasses,
- How compasses work,
- Magnetic vs. true north,
- Declination,
- Ruling a map, and
- Taking bearing from a map.

Upon completion of this period of instruction you will be able to:

1. Identify the two main types of compasses used in land navigation, and explain how all compasses work.

2. Explain the difference between magnetic and true north, apply declination to magnetic and true bearings, and rule a map.

3. Determine true and magnetic bearings from one point on a map to another.

BODY

1st Main Idea: Types of Compasses and How They Work

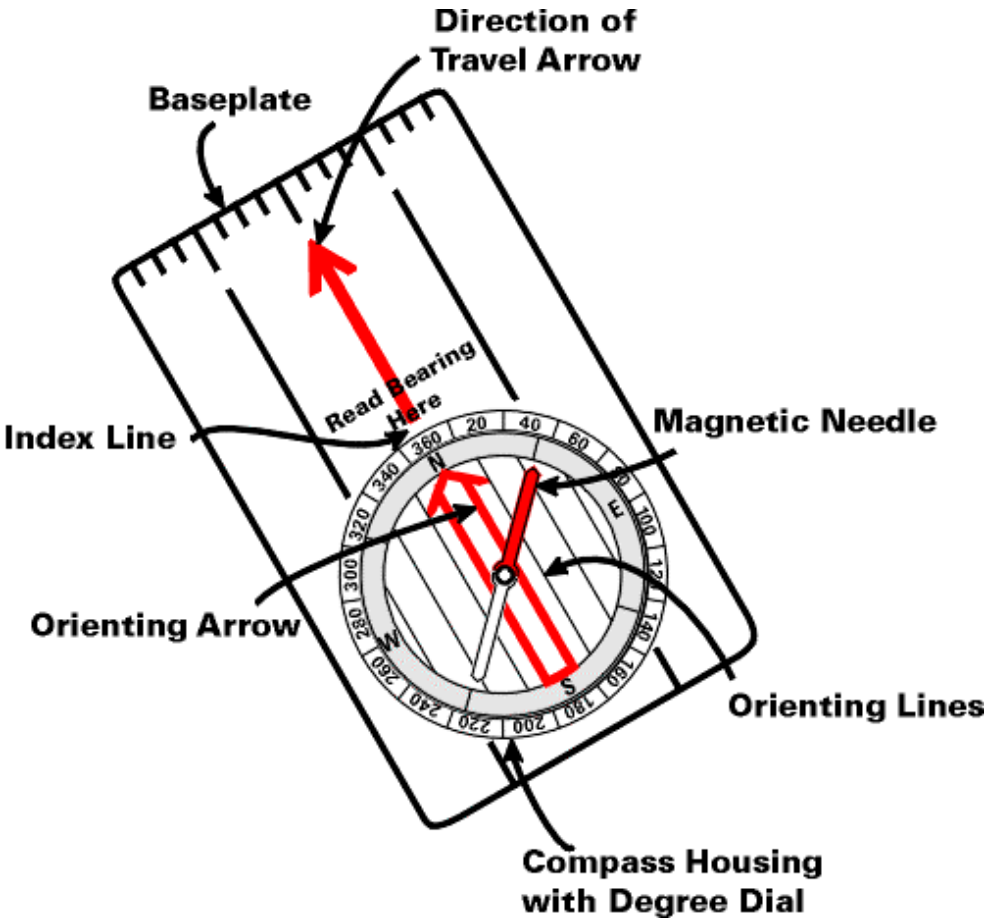
There are many different types of compasses, but only two are commonly used in land navigation: the lensatic compass and the pathfinder or orienteering compass.

The lensatic compass is an excellent compass for determining bearings from one point on the ground to another on the ground. Although it can be used for map work, the second type of compass (the so-called pathfinder or orienteering compass) is better suited and that is the type we will be using.

Whatever type of compass is used, all compasses work the same – a magnetized needle is attracted to a very large mass of iron located in Canada, about 1200 miles south of the North Pole. The north that compasses point to is therefore ***magnetic north***, not true north.

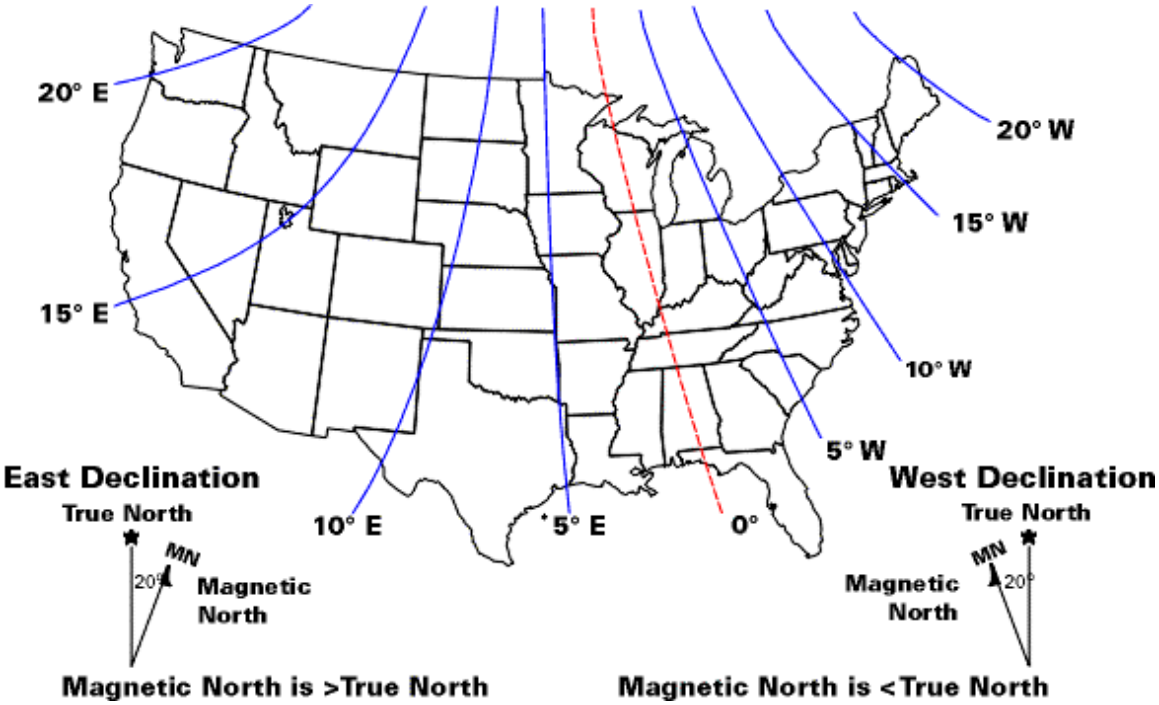
The needle in modern compasses is enclosed in a housing or dial assembly. On pathfinder compasses, the dial is rotated to align an outline of the needle with the north-pointing arrow to orient the compass to magnetic north. The dial is graduated into 360 degrees, with marks usually every two degrees around the outside edge. The dial will also have two or more parallel lines that are used to orient the dial to lines on the map.

The housing assembly is attached to a clear plastic baseplate. The baseplate is marked with a direction of travel arrow and will usually have various scales printed along the edges.



<u>2nd Main Idea</u>: Compensating for Declination

Except for a very narrow stretch running from Lake Superior to the Florida panhandle, true north and magnetic north are not the same. The difference between true north and magnetic north can range from 0 degrees to more than 20 degrees in some parts of the country.



To effectively use a map and compass together, the declination must be compensated for. There are two ways to do this: adjust the compass or adjust the map. Since many compasses cannot be adjusted for declination, and you may forget to adjust the compass, the best way is to adjust the map.

A declination diagram or note in the margin of the map indicates the difference in degrees between magnetic north and true north. If we lay a straight edge along the leg representing magnetic north, and extend the line across the map, we can use that line to orient our map and compass. If we draw several parallel lines, it will make things even easier.

3rd Main Idea: Taking a Compass Bearing from a Map

1. Position the compass so that one edge of the base passes through any two points on the map with the direction of travel arrow pointing in the direction you want to determine.

2. Rotate the compass dial so that one of the parallel lines on the dial is aligned with one of the magnetic north lines on the map.

3. Read the bearing from the compass bezel.

QUESTIONS FROM THE CLASS

QUESTIONS TO THE CLASS