

ngdc.noaa.gov/geomag/calculators/magcalc.shtml#bearing

# Magnetic Field Calculators

Declination | U.S. Historic Declination | Magnetic Field | Magnetic Field Component Grid | **-New- Correct My Compass** | Registration

## Correct My Compass Bearing

This application helps you determine the true bearing based on your compass-based bearing. The compass points to the direction of the horizontal component of the magnetic field in its location, rather than to a specific point. To adjust your compass for the magnetic field in your area, you need to know the magnetic declination, which is the angle between the true north and the horizontal trace of the magnetic field. You can calculate the true bearing by adding the magnetic declination to the magnetic bearing. This works so long as you follow the convention that degrees west are negative (i.e. a magnetic declination of 10 degrees west is -10 and a bearing of 45 degrees west is -45). In this application, the magnetic declination is calculated using the most recent [World Magnetic Model \(WMM\)](#) or the [International Geomagnetic Reference Field \(IGRF\)](#) model. The accuracy of these models is usually within 0.5 degrees. Sometimes, there are local magnetic field anomalies that can cause this angle to be off by more than 10 degrees, but this doesn't happen often. **It's recommended that you register using the registration link on the top right to stay up-to-date on NOAA's magnetic maps and models.**

**#3 set compass bearing to 0**

**#2 this will fill out Latitude and Longitude Here**

**#1 Enter your location and hit "Get & Add Lat / Lon"**

**#4 Either use HTML output for a image or PDF to get a**

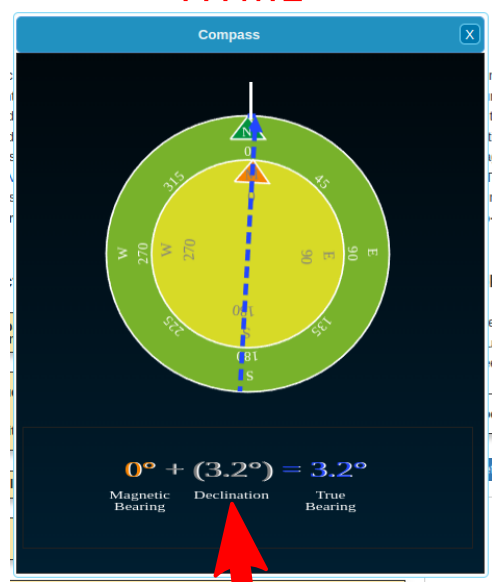
NOAA > NESDIS > NCEI (formerly NGDC) > Geomagnetism Questions: geomag.models@noaa.gov

**#5 Hit Calculate Button**

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HTML



### Compass Bearing

Date: 2024-03-07

Latitude: 30.26759° N

Longitude: 97.74299° W

Elevation: 0.0 km GPS

Model Used: WMM-2020

Declination: 3.2°

Mag Bearing: 0°

True Bearing: 3.2°

To determine the true bearing, simply add the magnetic declination to the magnetic bearing. This works so long as you follow the convention that degrees west are negative. The magnetic declination is derived from models like the World Magnetic Model (WMM), which provides a declination accuracy within 30 minutes of arc. It's worth noting that while uncommon, there are occasional local anomalies that exceed 10 degrees.

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 Help: [How to interpret results](#) | Questions: [geomag.models@noaa.gov](mailto:geomag.models@noaa.gov)

**#6 This is the number you want!**