

Navigation Skills

How to find your way in the wilderness?

Navigation

A Critical Skill in the Backcountry

- Lost?
- What to do?
 - ▶ STOP
 - Sit/ Think/ Observe/ Plan
 - ▶ Plans
 - Rule of Threes
 - Wait to be rescued or navigate
 - Signal Systems
 - Threes - Universal Sign of Distress
 - Fires/ Snow/ Flares/ Mirror

Types of Maps

- Mental maps (e.g. driving home from school)
- Pictorial maps (e.g. artistic rendering; bird's eye view)
- Planimetric maps (e.g. road map, distance & direction)
- Topographic maps
 - Common backcountry map
 - Distance, direction, land features
 - 3 Dimensions represented by 2 dimensional map

Topographic Map Symbols

- Colors
 - Black/ Red/ Green/ White/ Blue/ Brown
- Scale
 - 15 minutes/ 7.5 minutes
 - Latitude & Longitude: degrees, minutes
- Contour Lines
- Special Symbols




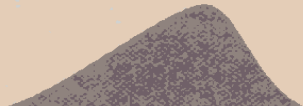



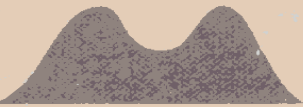
Contour Lines

The Key to reading topographic maps

- Changes in elevation
- Contour interval
- Index contour
- Common shapes
 - ▶ Degree of slope
 - ▶ Peaks
 - ▶ V's and water flow
 - ▶ Saddle/ pass

Practice Test #1

Match each contour outline on the left to the most appropriate hill shape on the right.

A.		_____ 1.	
B.		_____ 2.	
C.		_____ 3.	
D.		_____ 4.	

Compass

Parts and how it works

- Parts of the compass
 - ▶ Baseplate
 - ▶ Housing (Bezel/ Rotating dial)
 - ▶ Magnetic needle (red and white)
 - ▶ Orienteering arrow (meridian lines)
 - ▶ Direction of travel arrow
 - ▶ Index line (to read degrees/ direction of travel)



Magnetic Declination

- Magnetic north
- True north
- Declination
- Magnetic declination in the U.S.
 - ▶ “the rock at Hudson Bay myth”
 - ▶ California - easterly declination
 - ▶ Maine - westerly declination

Map & Compass

- Orienting the map
- Taking a bearing from the map
 - ▶ Orient the map
 - ▶ Set direction of travel arrow
 - ▶ Align orienteering arrow with magnetic needle
 - Putting the dog in the dog house
- Following the bearing in the field
 - ▶ Dog in the dog house
 - ▶ Site the direction of travel

Finding your location

The wilderness mystery game

- Knowing where you've been?
- Identify topographic features!
- Triangulation
 - ▶ Identify features with certainty
 - ▶ Take a bearing on object # 1
 - Reference line on the map
 - ▶ Take a bearing on object # 2
 - Reference line on the map

Navigation without Map & Compass

- General Direction Indicators
 - ▶ Sunrise and sunset (moon)
 - ▶ East/West shadow line
 - ▶ North star
 - ▶ Vegetation patterns
 - ▶ Wind patterns

Key Questions

- Identify the 'categories of symbols'.
- Interpret contour patterns the represent common natural features (hill, drainage, etc.)
- Identify the steps for orienting the map
- Identify the steps for taking a field bearing
- Identify the steps for triangulation

Key Questions

- Identify the parts of a compass
- Know the principles on which GPS functions