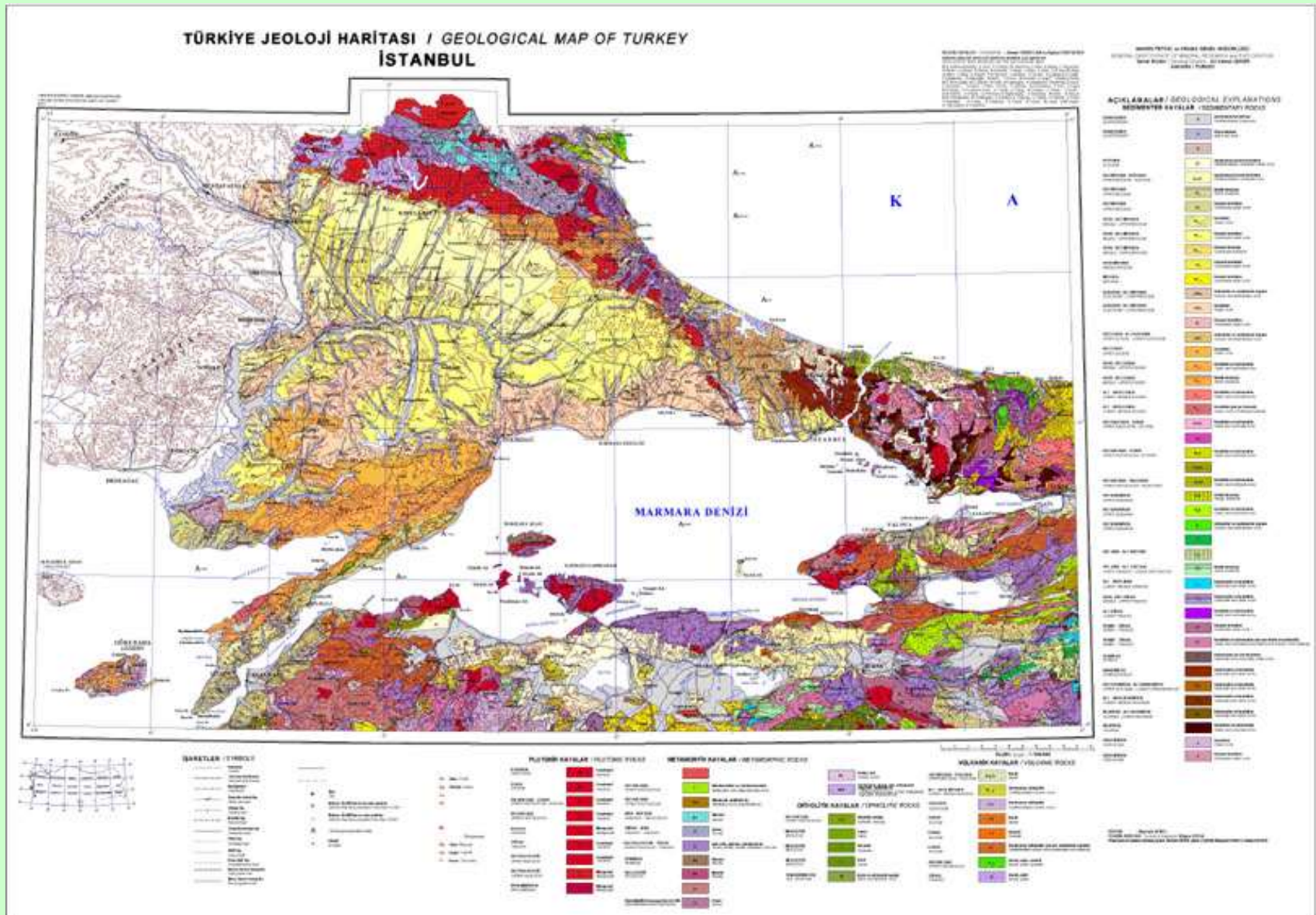




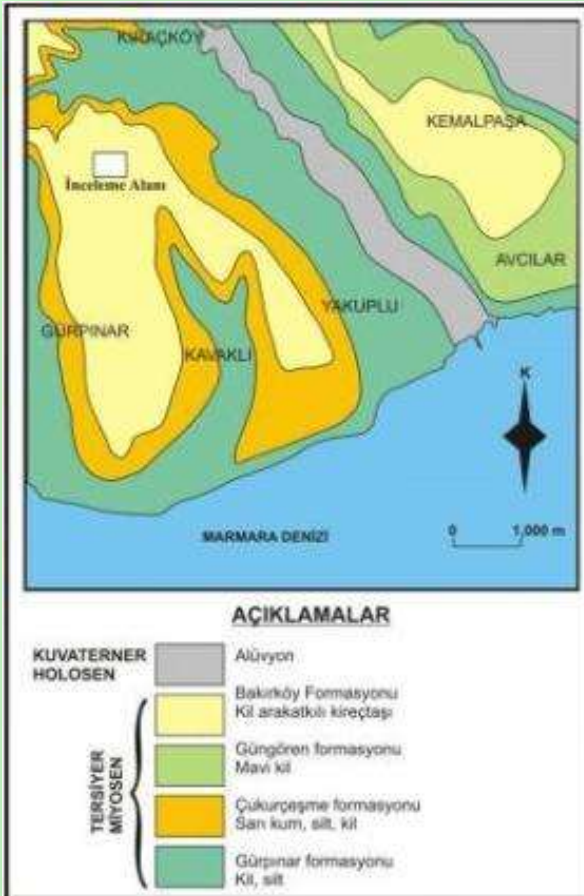


Dersin ipuçları

- Harita bilgisi
- Ölçek kavramı
- Topografya haritaları ve kesitleri
- Jeoloji haritaları ve kesitleri
- Jeolojik kesitlerin yorumları

Harita, yeryüzü parçasının -matematiksel formüllerden yararlanılarak- belirli oranlarda küçültülüp simge, renk ve bazı özel işaretlerle bir düzlem üzerine aktarılmış çizim taslağıdır.

Haritalar, bölgenin topografyası ya da, jeolojisi, jeomorfolojisi, iklimi, trafiği, yeraltı kaynakları gibi diğer konularda bilgi verir



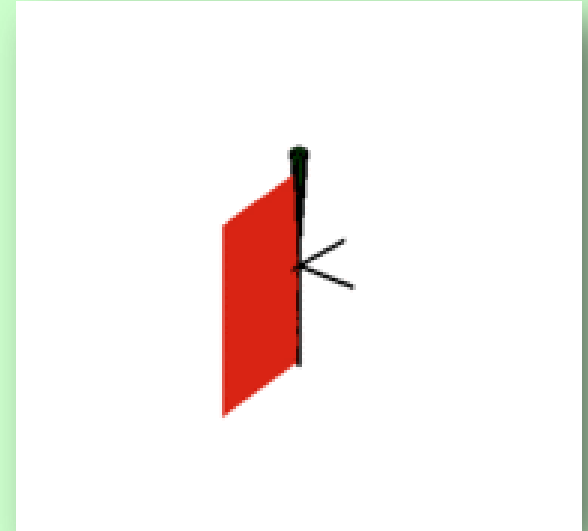
Harita Yapımında Kullanılan İzdüşümler



Düşey Silindirik izdüşüm



Konik izdüşüm



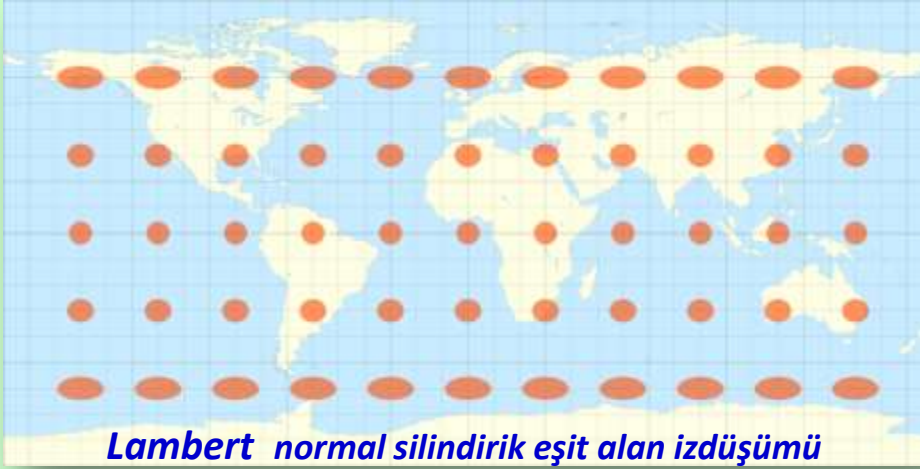
Yatay düzleme izdüşüm



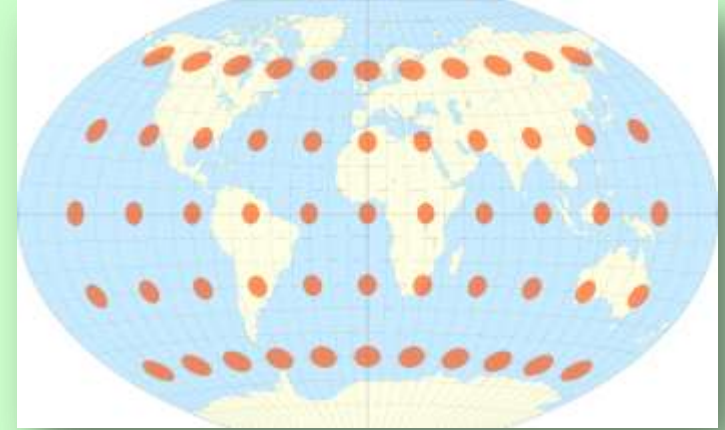
Düşey Silindirik izdüşüm

Farklı İzdüşümlerin sonuçları nelerdir?

Normal silindirik projeksiyonların bazıları



Lambert normal silindirik eşit alan izdüşümü



Winkel Eşit dikdörtgenler izdüşümü
(bir noktadan bakış)



Merkatör izdüşümü

Farklı İzdüşüm Haritaları

• Tobler hyperelliptical



• Mollweide



• Goode homolosine



• Eckert IV



• Eckert VI



• Kavrayskiy VII

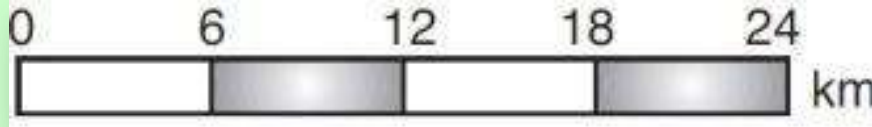


Ölçek kavramı

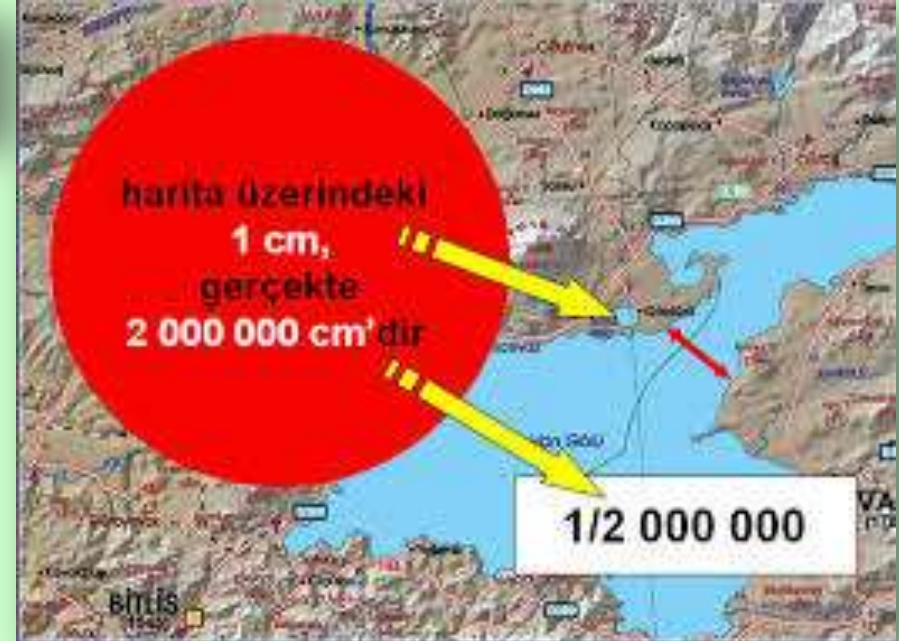


Harita üzerinde belli iki nokta arasındaki uzaklığın, yeryüzündeki aynı noktalar arasındaki uzaklığa oranıdır. Diğer bir deyişle, gerçek uzunlukları harita üzerine aktarırken kullanılan küçültme oranıdır. Ölçek çizgisel veya sayısal yazılır

ÖLÇEK= Çizgisel ölçeğin harita üzerindeki uzunluğu
Çizgisel ölçeğin gösterdiği gerçek uzaklık



Ölçeğin toplamı 4 cm. Çizgisel ölçek kesirli sayısal ölçeğe çevrilebilir. Harita üzerinde 4 cm gerçek arazide 24 km'ye denk geliyorsa 1cm 6 km'ye denk gelir. Bu da 1/600 000 ölçek demektir





Ölçek kavramı

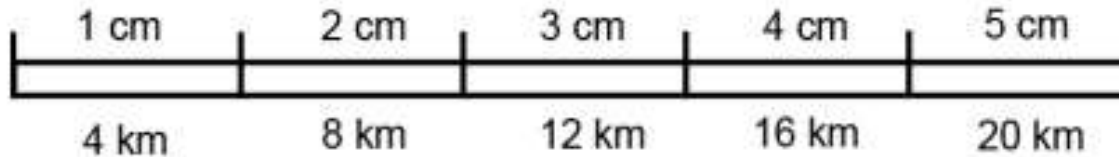
1/400.000 kesir ölçekli bir haritanın çizik ölçeğini çiziniz?

Haritada 1 cm = gerçekte 400.000 cm dir.

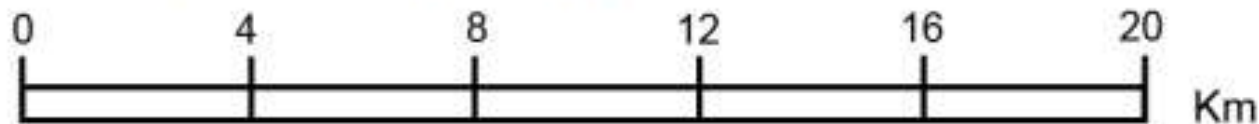
400.000 cm = 4 km dir.

Sonuç: Haritada 1 cm = gerçekte 4 km dir.

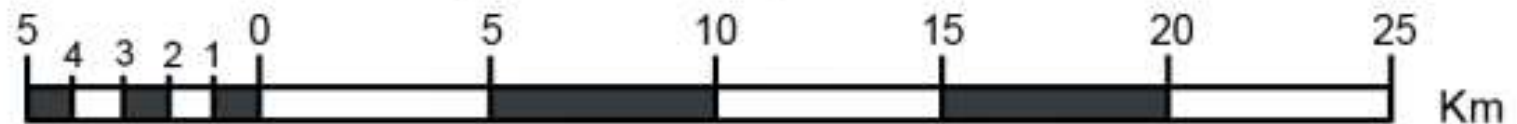
Buna göre çizik ölçekte 1 cm lik mesafe **4 km** dir. Yani,



Bu durumda çizik ölçek aşağıdaki gibi olur.



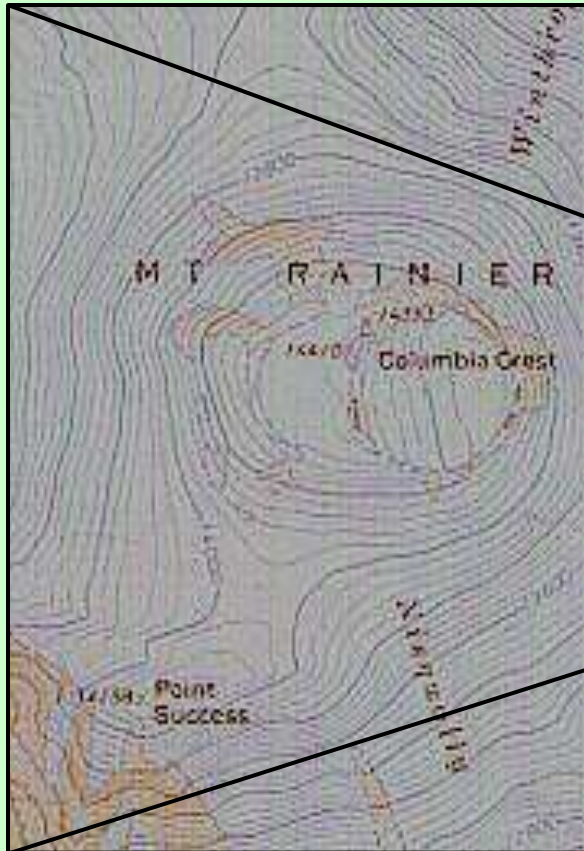
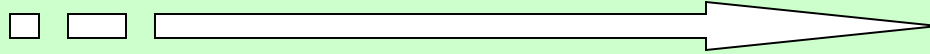
Bazen milimetrik mesafeler için "0"ın soluna ek çizik bölümleri eklenir.



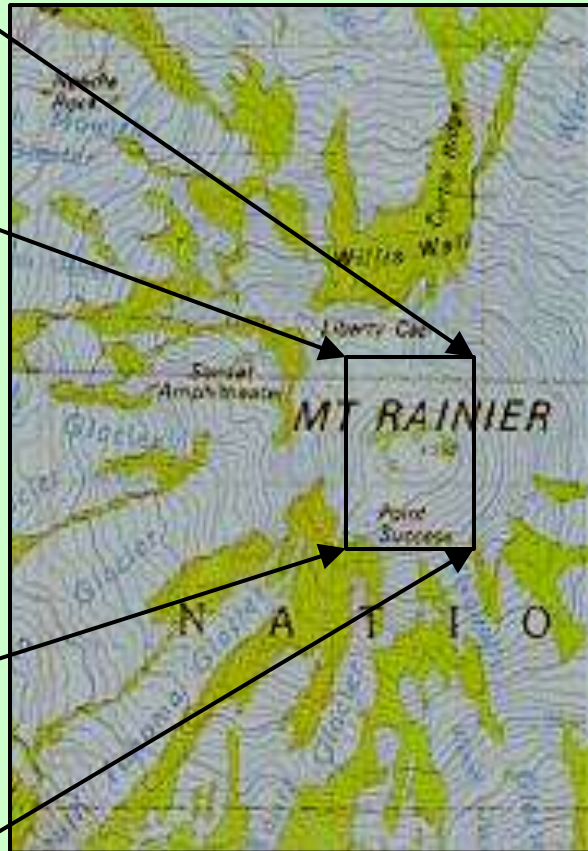
Ölçek



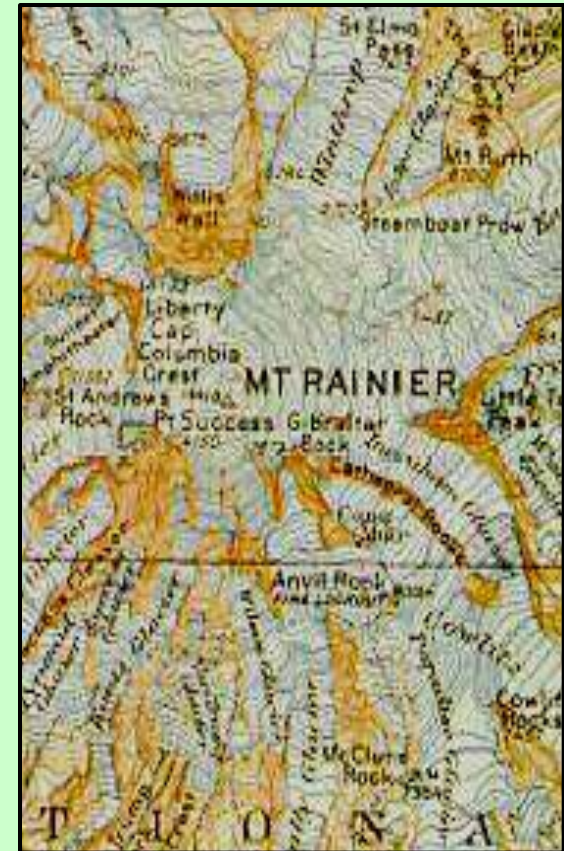
Azalan detay
Artan kapsam



1:24,000 scale



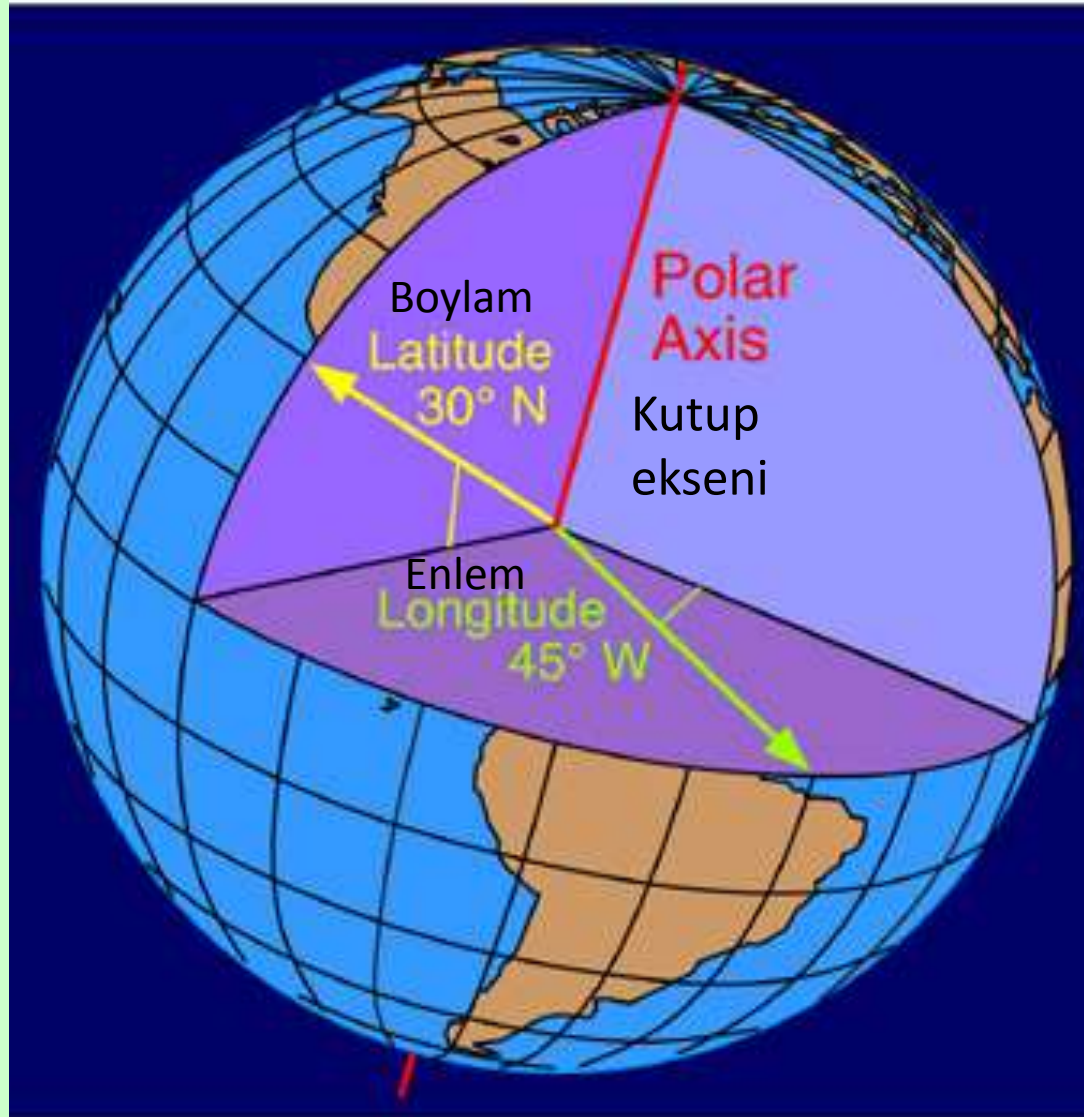
1:100,000 scale



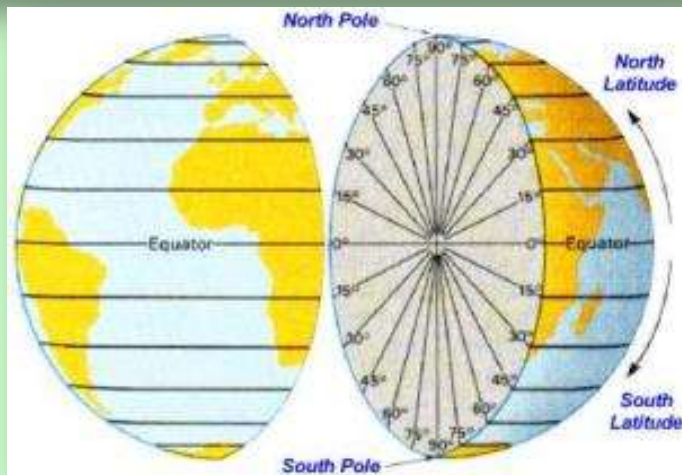
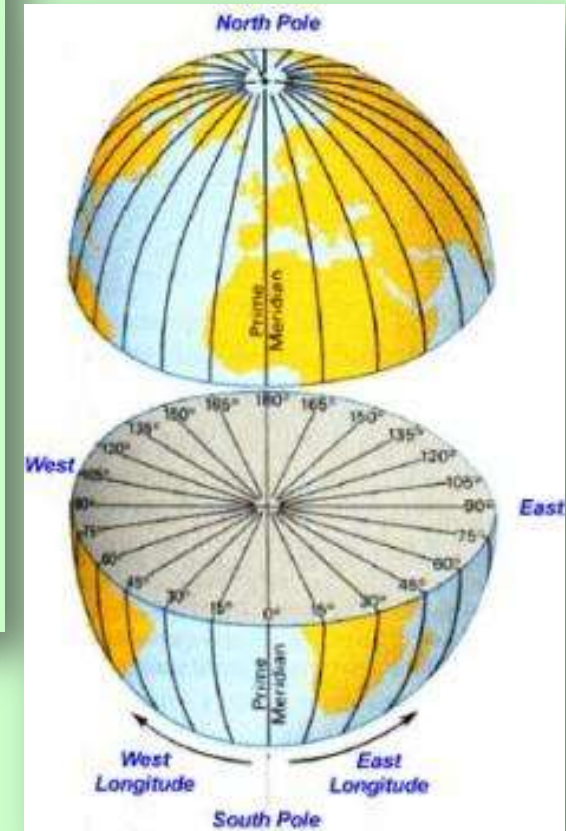
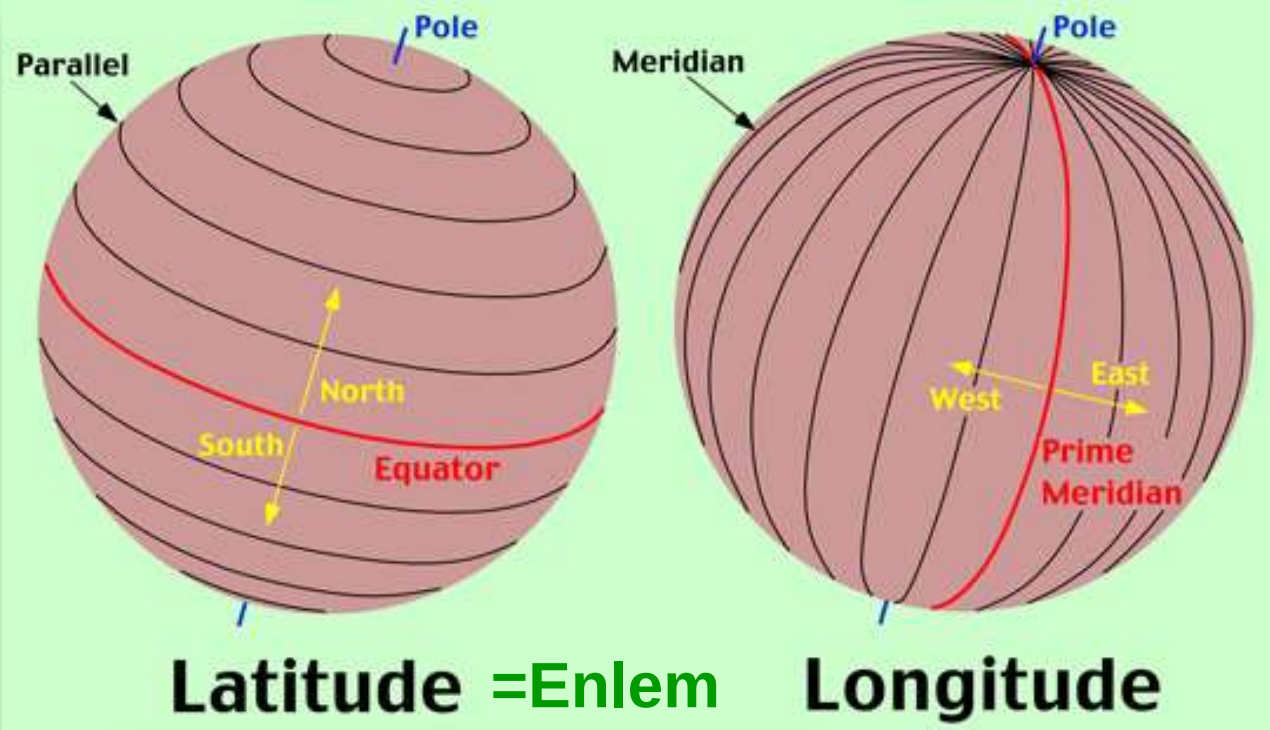
1:125,000 scale



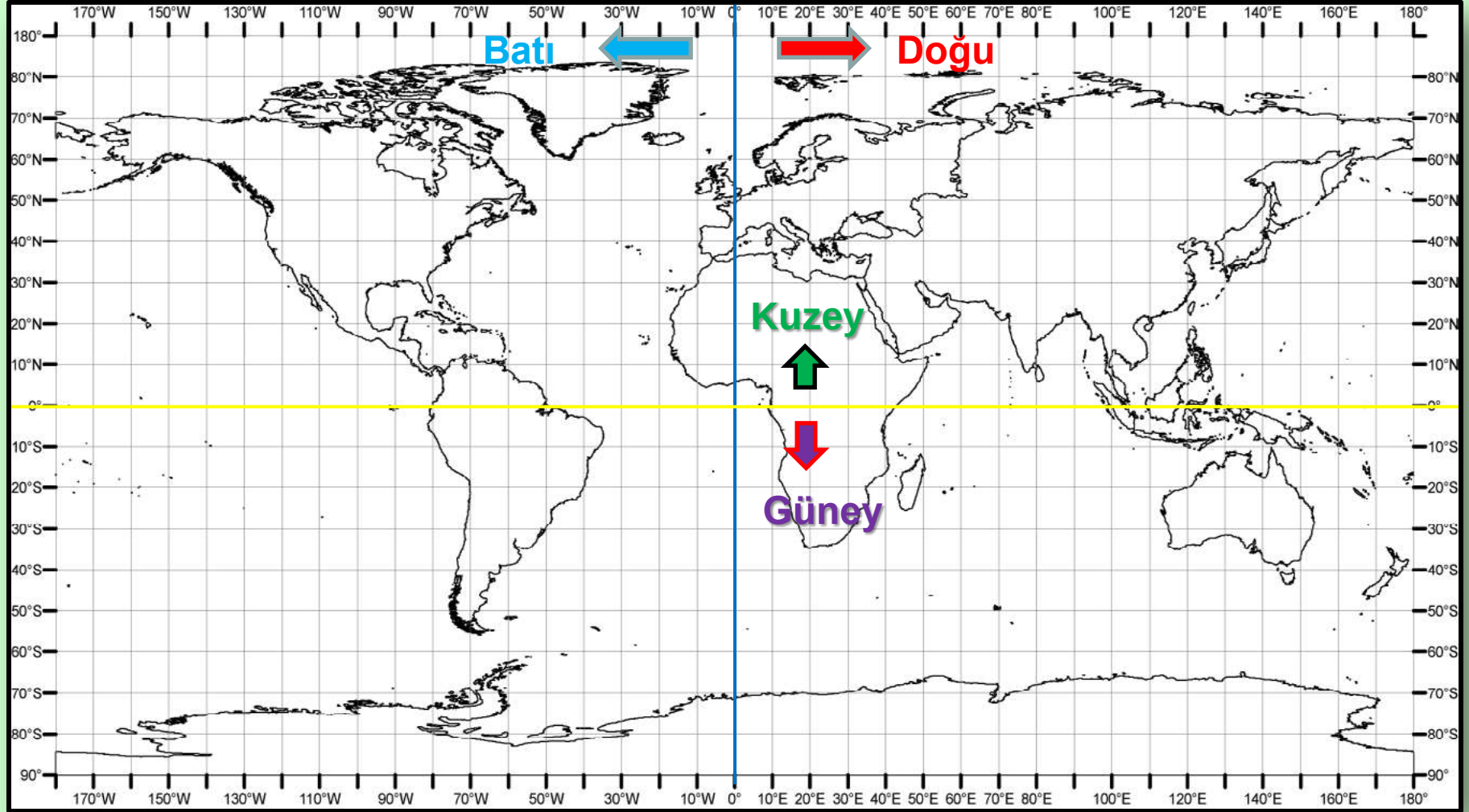
Enlem ve Boyamlar



Enlem ve Boyamlar



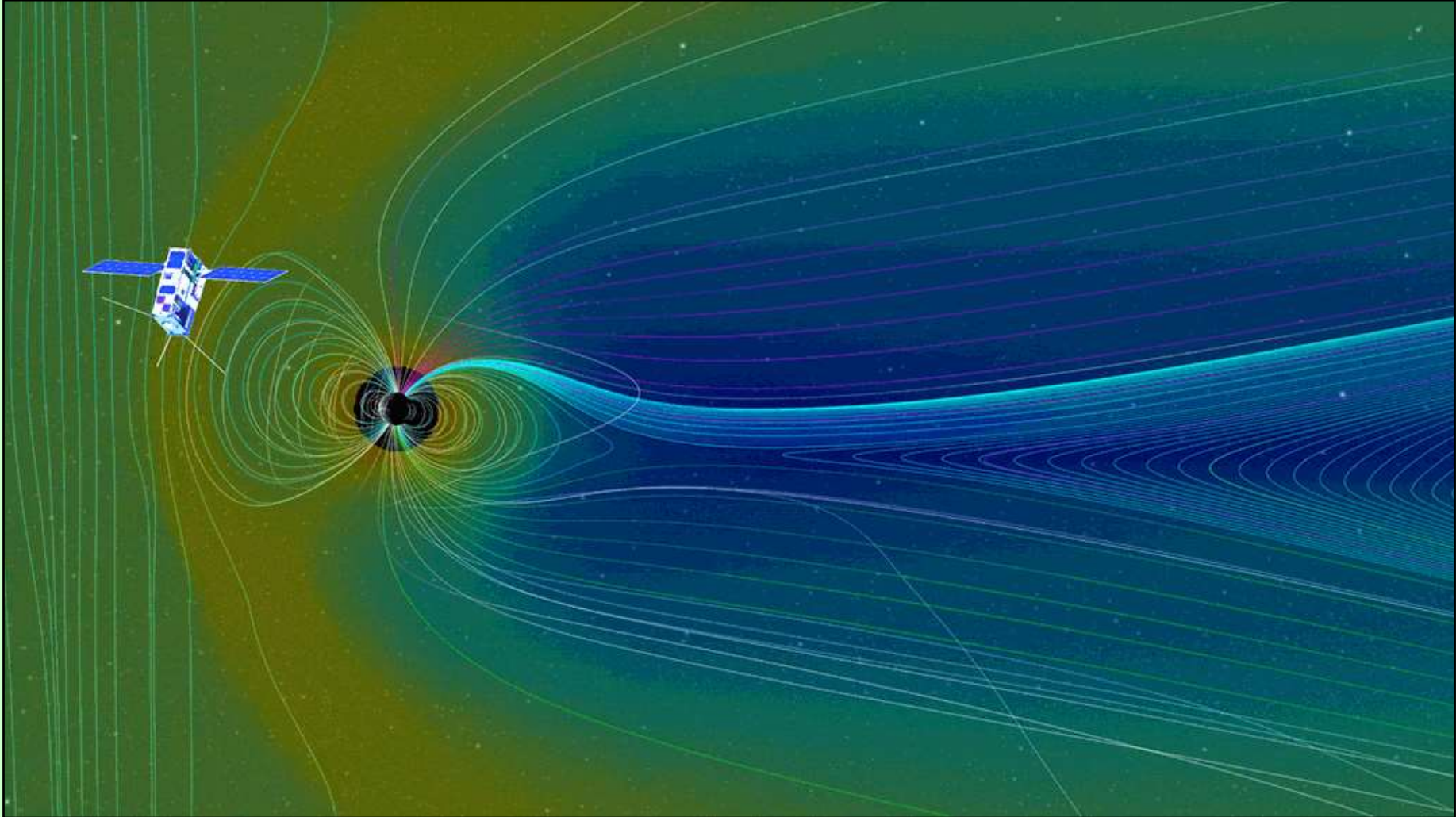
Dünyanın Enlem ve Boyamları



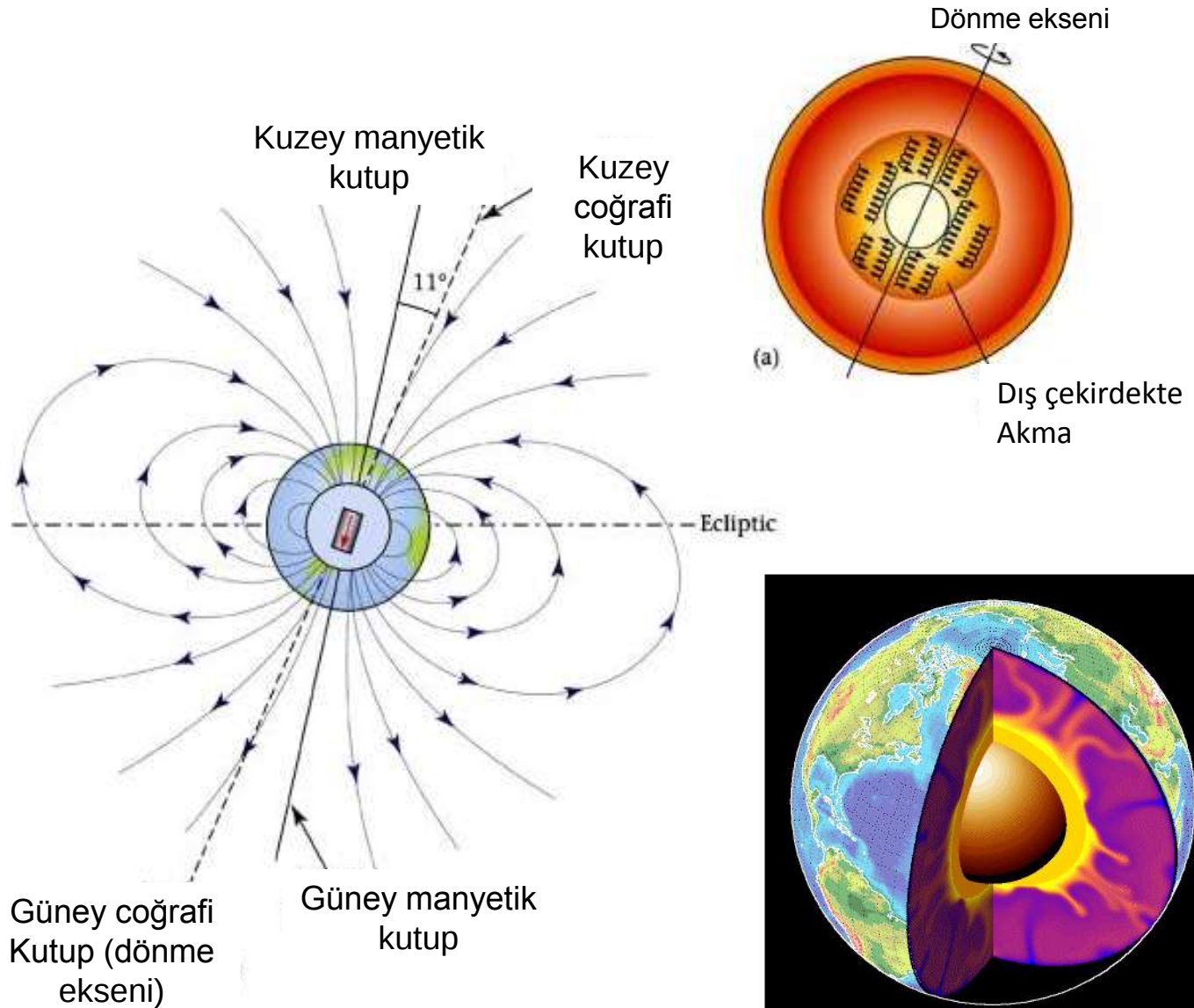
Türkiye'nin Enlem ve Boyamları



Yerin manyetik alanı

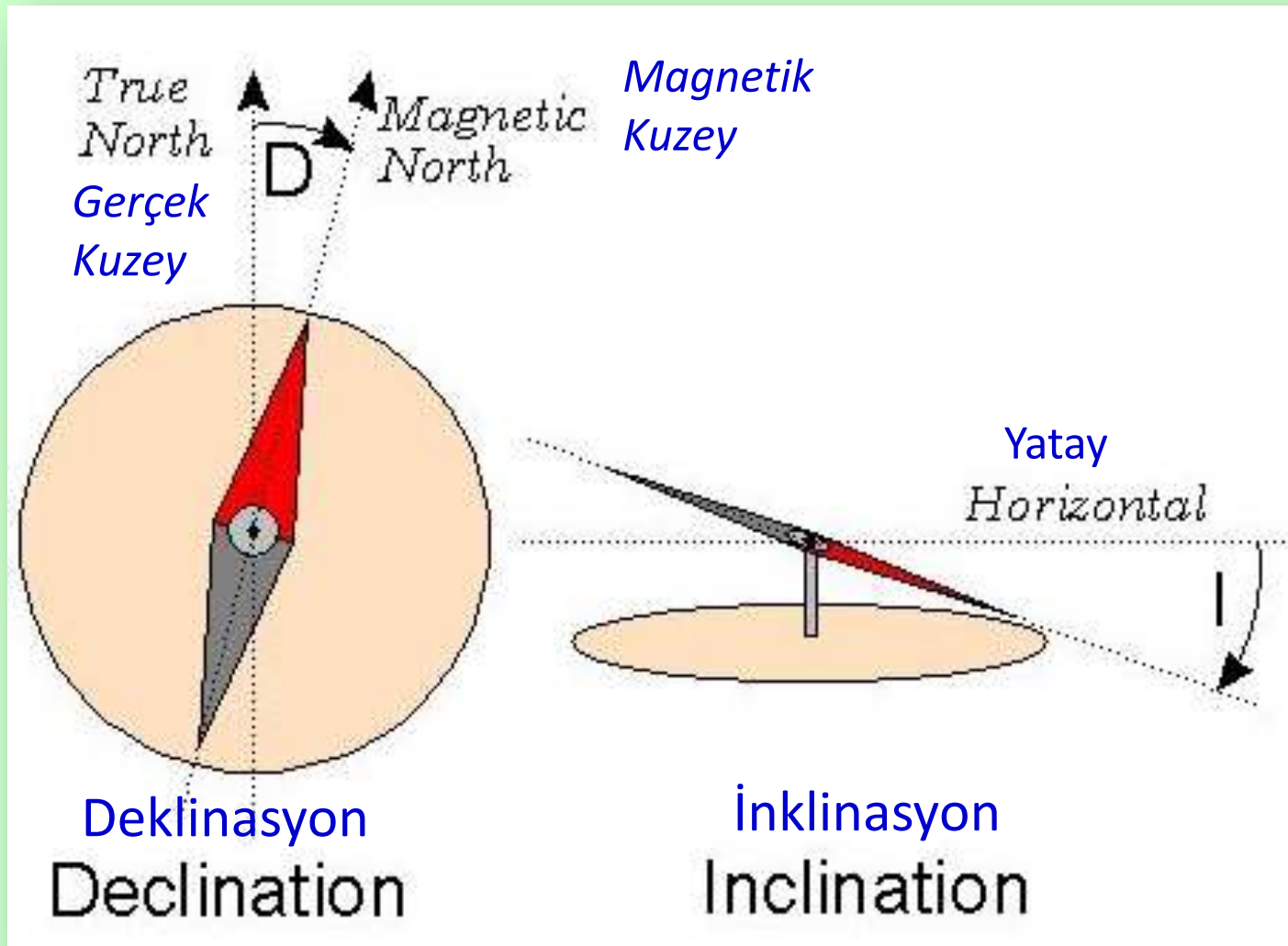


Dipol olarak yerin manyetik alanı



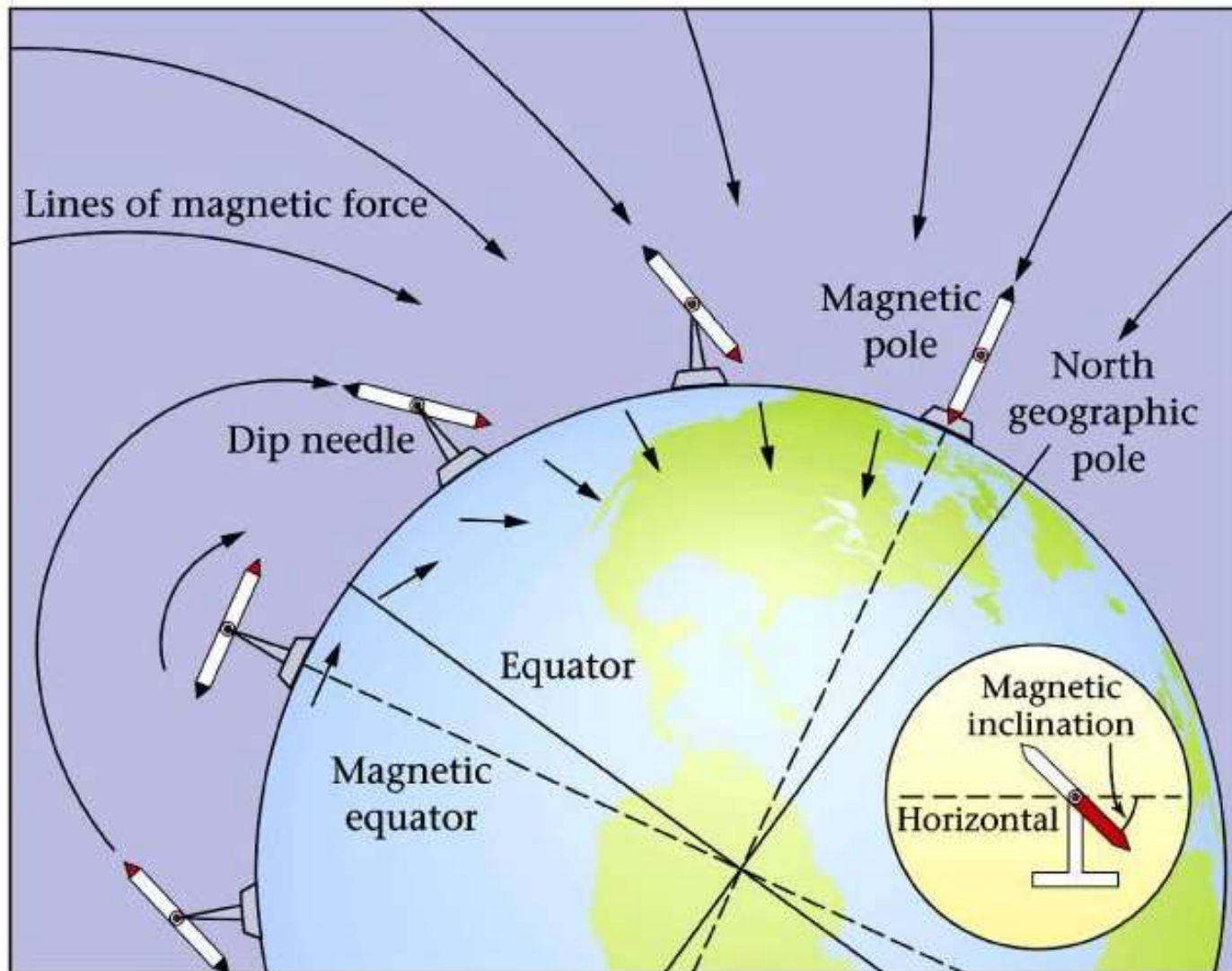


Manyetik Sapma (*declination*)

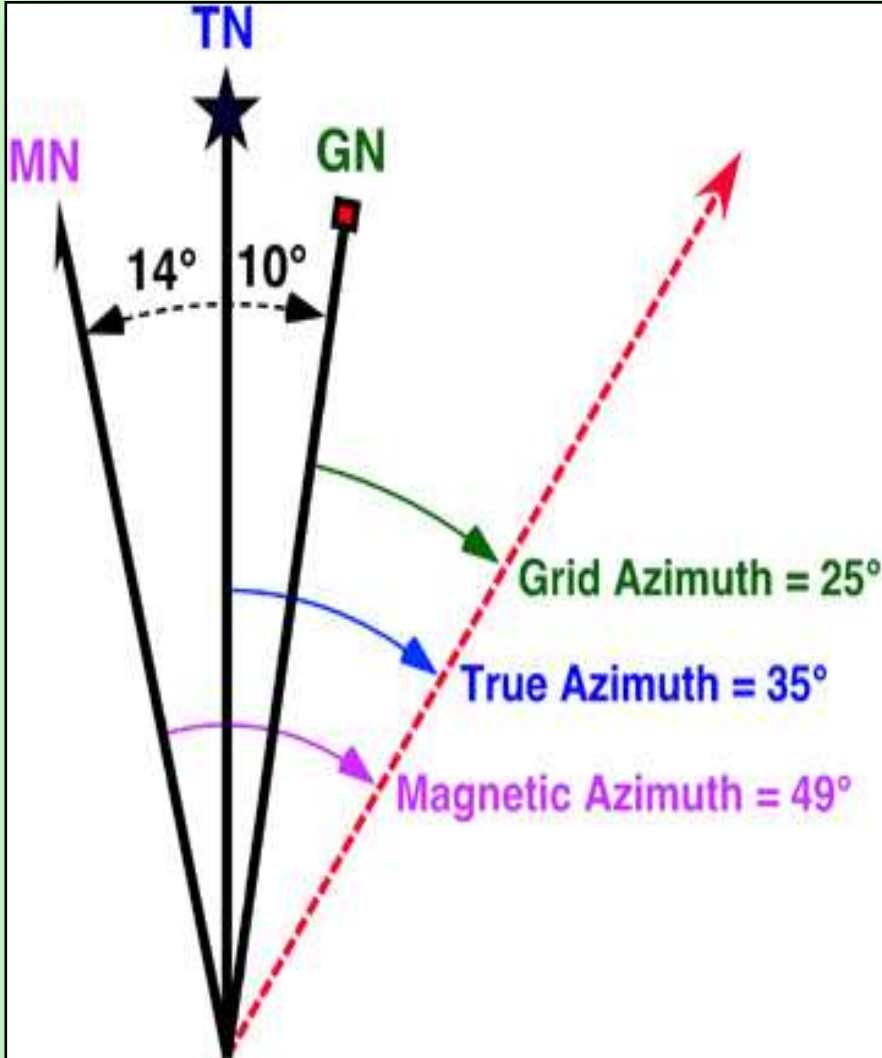




Manyetik İnklinasyon (*Inclination*)



Grid, manyetik ve gerç k kuzey



Ger ek (co rafi) kuzey ile manyetik kuzey arasında a ısal farklılık vardır. Ger ek kuzey boylamlara paraleldir.

Grid kuzey a ısı, alanların k resel konumdan d zlemsel harita konuma izd   m  sırasında meydana gelen de i iklik miktarını ifade eder.



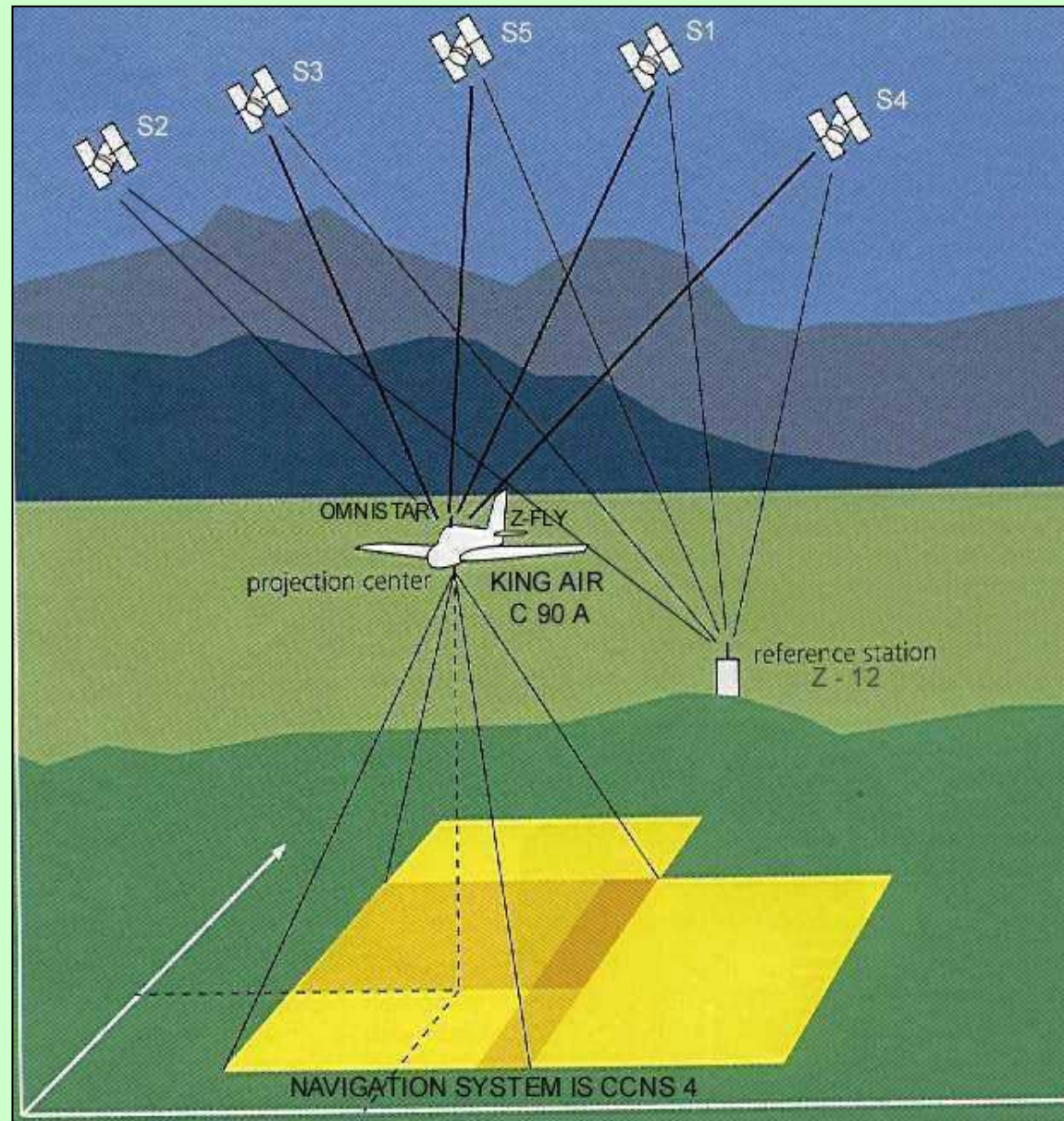
Pusula ve harita



Pusula ve Arazi



Hava Fotoğrafları



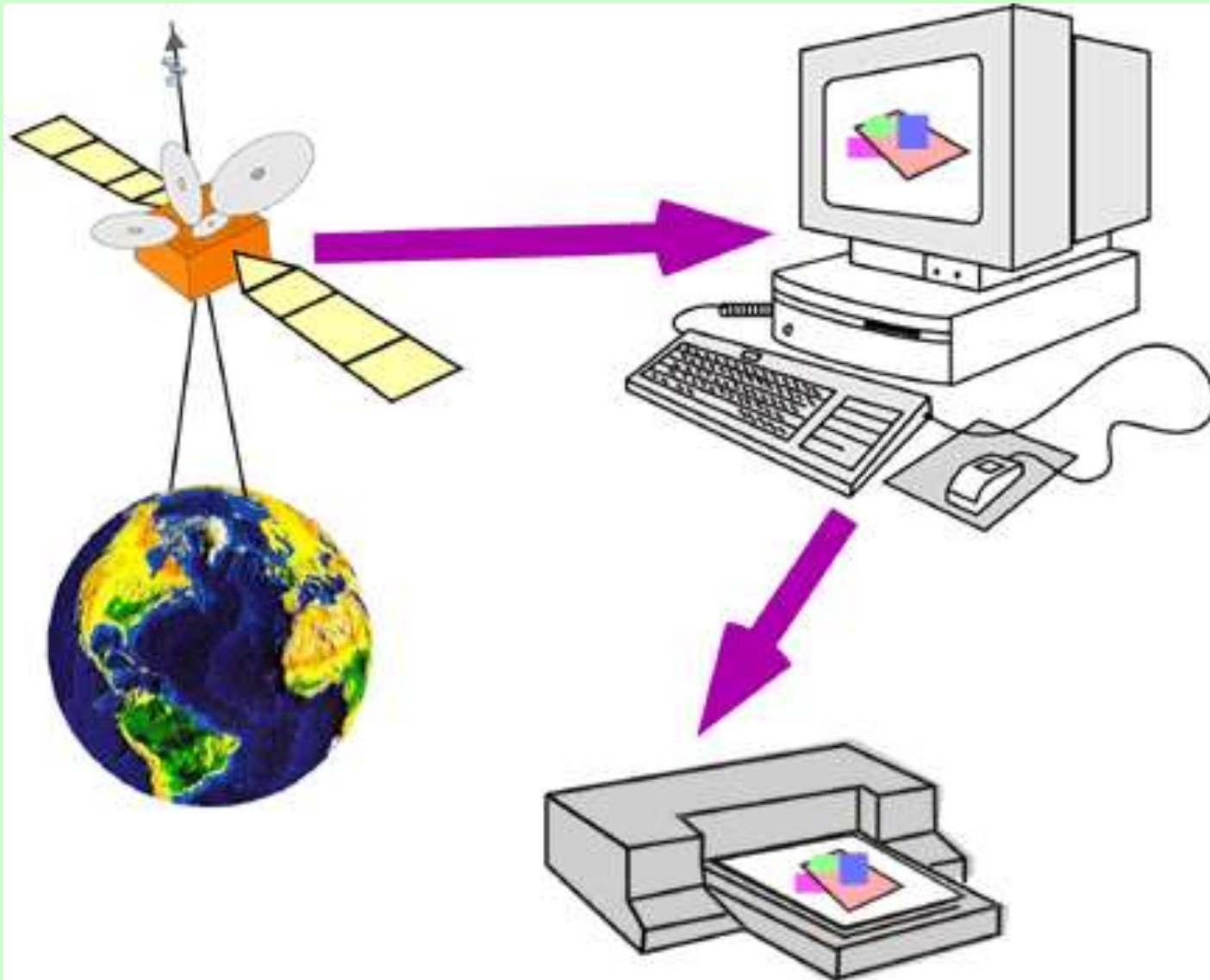
Hava Fotoğrafları ve 3D Görünüş



Uydu Fotoğrafları



Coğrafi Bilgi Sistemi



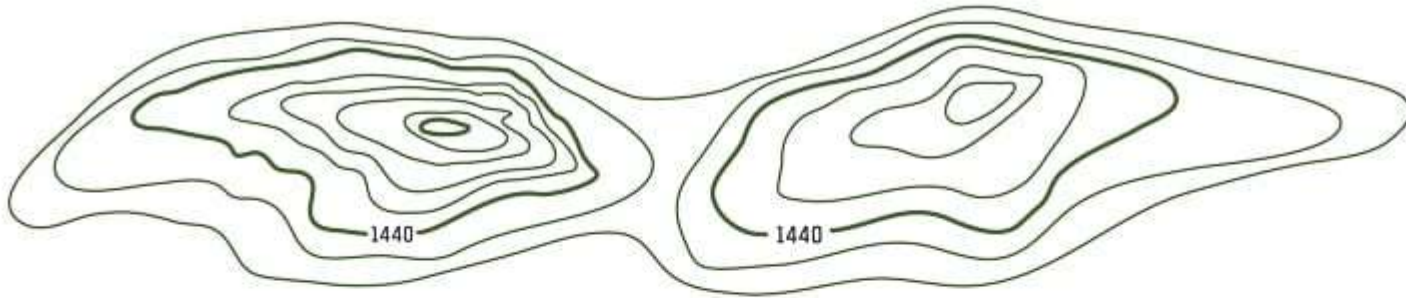
3D Fiziki (Topografya) harita



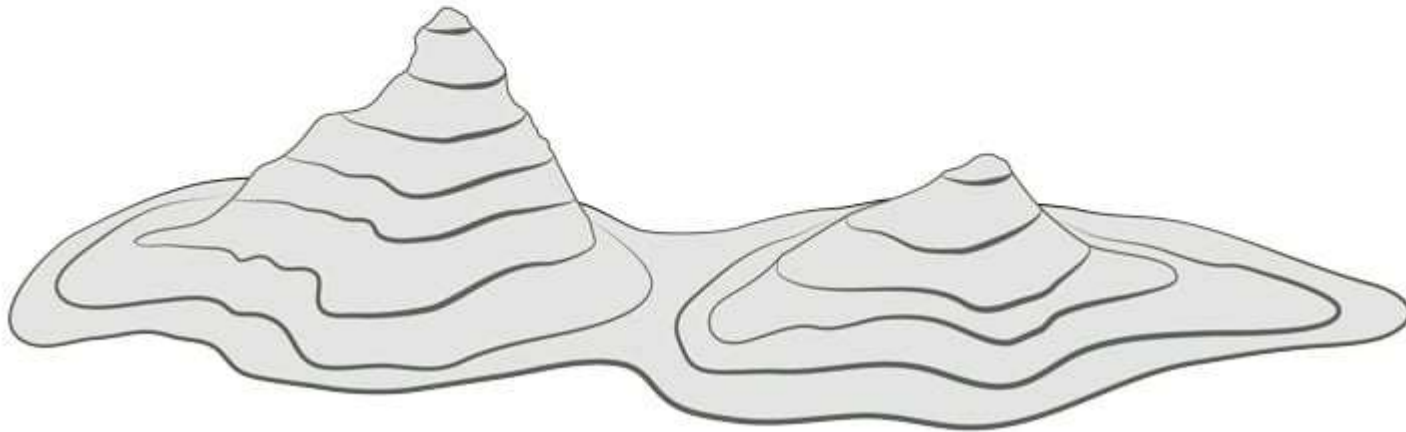


Kontur (izohips / eşyüksehti çizgileri)

Kontur çizgileri ile topografik özellikler arasındaki ilişki



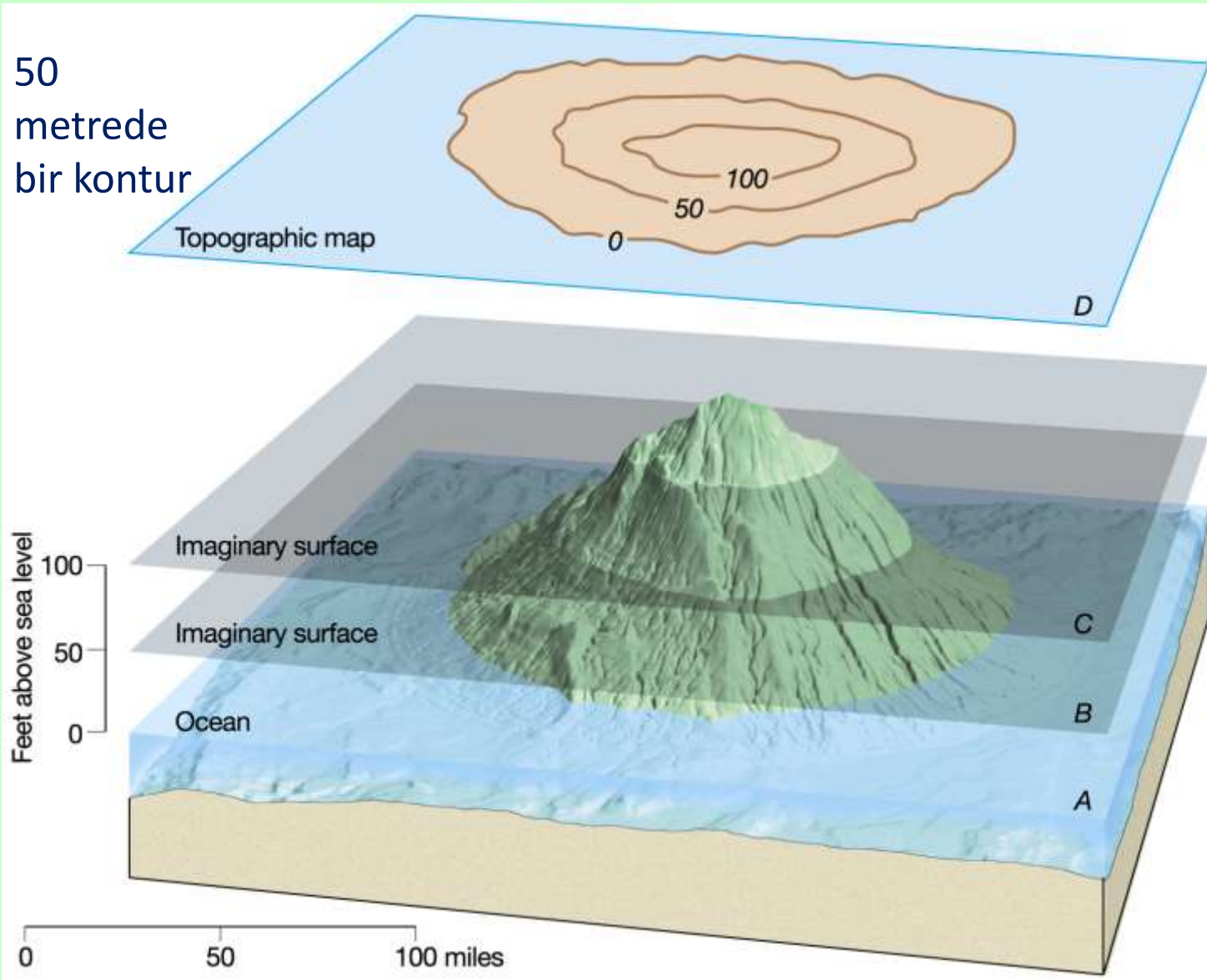
Haritada
Topografya
Görünüşü



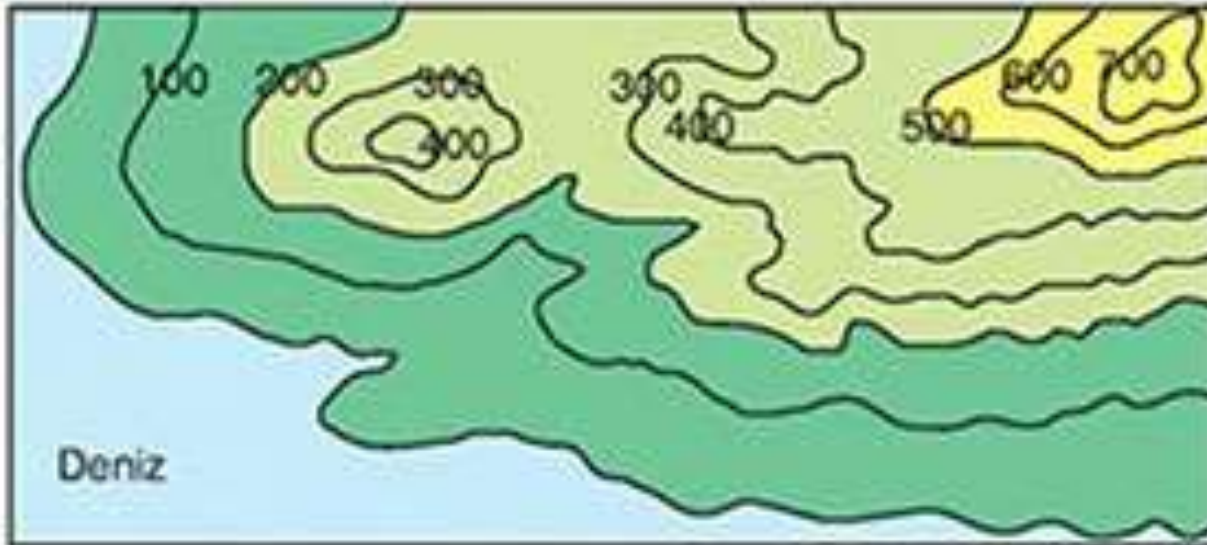
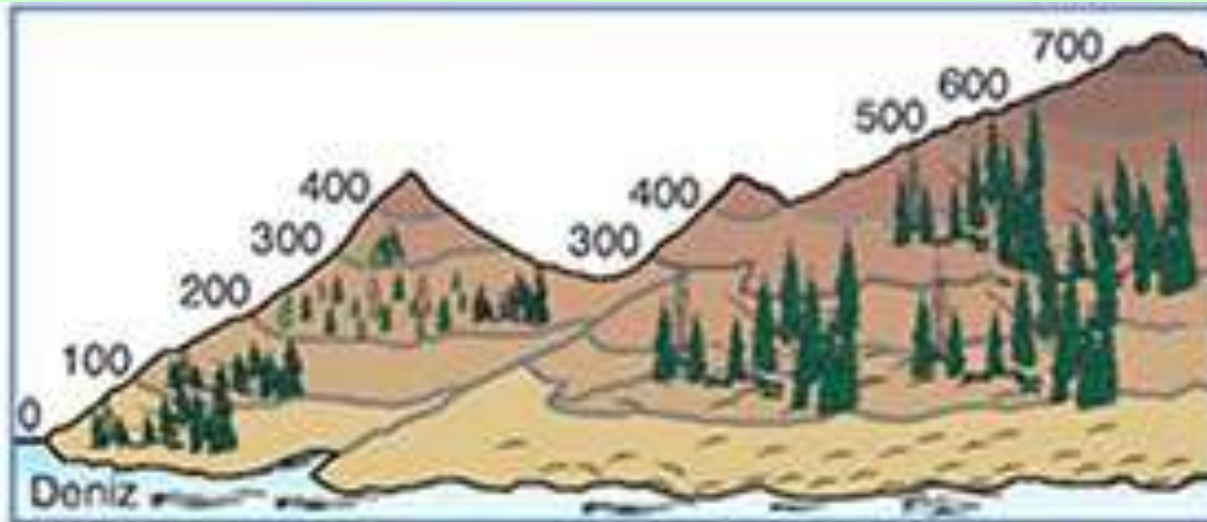
Topografyanın 3D
Görünüşü

Topografya ve Eş Yükselti Eğrileri

50
metrede
bir kontur



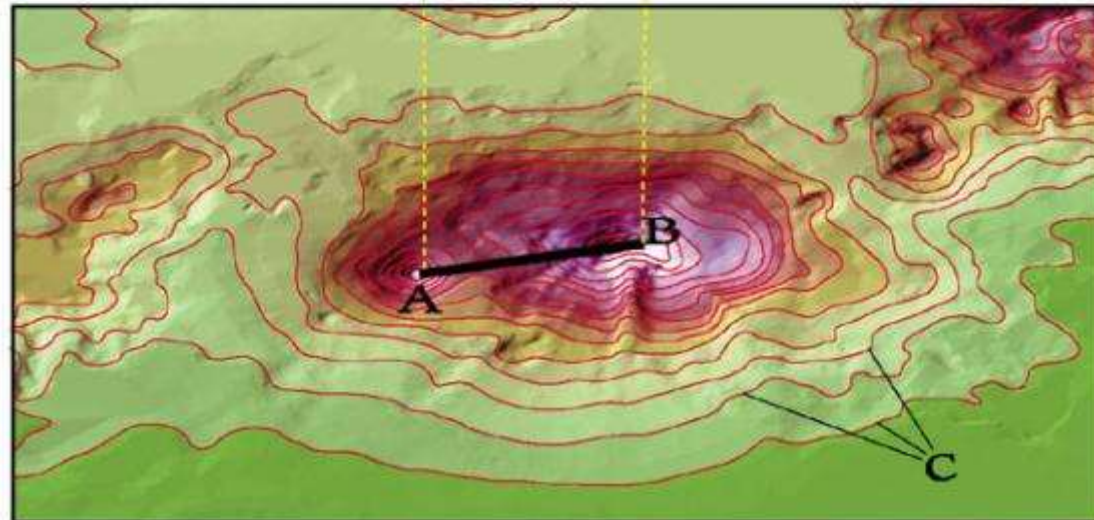
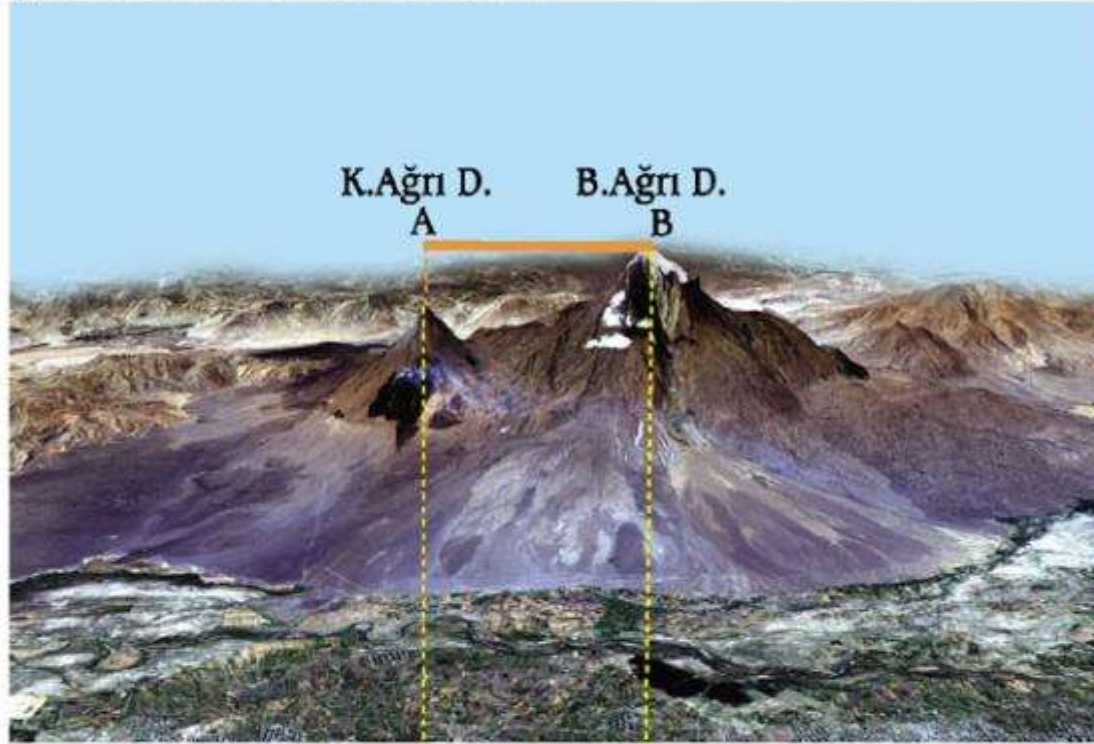
Topografya ve Eş Yükselti Eğrileri



Topografya ve Eş Yükselti Eğrileri



Şekil 3: 3 BOYUTLU GÖRÜNÜM



Şekil 4: 2 BOYUTLU GÖRÜNÜM



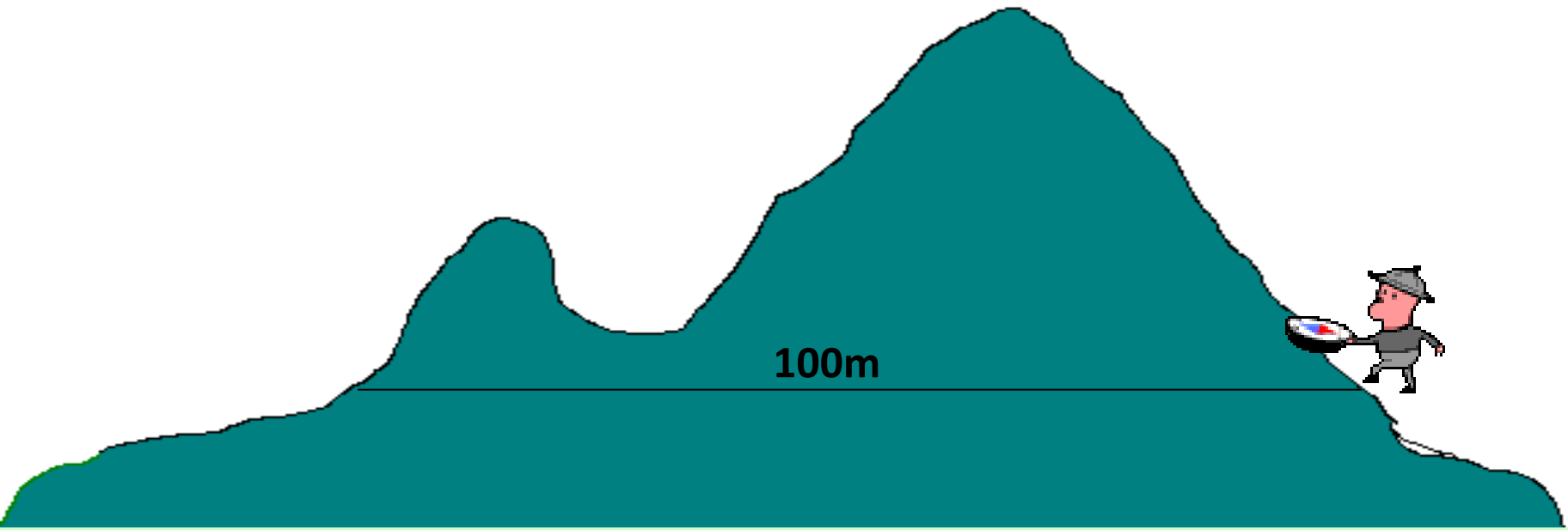
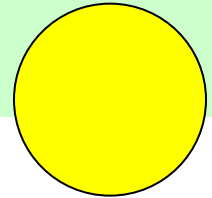


Şimdi tepeye doğru yürüyalim!



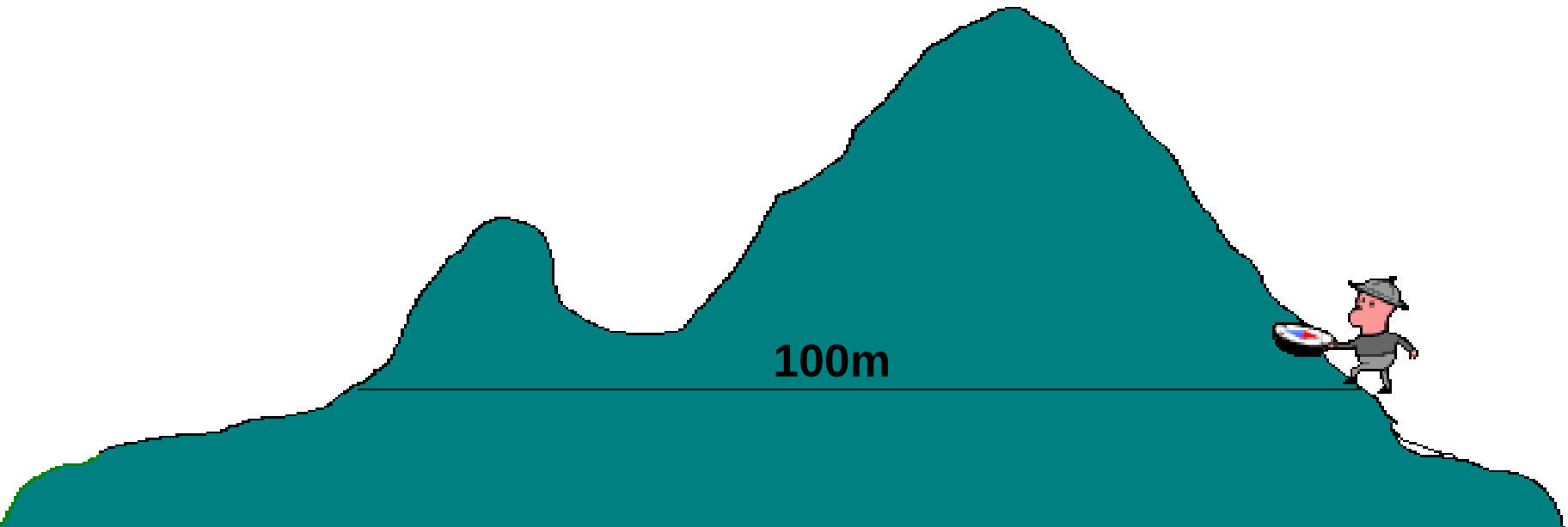
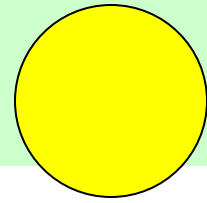


Şimdi 100 metre yükseltisindeyiz



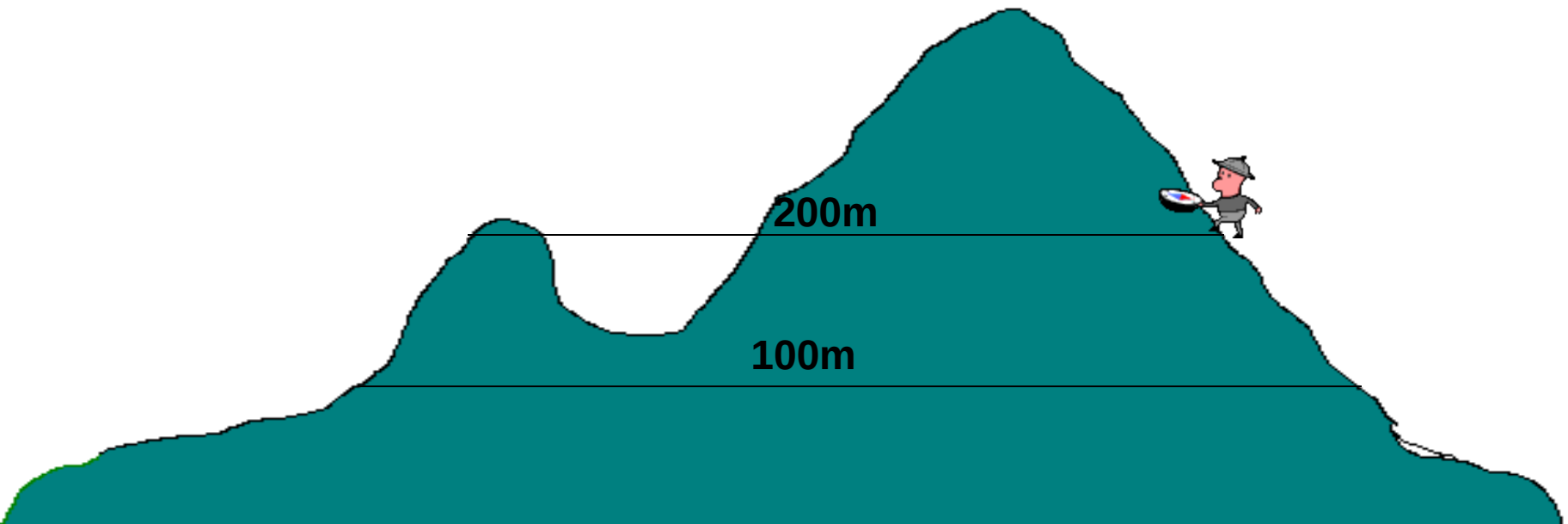
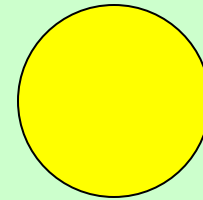


Yürümeye devam edelim!



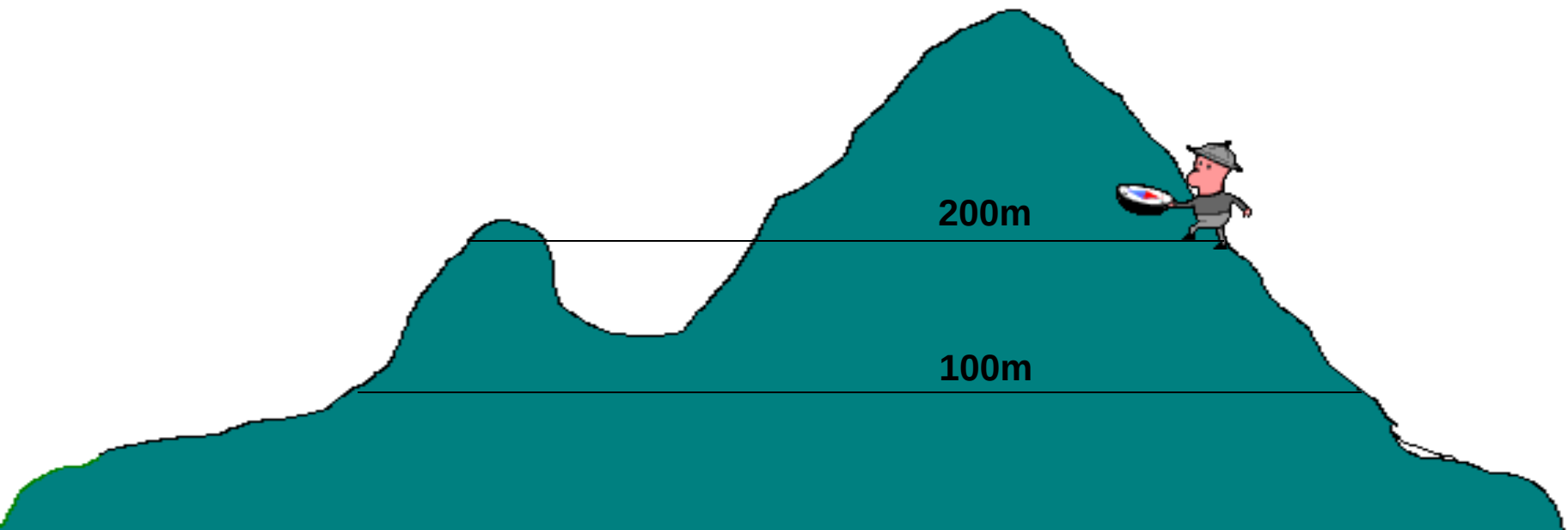
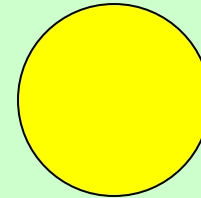


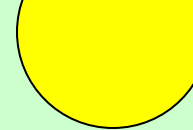
Şimdi de 200 m.



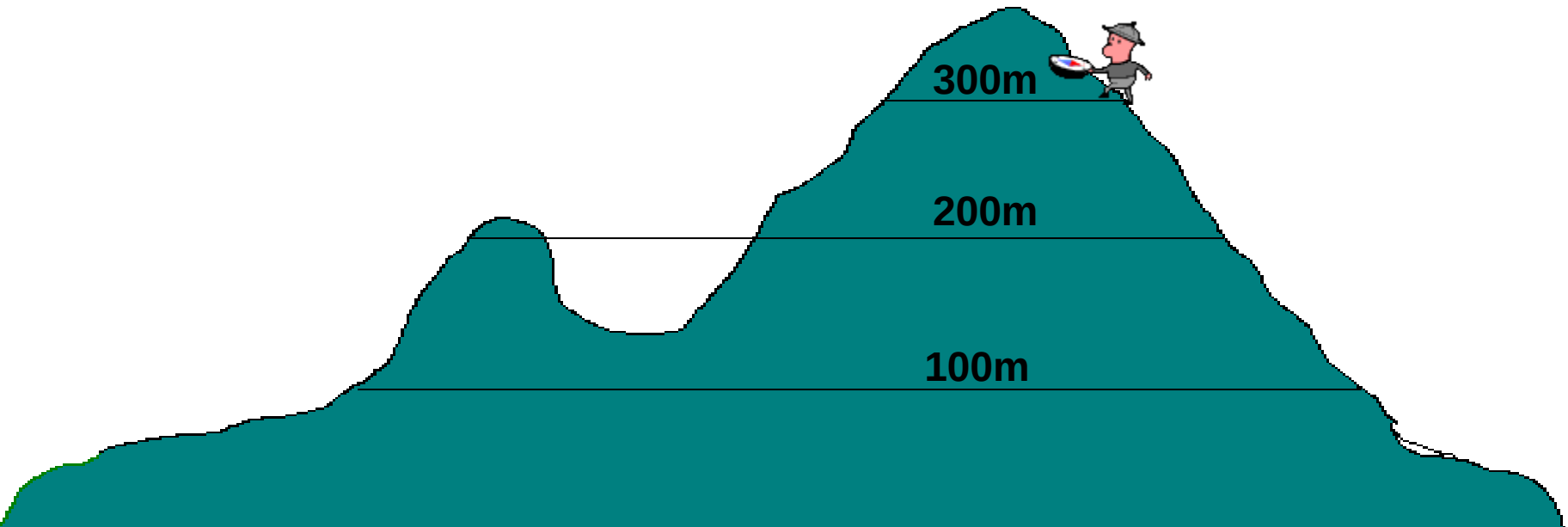


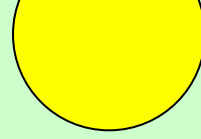
Yürümeye devam edelim



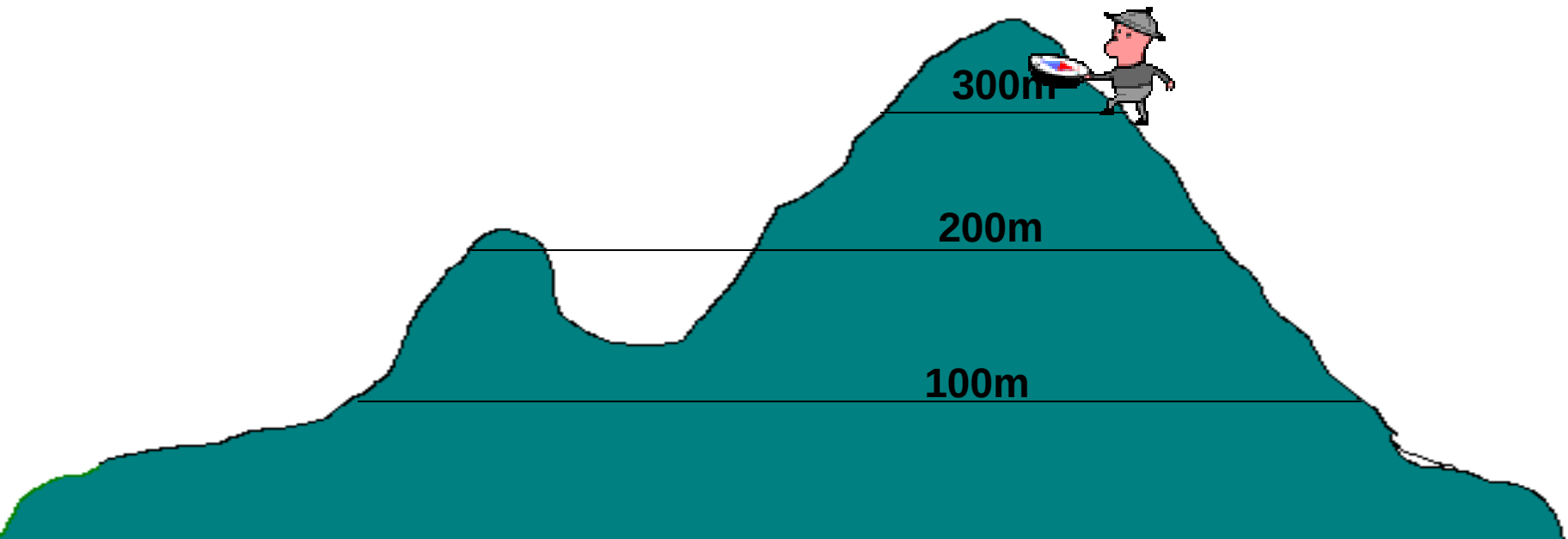


Şimdi de 300 metredeyiz!



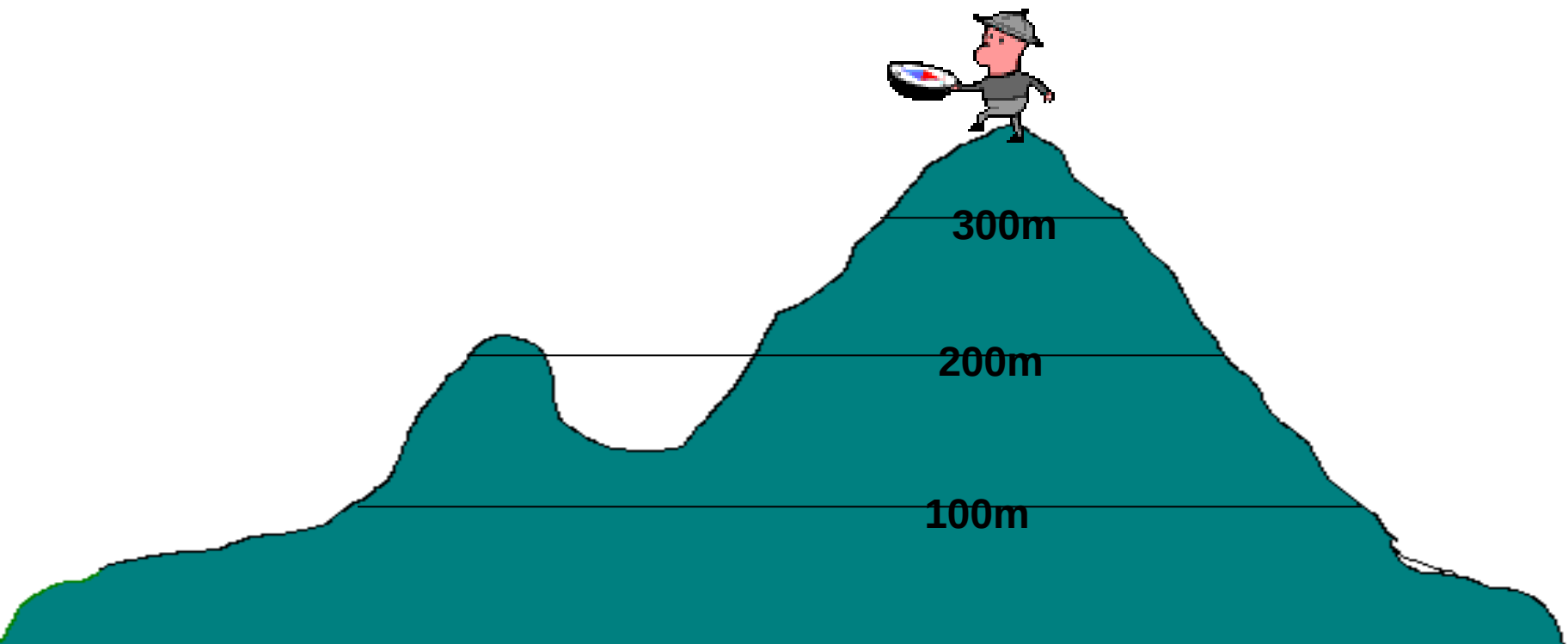


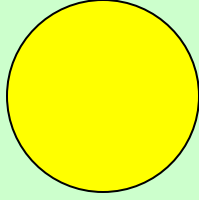
Zirvedeyiz!



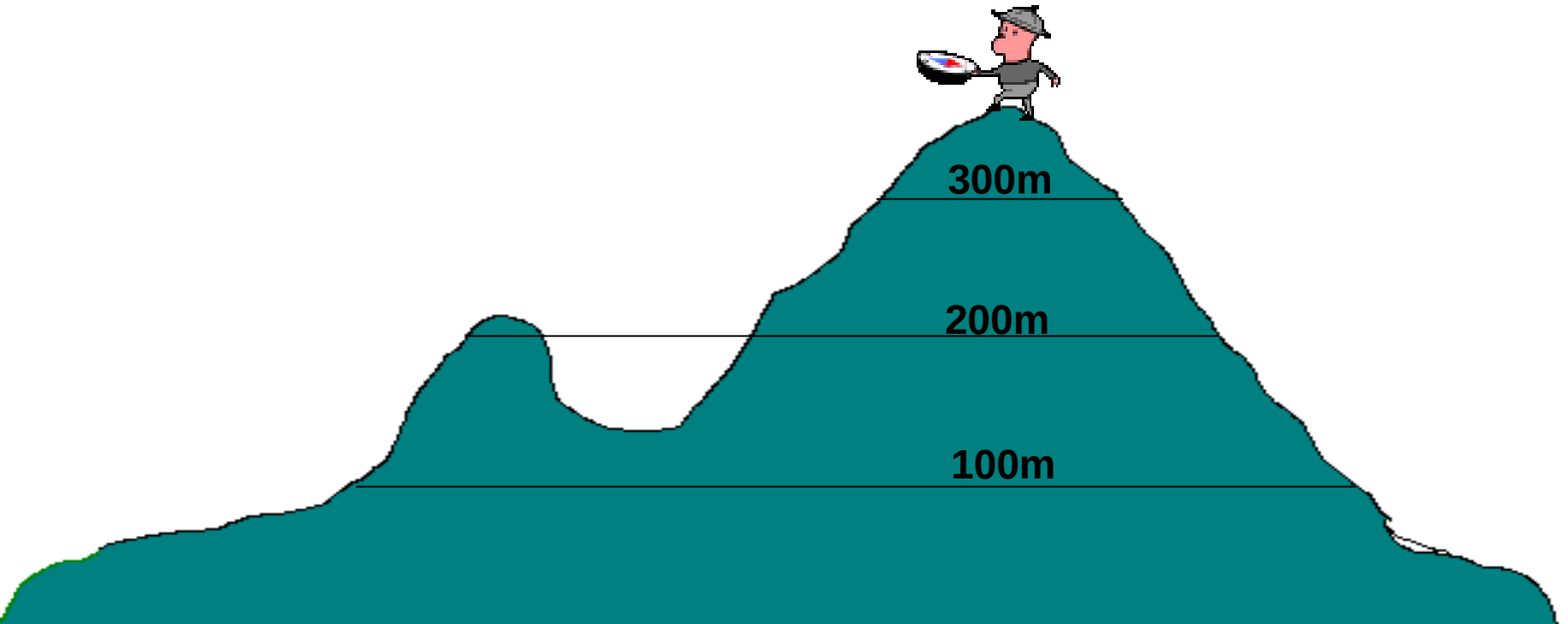


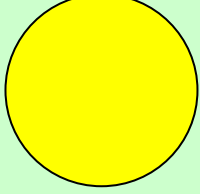
Zirvedeyiz ama hangi yükseklikteyiz ?



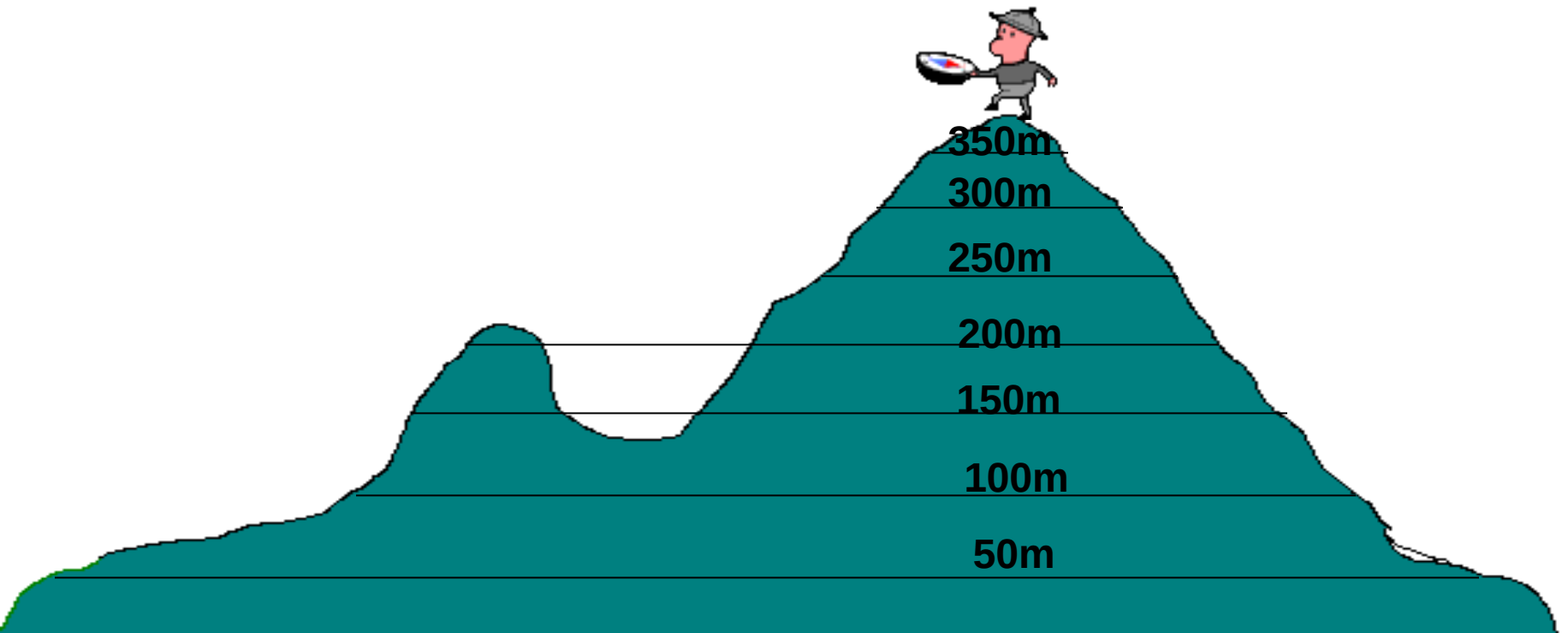


Eğer her 50 metrede bir kontur çizersek bu bize hangi yükseltide olduğumuzu bulmamıza yardım

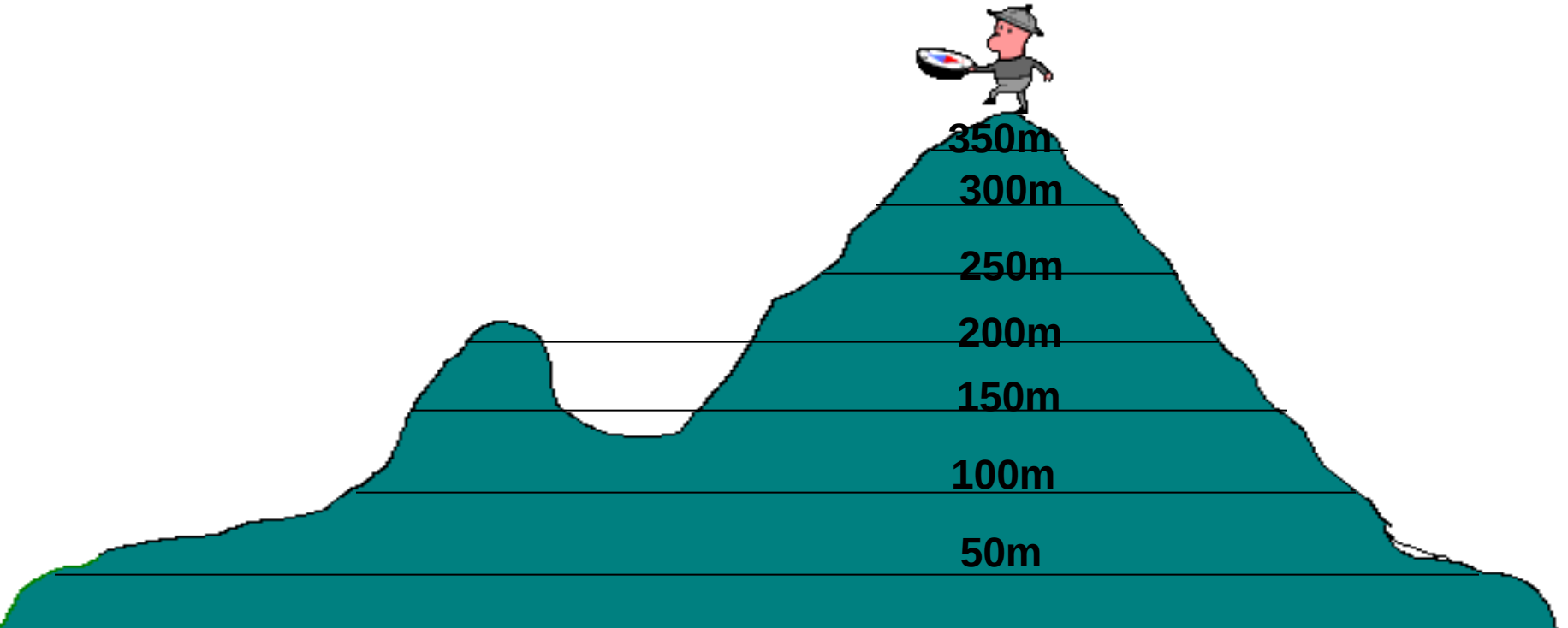
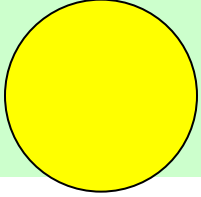




350 metrenin üzerinde, fakat 400 metrenin biraz
aşağısındayız



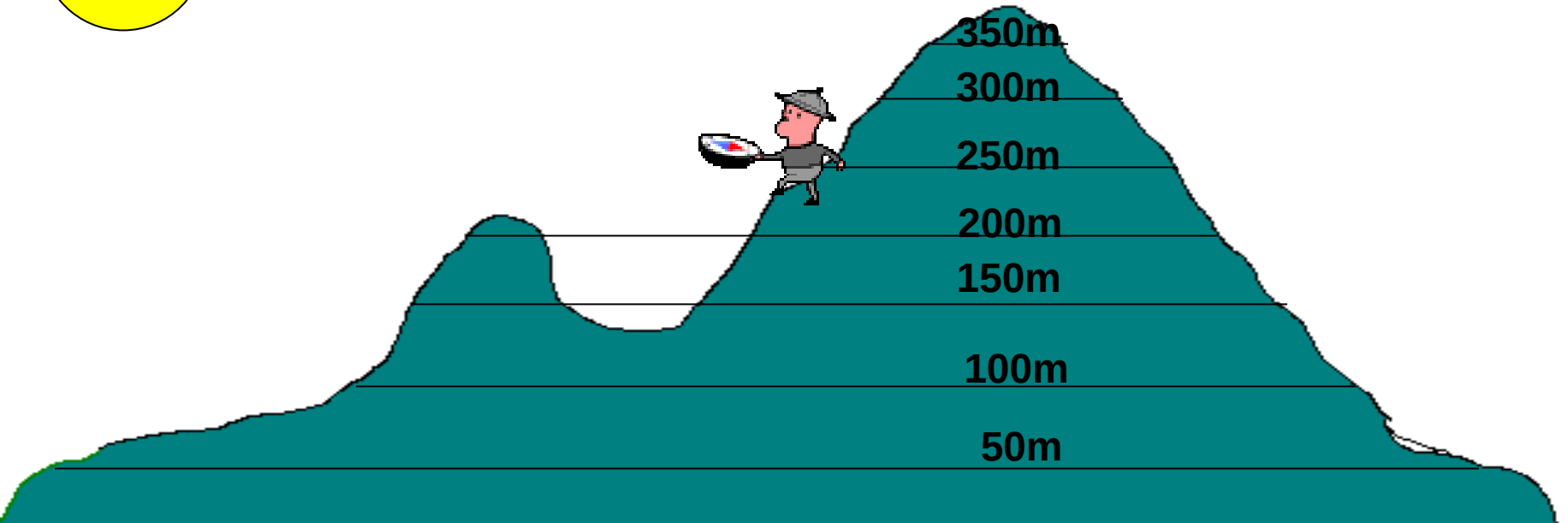
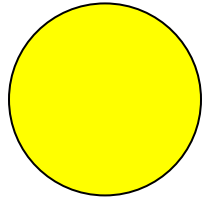
Şimdi geç kalmadan aşağıya inelim !





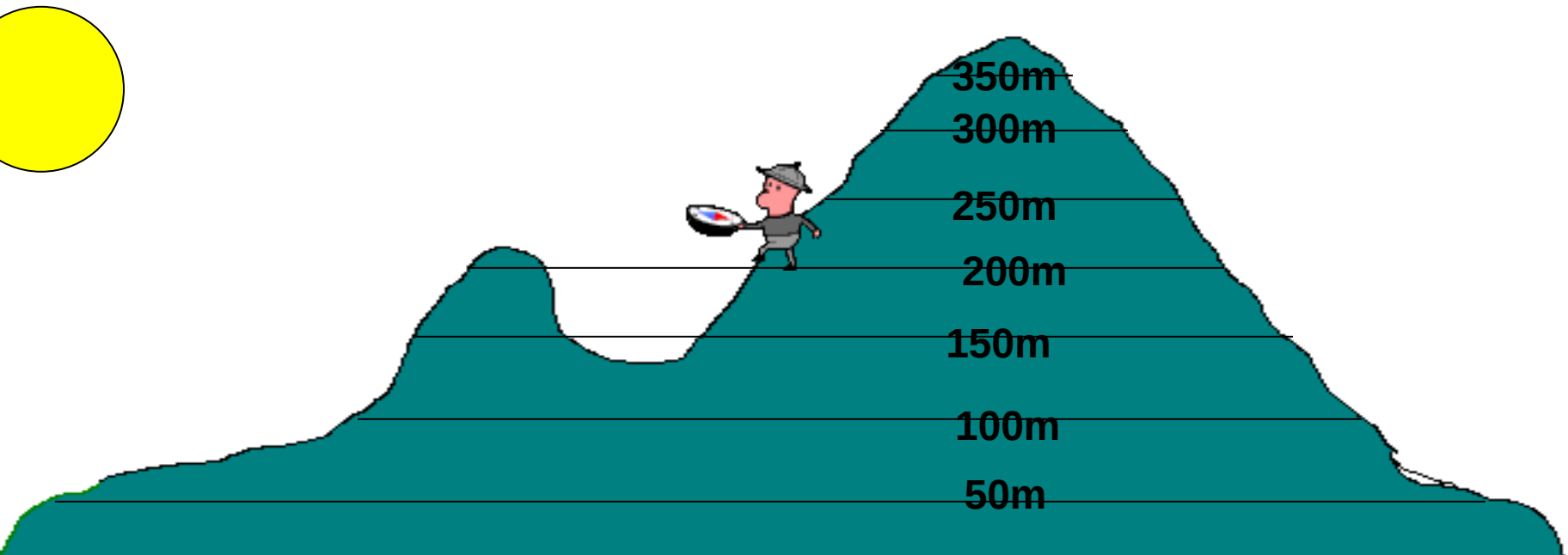
Şimdi yükseltimiz nedir?

Eğer 250 ile 200 metre arasındayız, diyorsanız bu doğrudur.





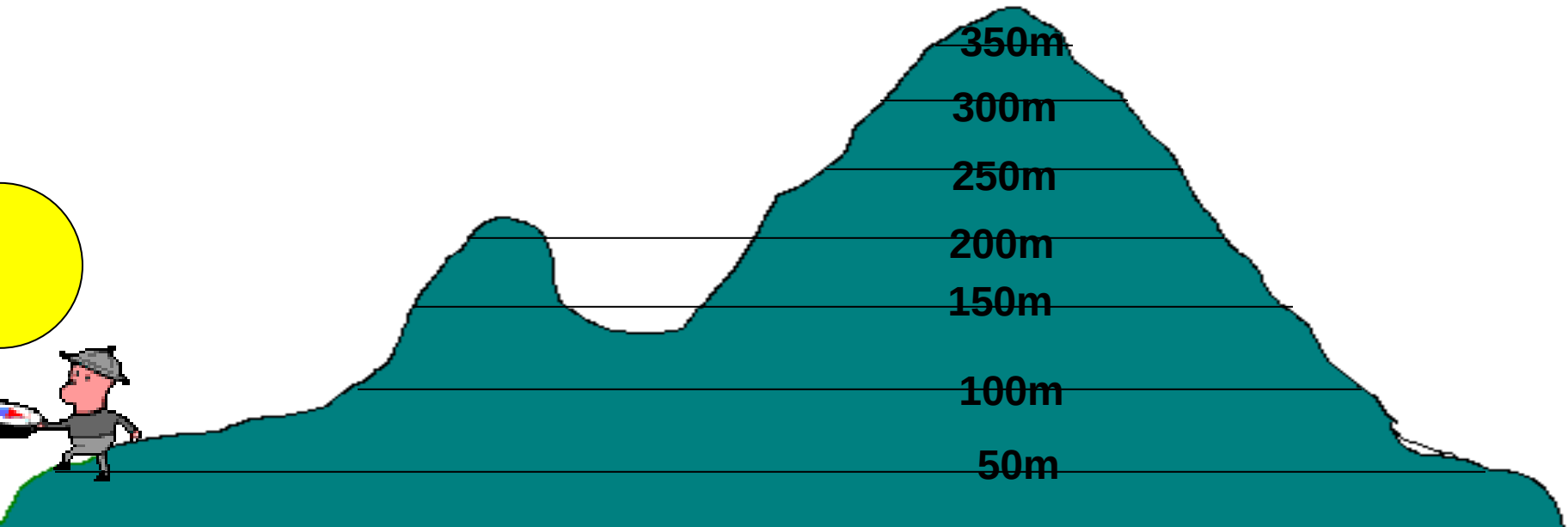
Hadi tekrar edelim!





Şimdi yükseklik nedir?

Eğer 50 metre ya da altında diyorsanız doğrudur!

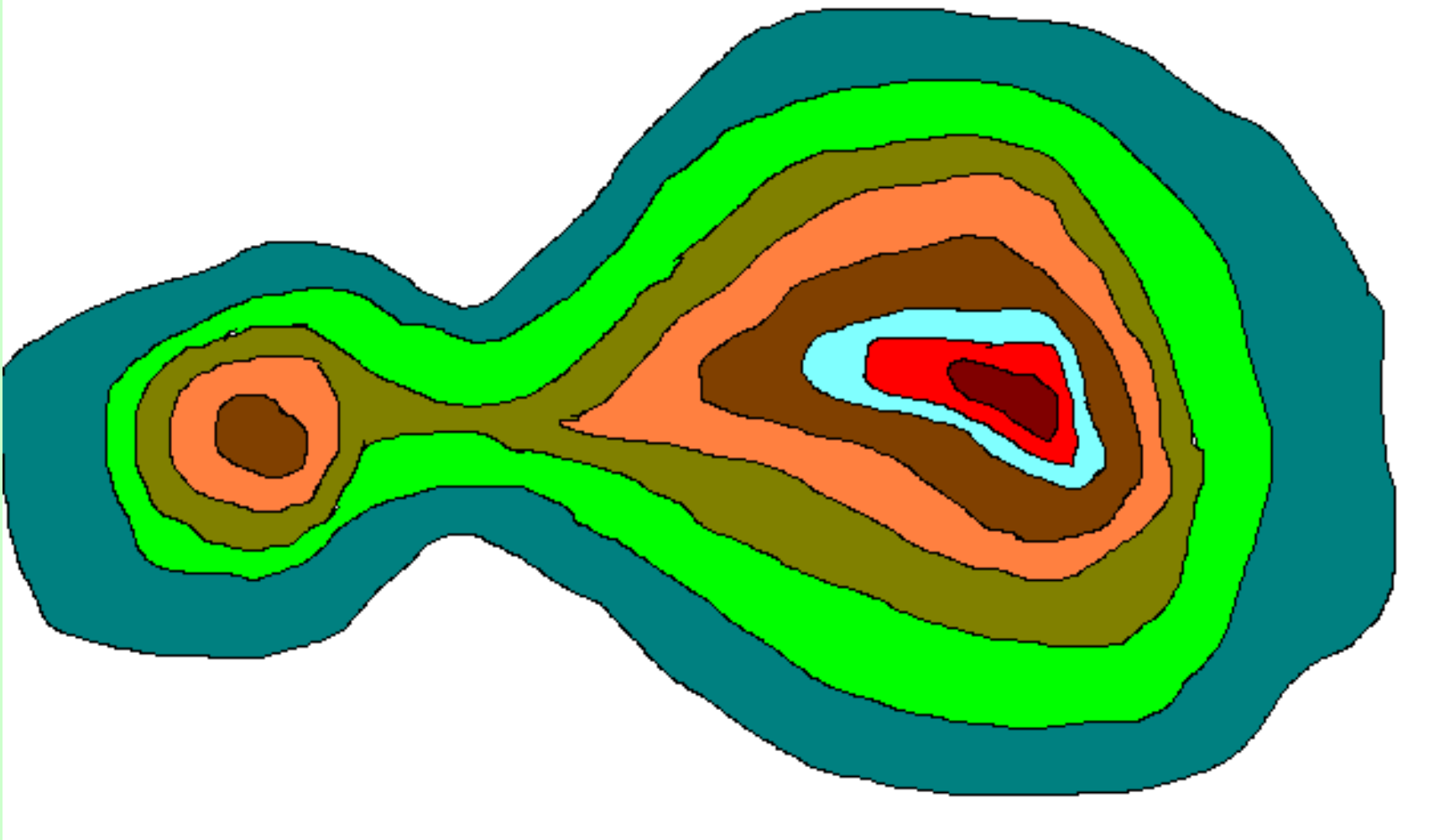




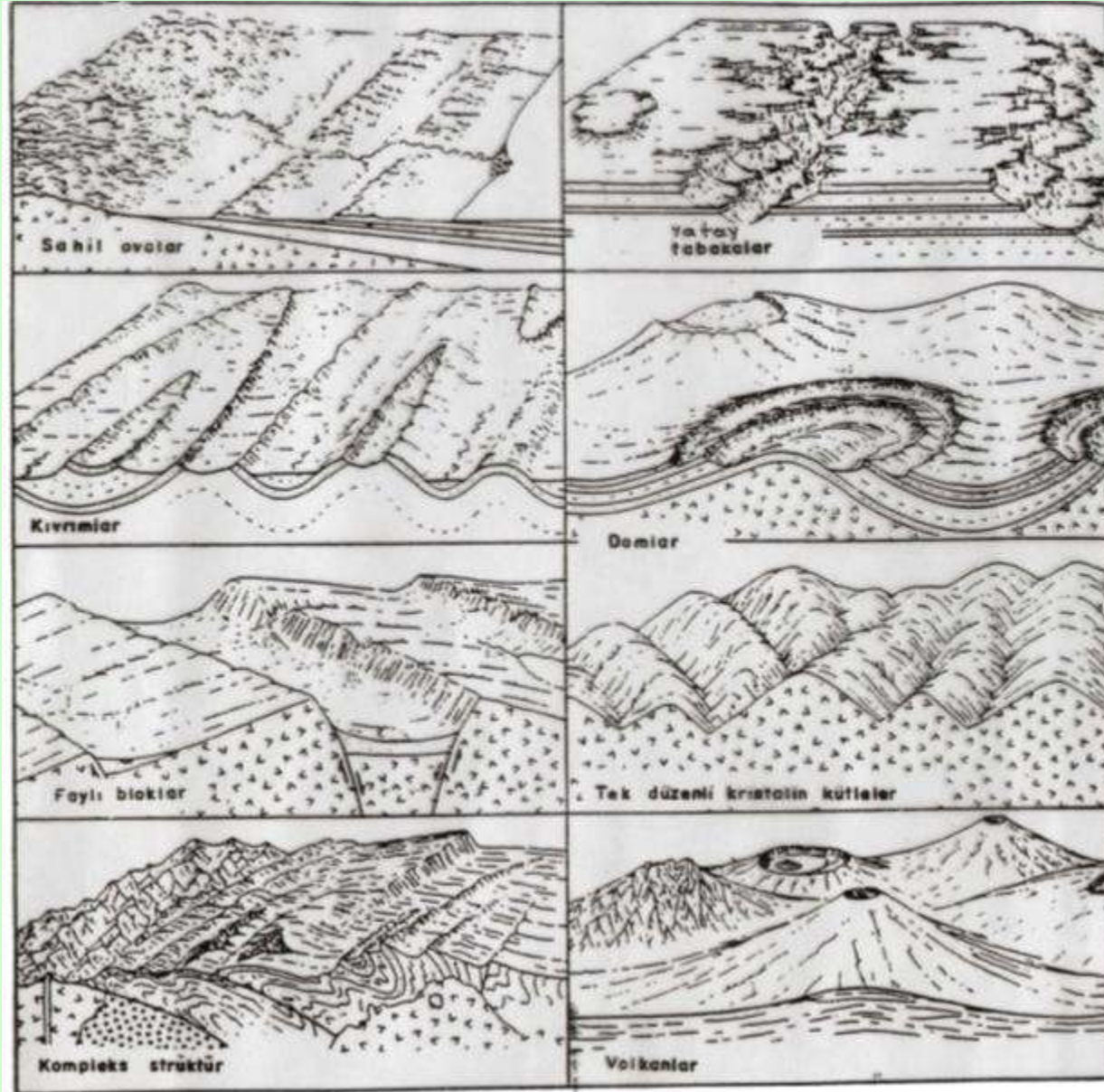
Şimdi aynı tepeye bakalım,
fakat uçaktan görelim!

Eş yükselti eğrileri (İzohips)

Her renk 50 metrelik değişimleri temsil eder



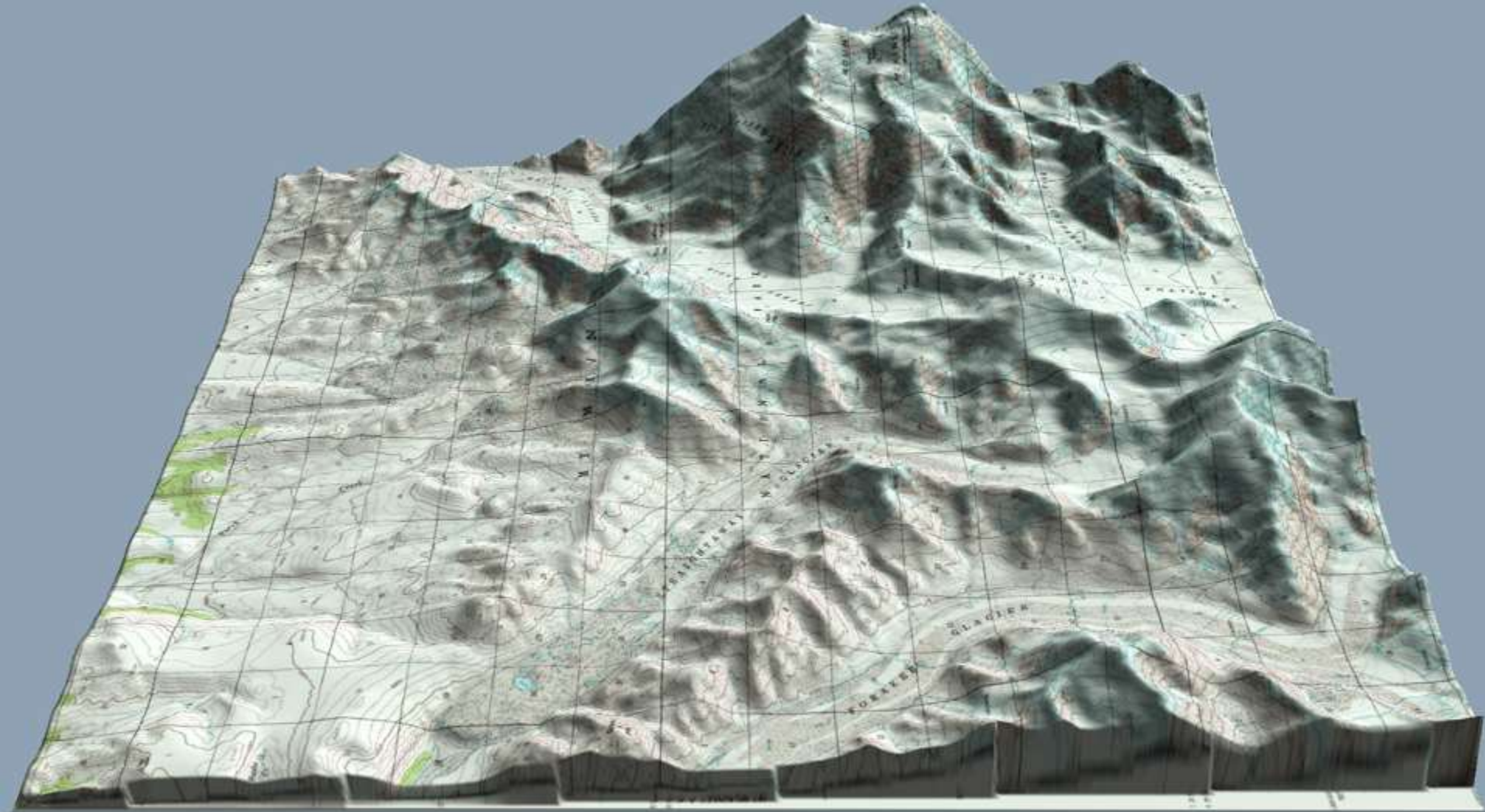
Topografya ve Yeraltı Yapısı



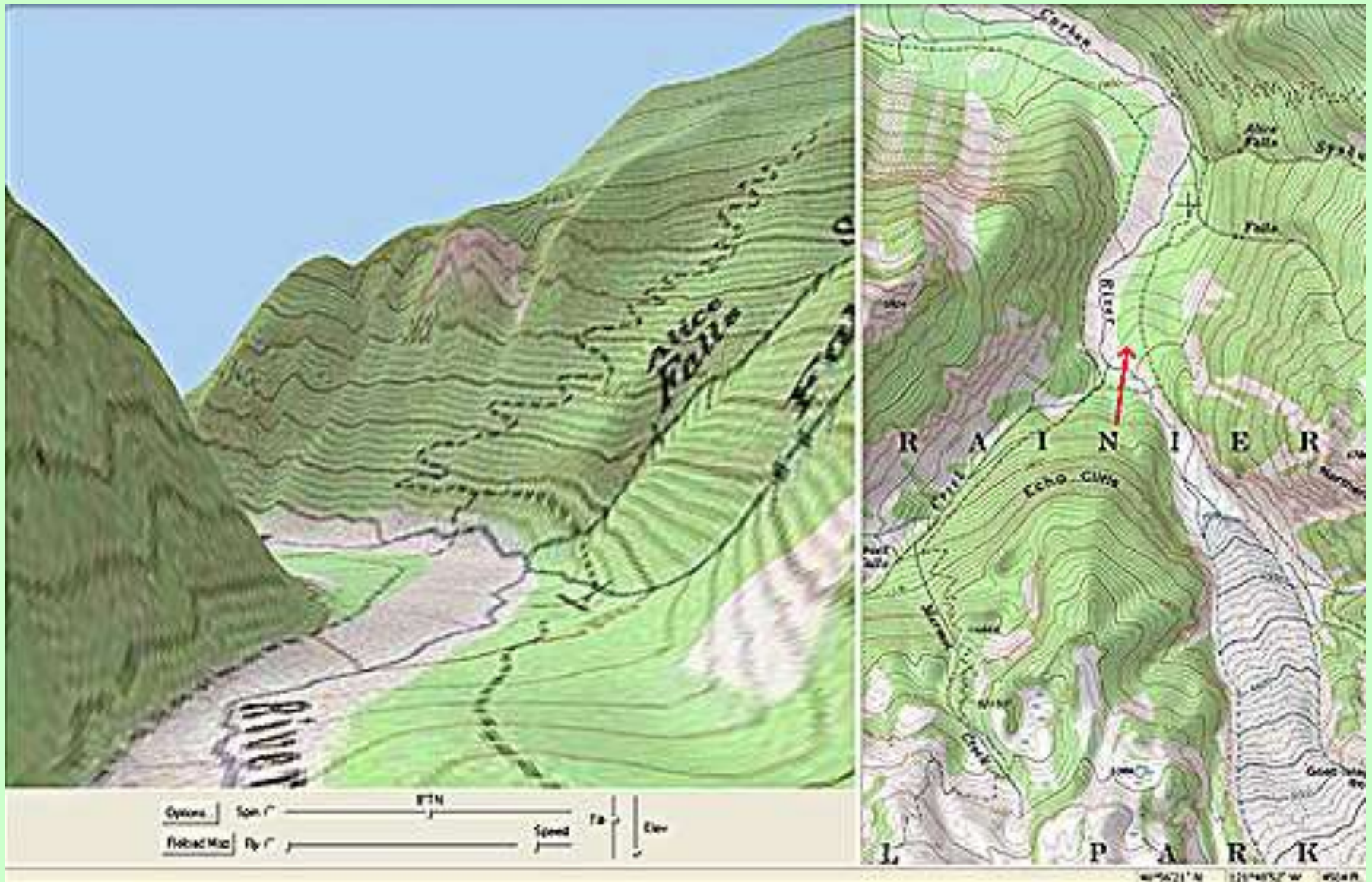
Topografik Haritalar



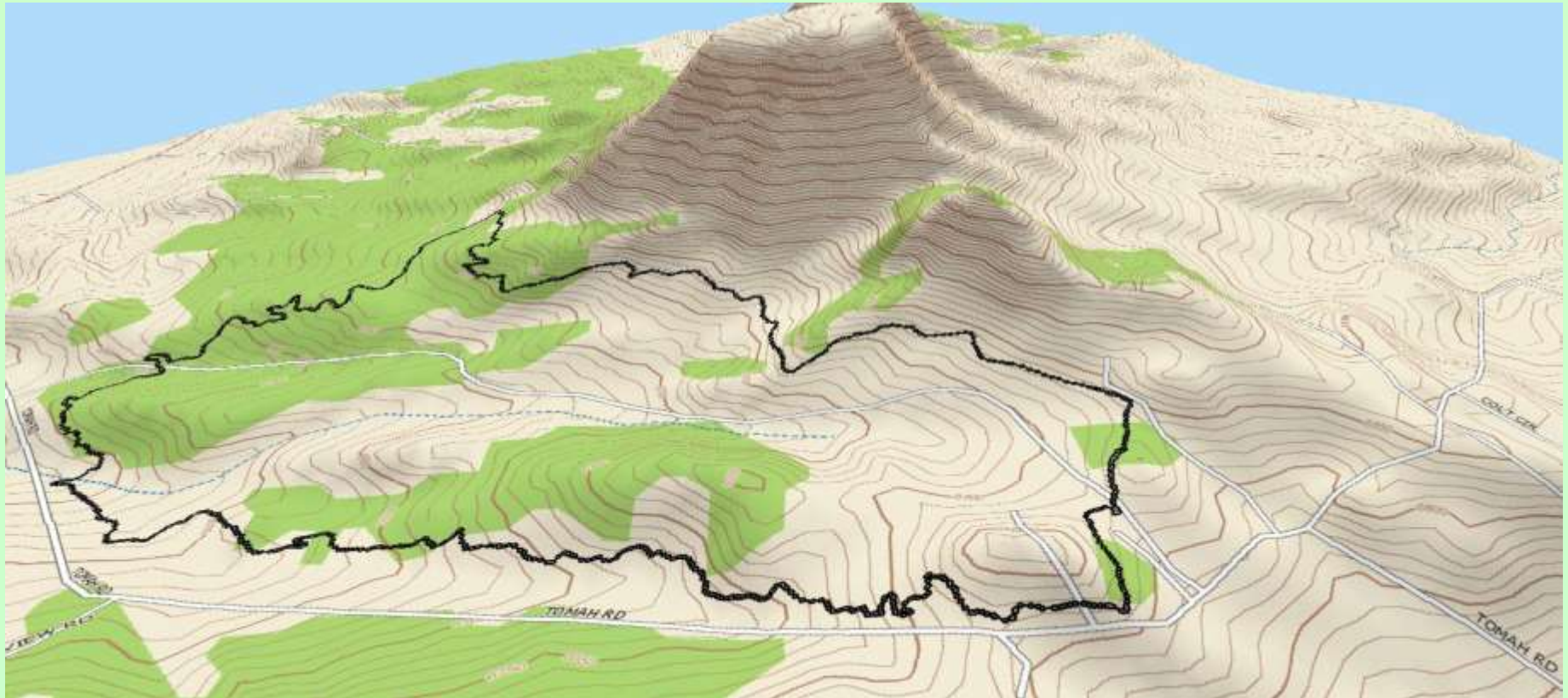
3D Topografik Haritalar



3D Topografik Haritalar



3D Topografik Haritalar

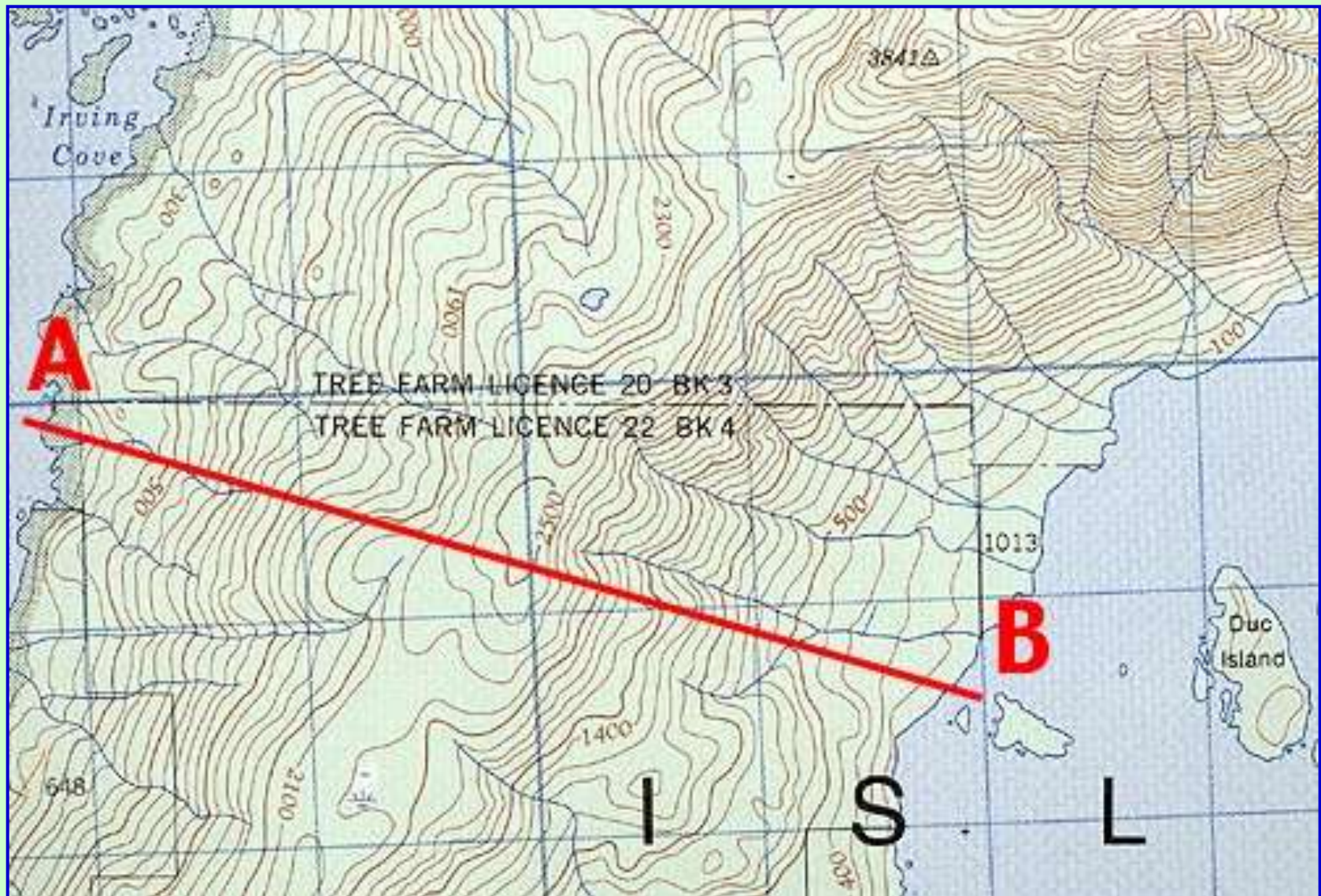




3D Topografik Haritalar

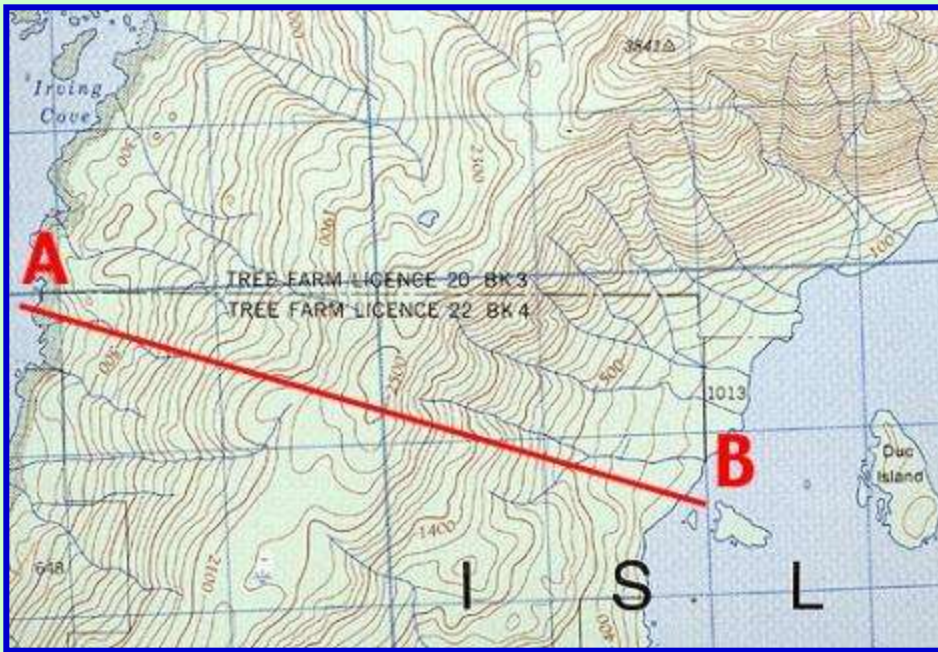


Topografik Harita

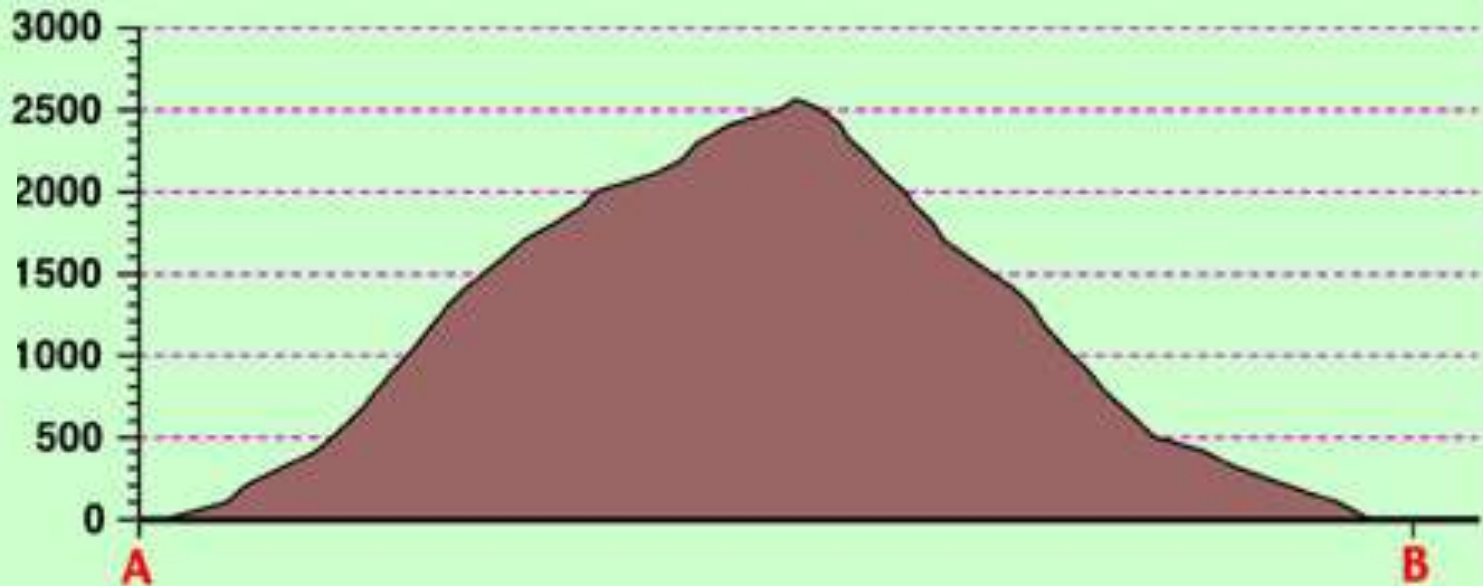




Topografik Harita ve Kesiti



Deniz
düzeyi
üzerindeki
yükseklik



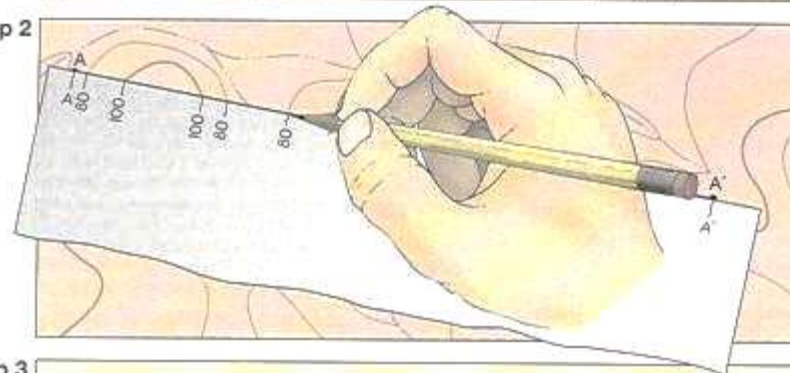
Topografik Kesitler



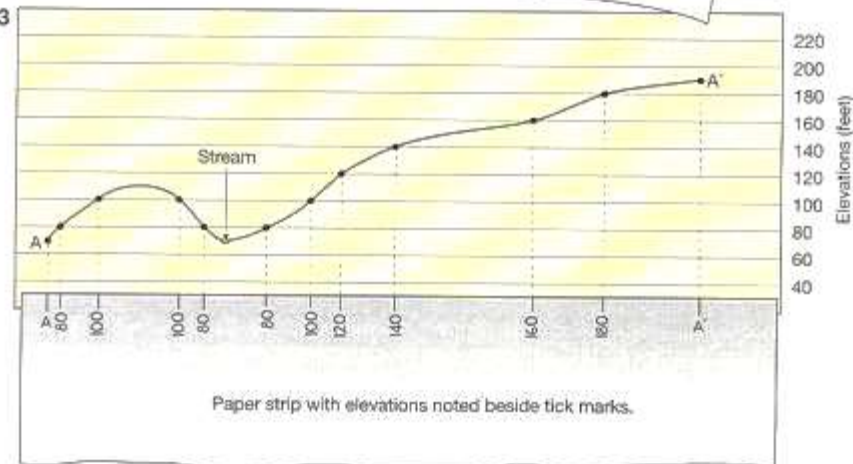
Step 1



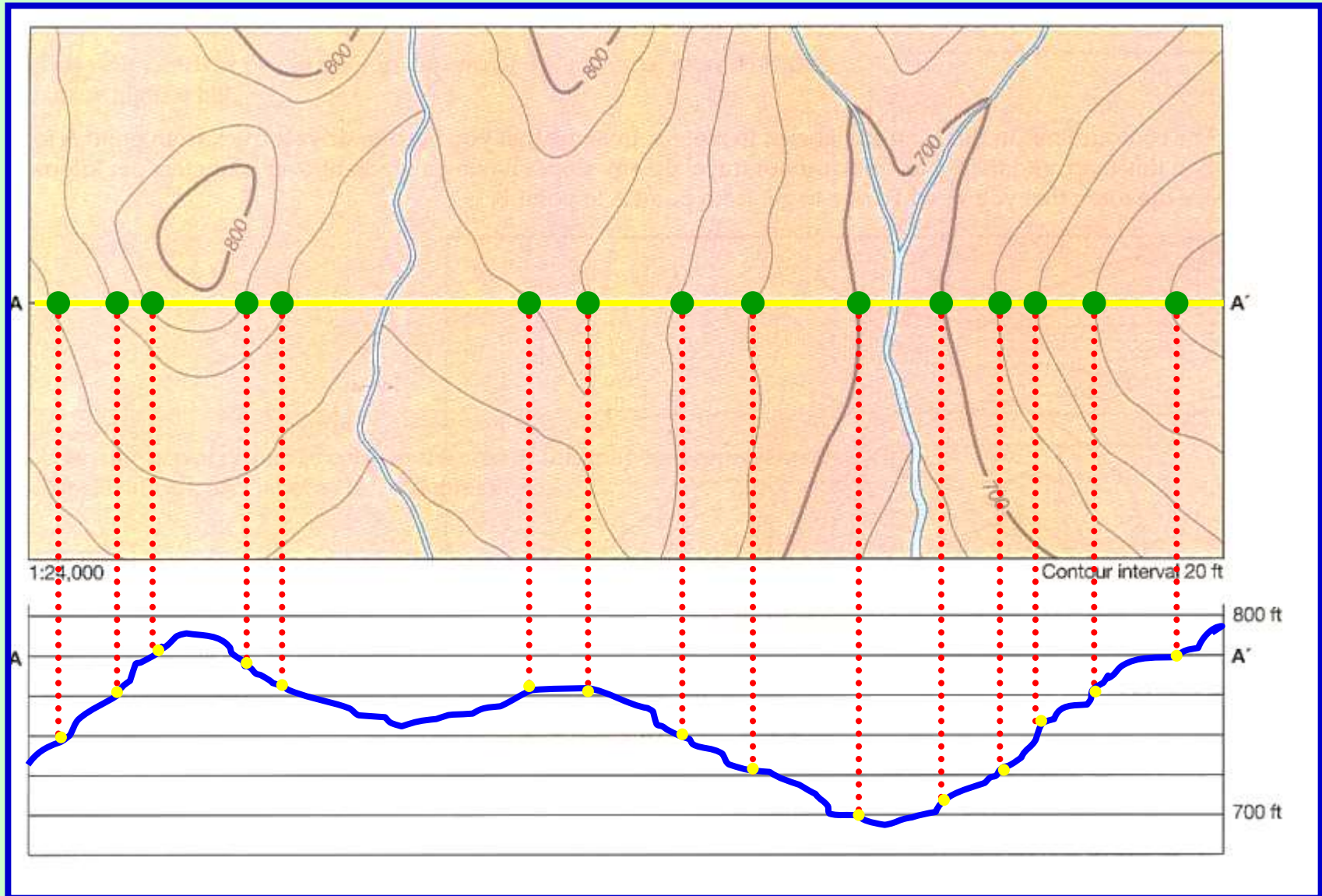
Step 2



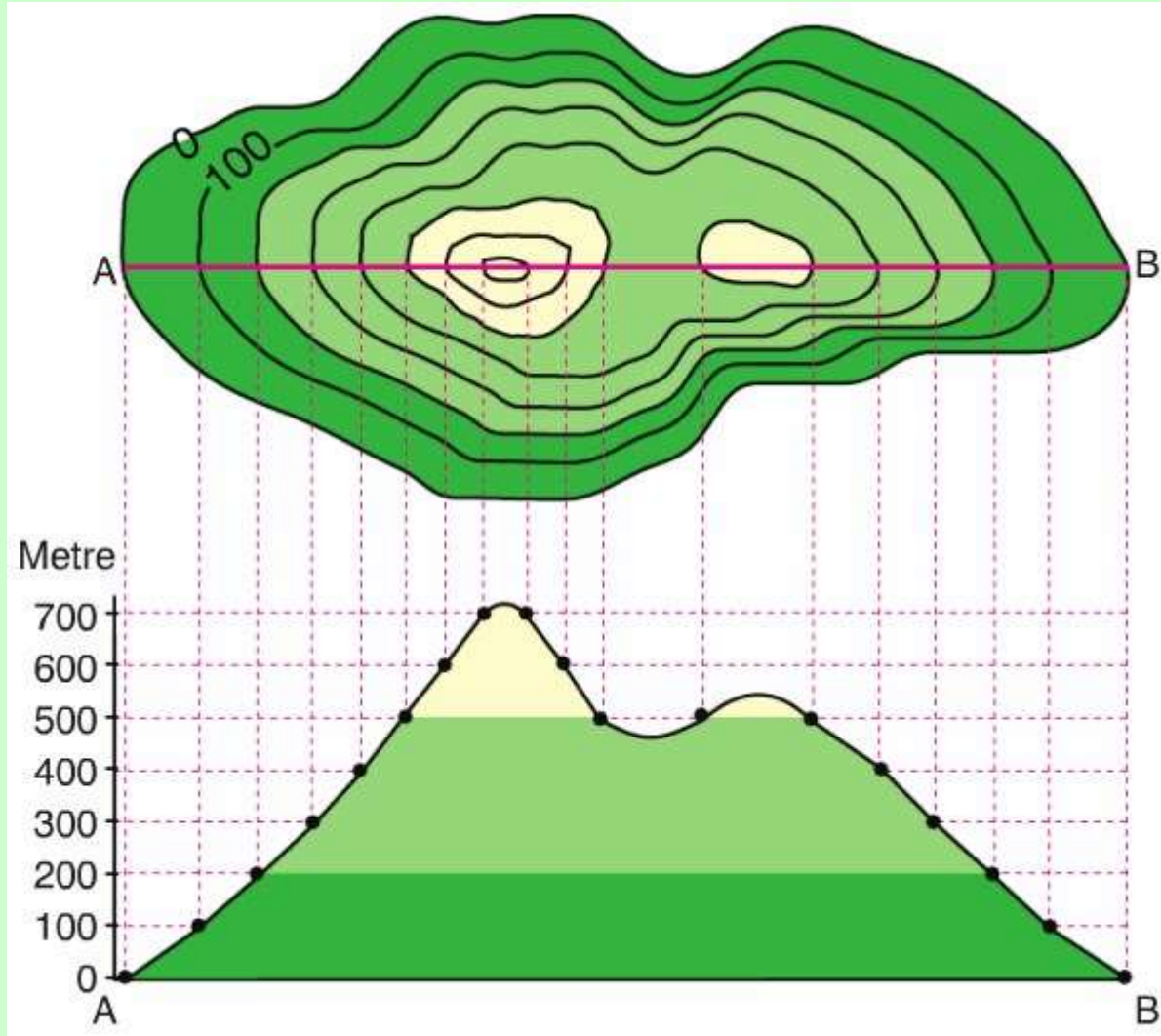
Step 3



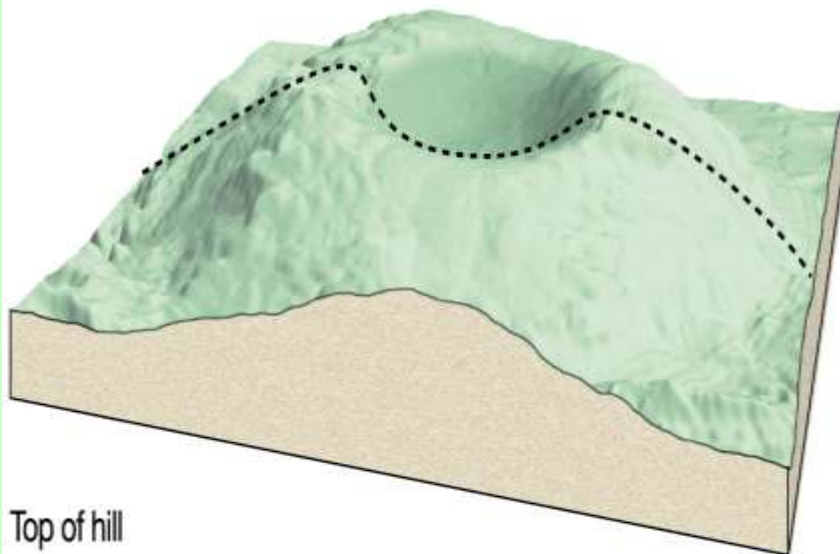
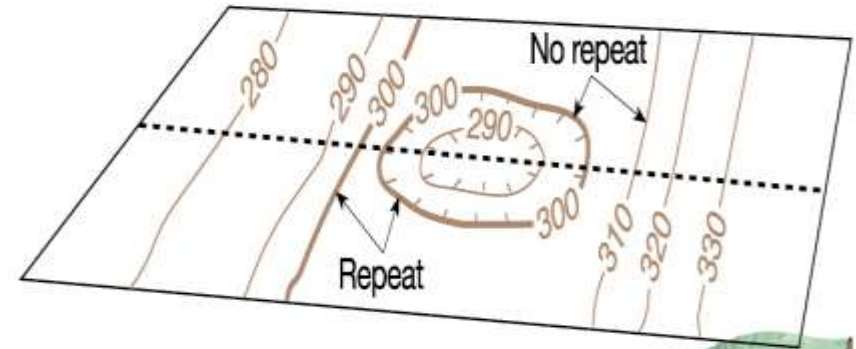
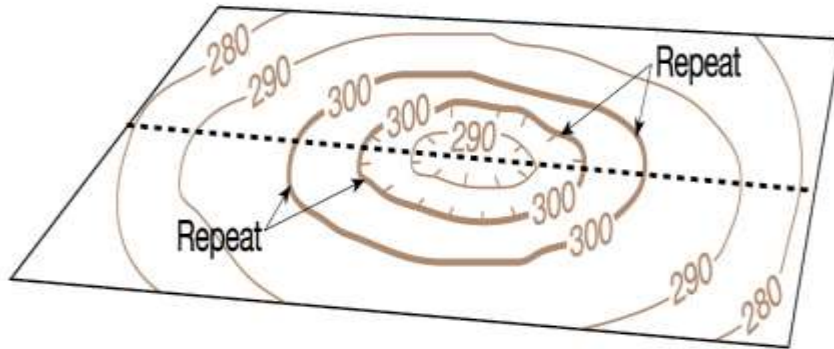
Topografik Kesit Nasıl Çizilir?



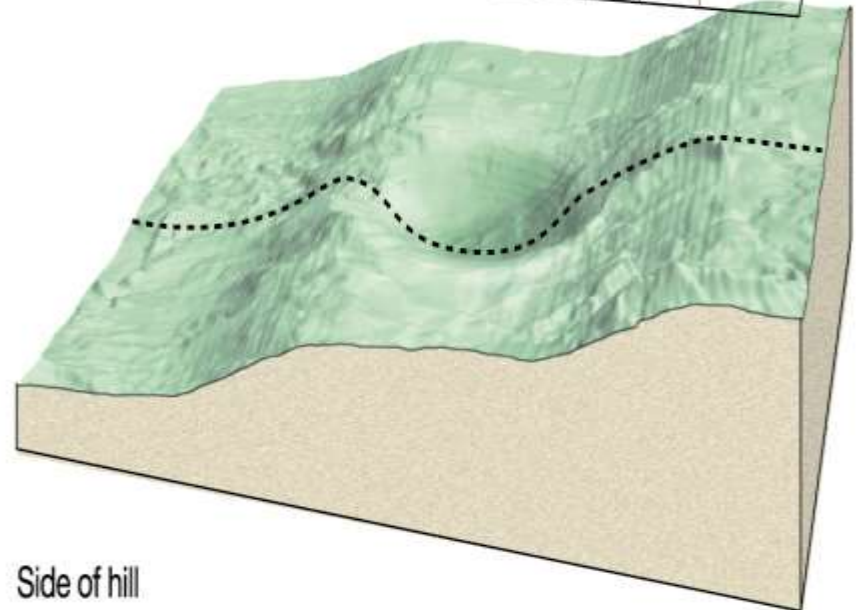
Topografik Kesit Nasıl Çizilir?



Çöküntü alanlarında konturlar (karstik oluşum Dolin=Sinkholes)



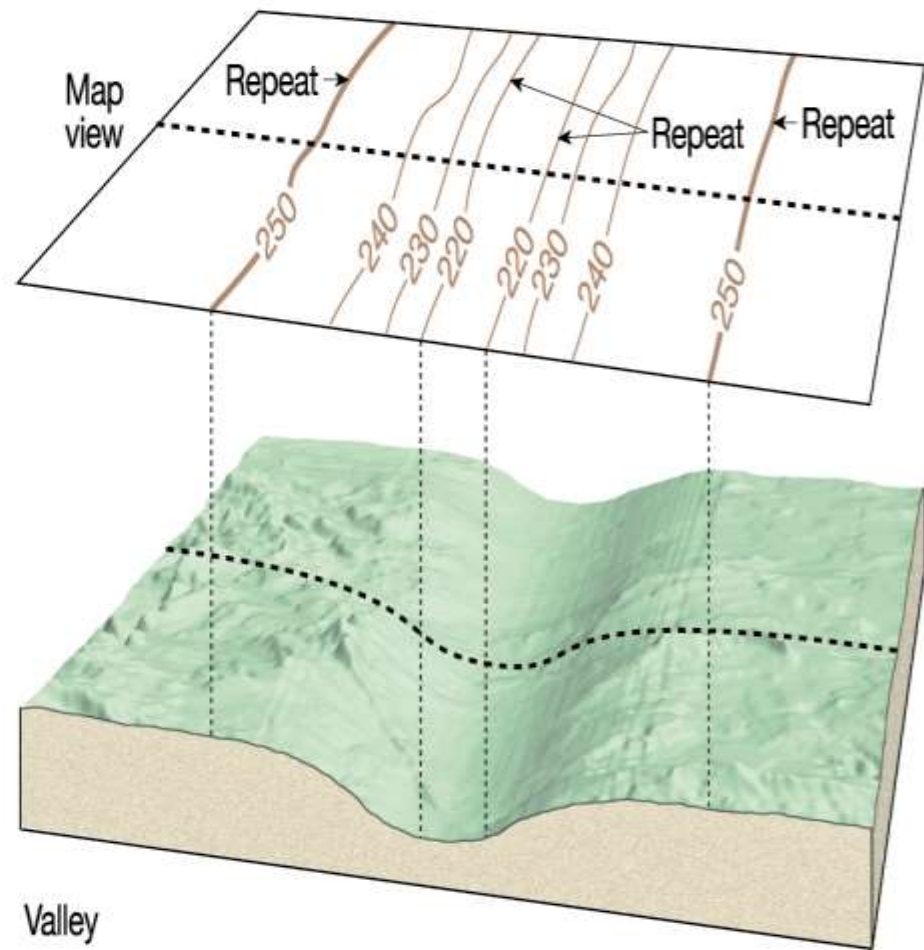
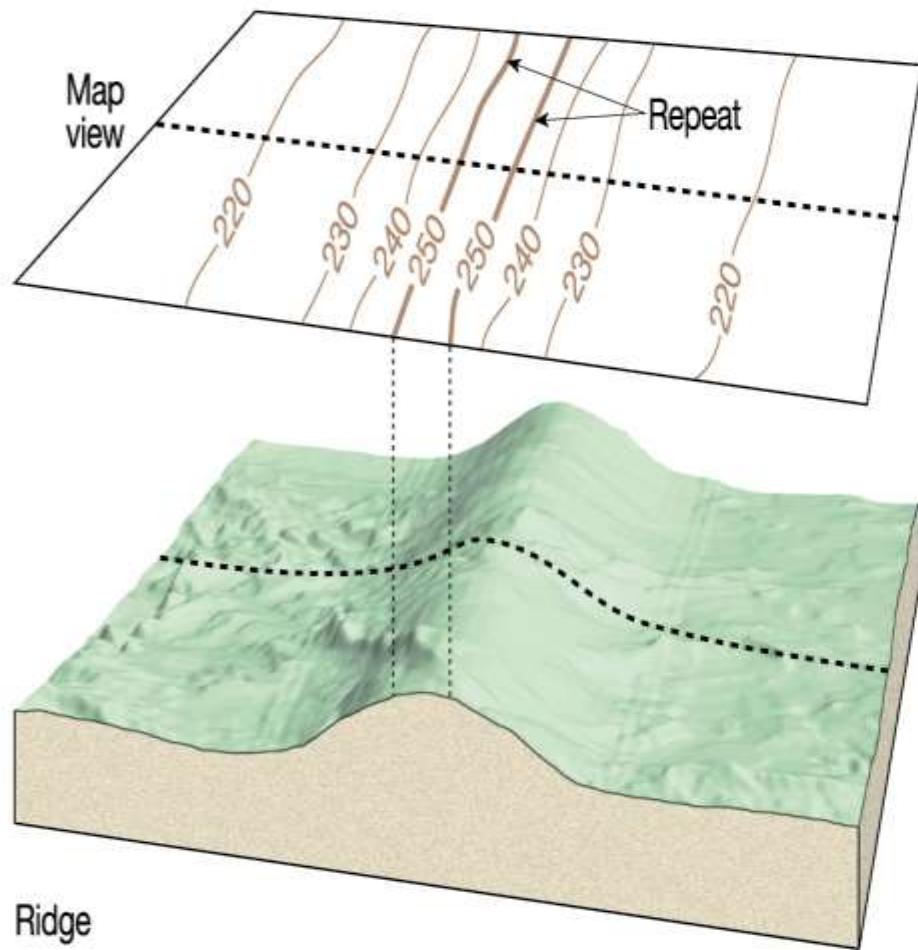
Top of hill

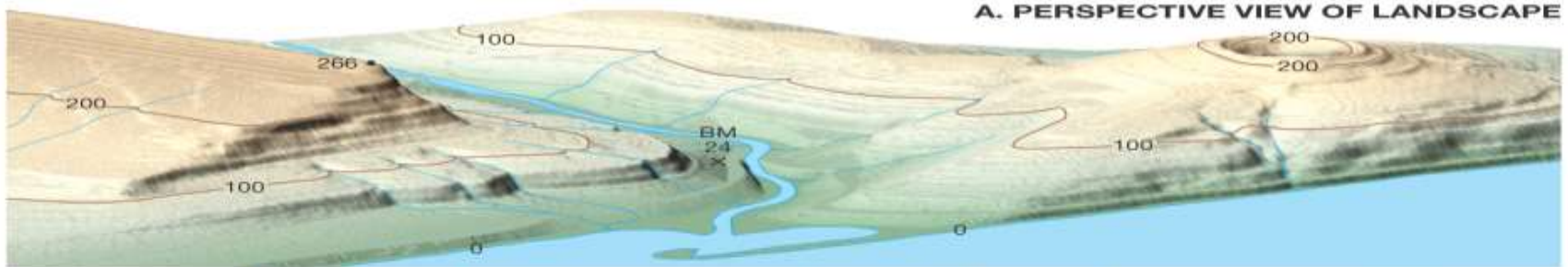


Side of hill

Sırt ve Vadilerde konturlar

İki harita da benzer görünüyor, sadece yükseklikler farklı, her ikisinde de tekrarlanma var

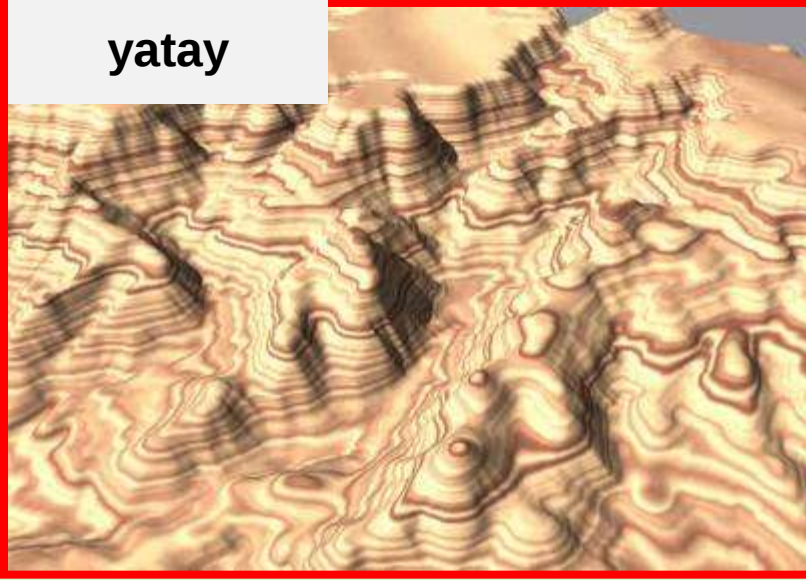




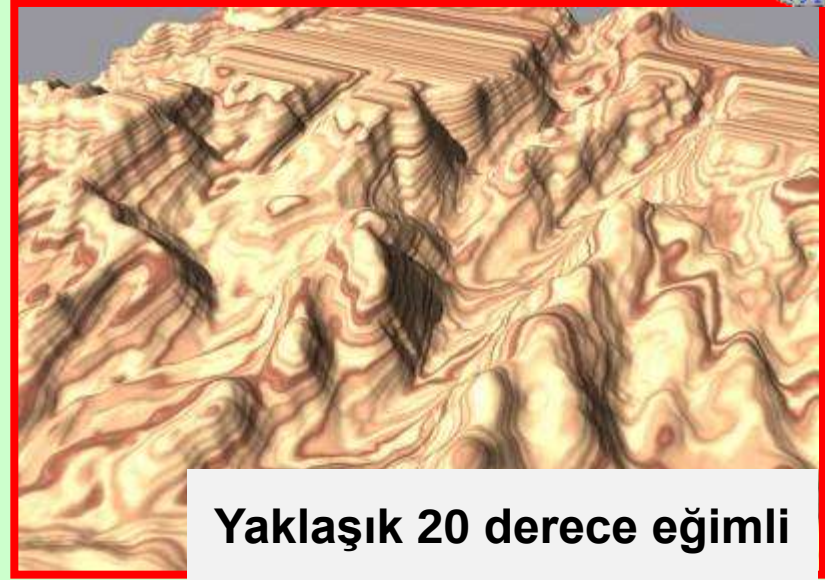
Topografya İle Tabaka Düzlemlerinin Kesişmesi



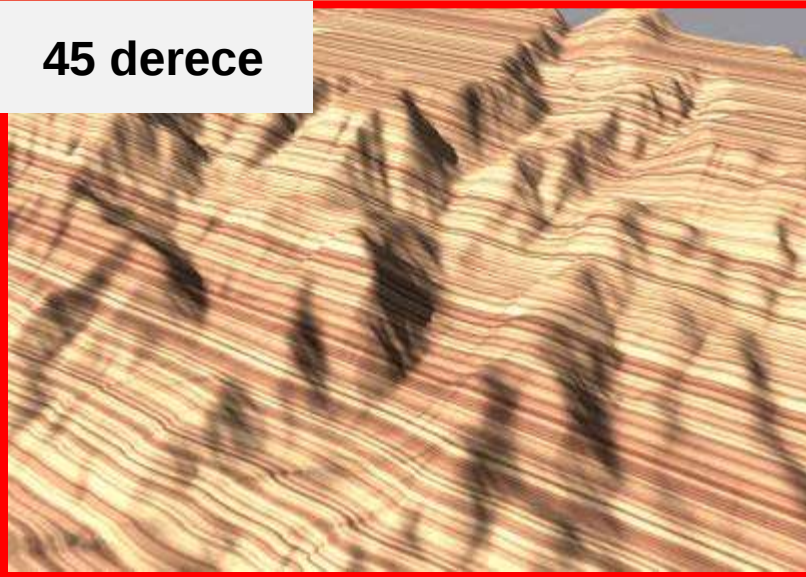
yatay



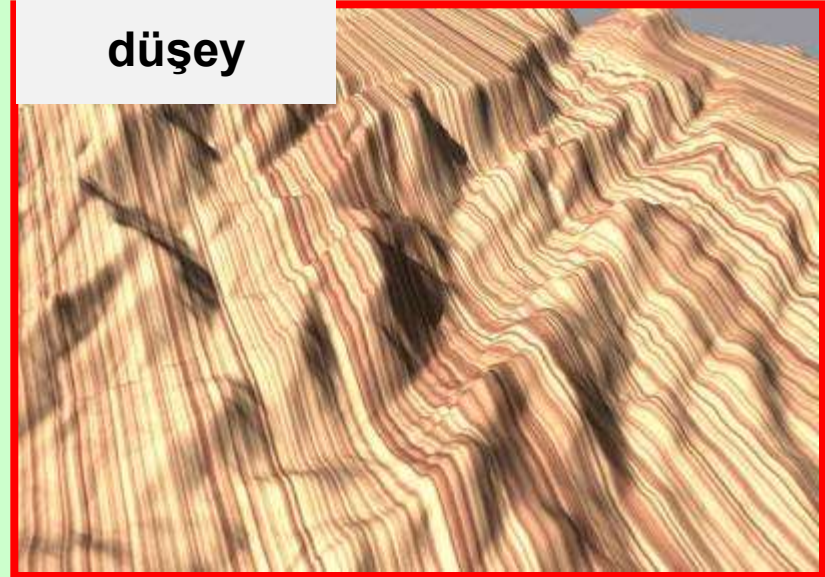
Yaklaşık 20 derece eğimli



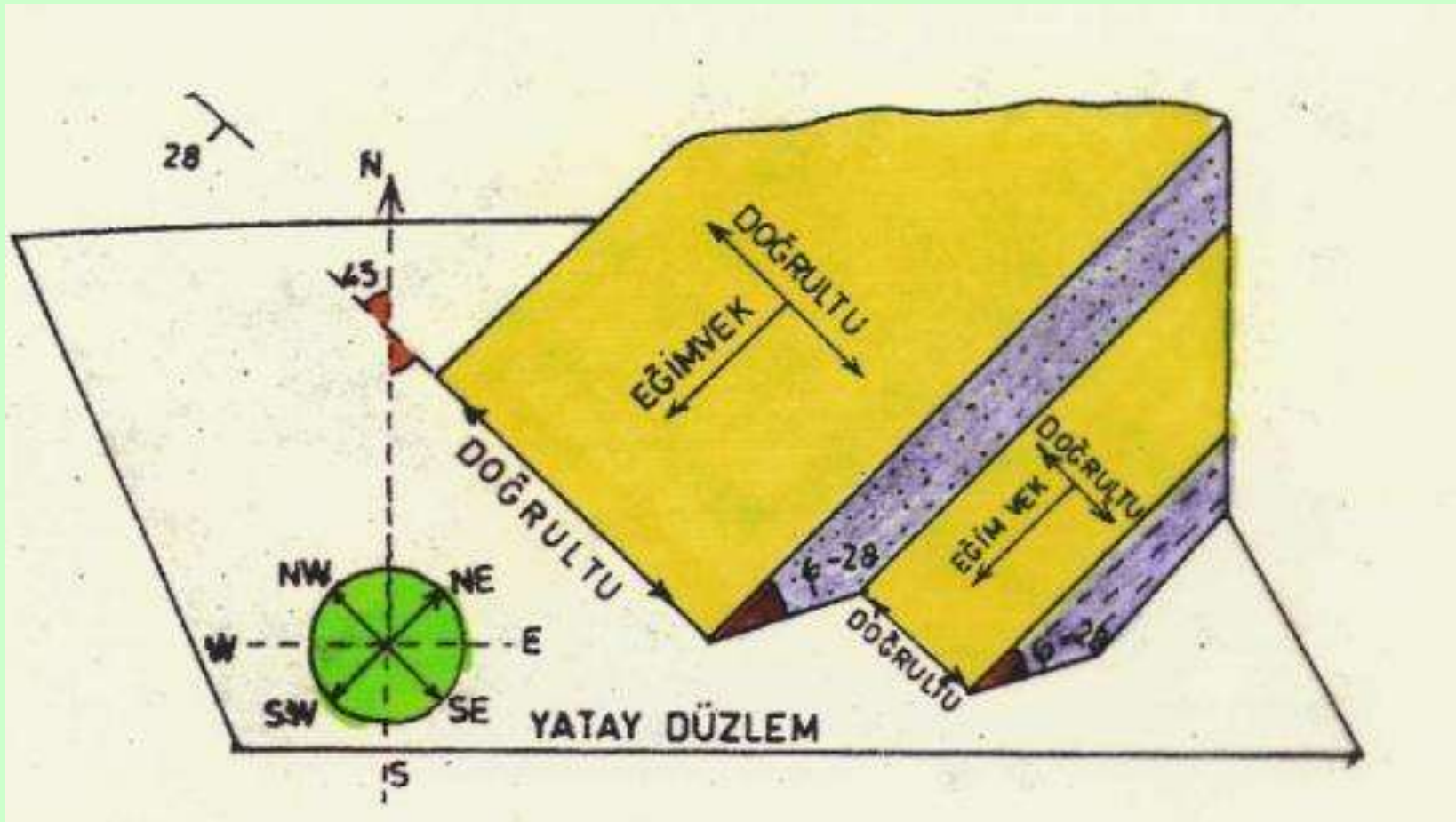
45 derece



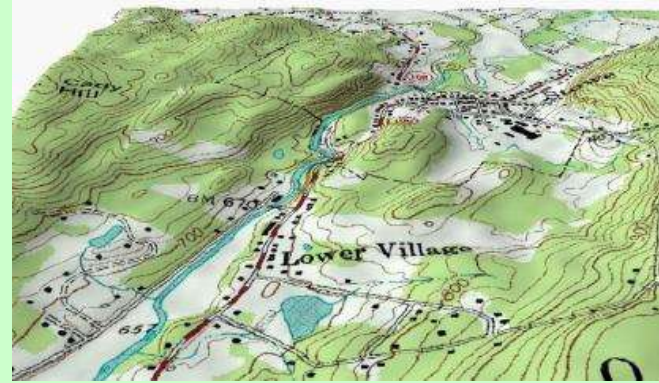
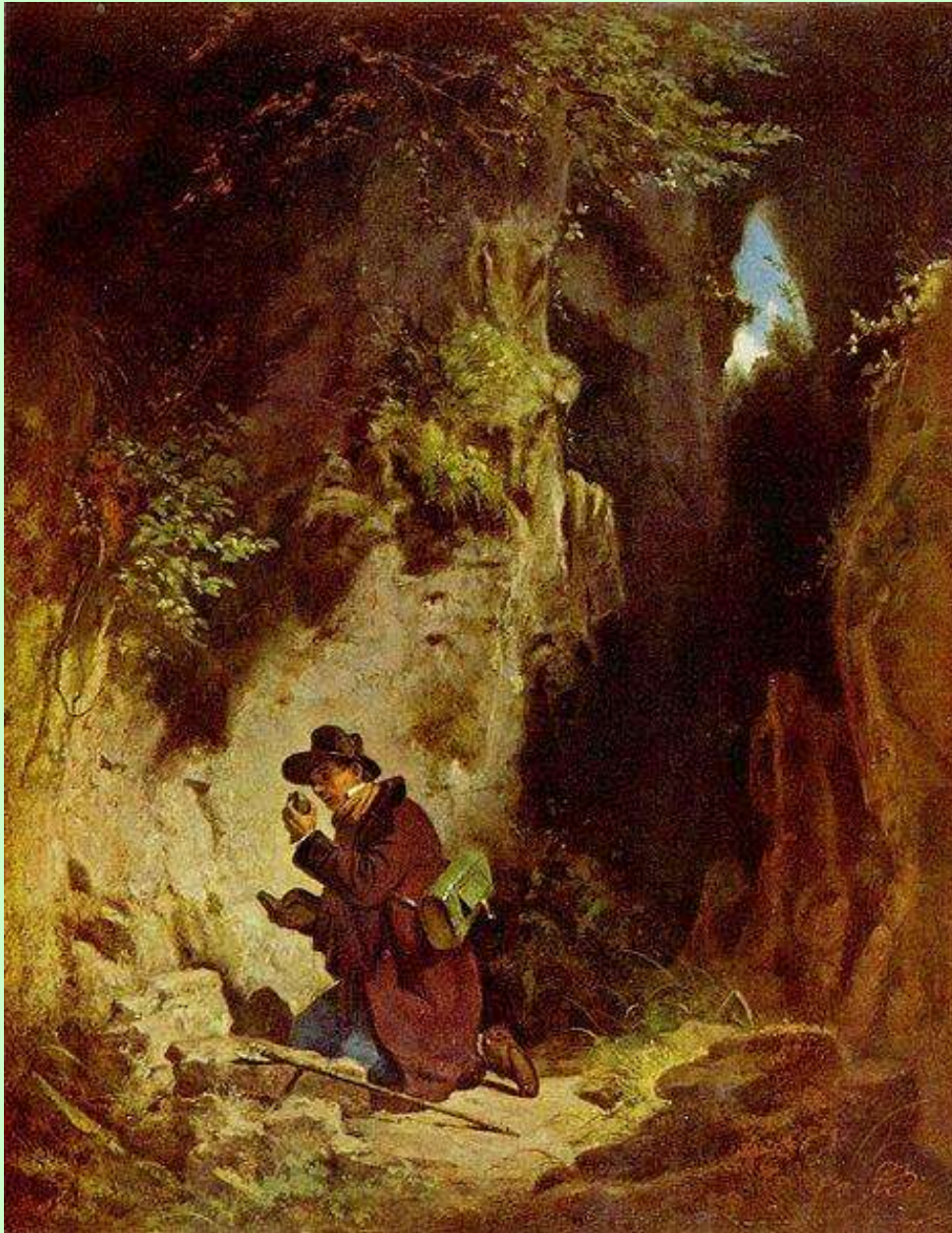
düşey



Tabakanın Doğrultu Ve Eğimi



Jeolog ve Haritalama



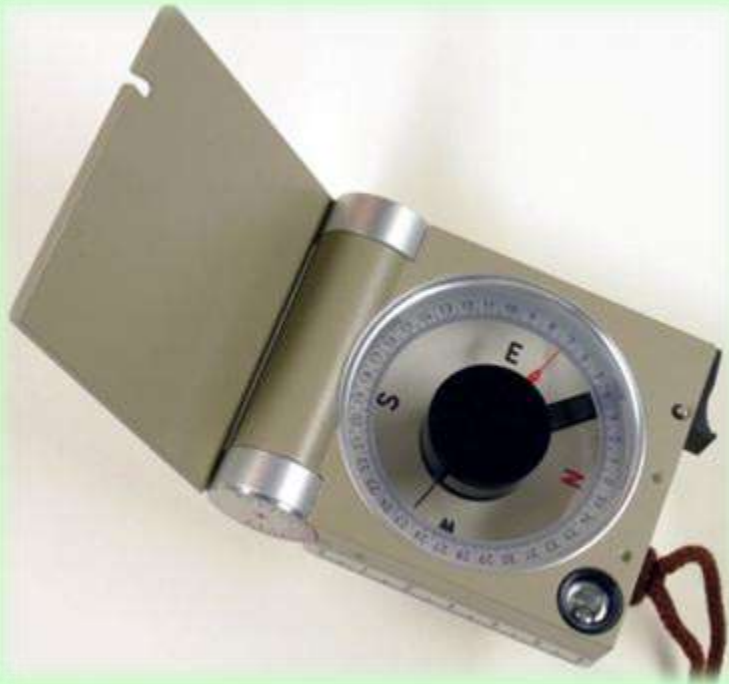
Küresel Konumlandırma Sistemi

GPS Cihazı





Jeolog Pusulası

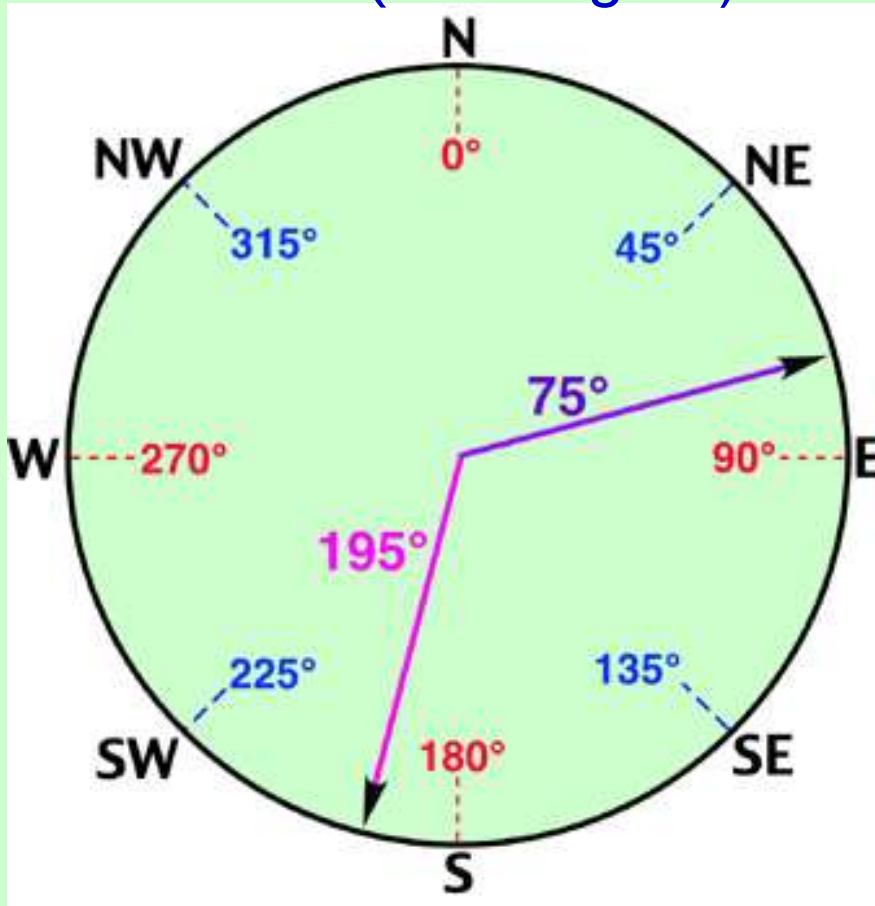


Tabaka Doğrultu Ve Eğiminin Jeolog Pusulasıyla Ölçümü

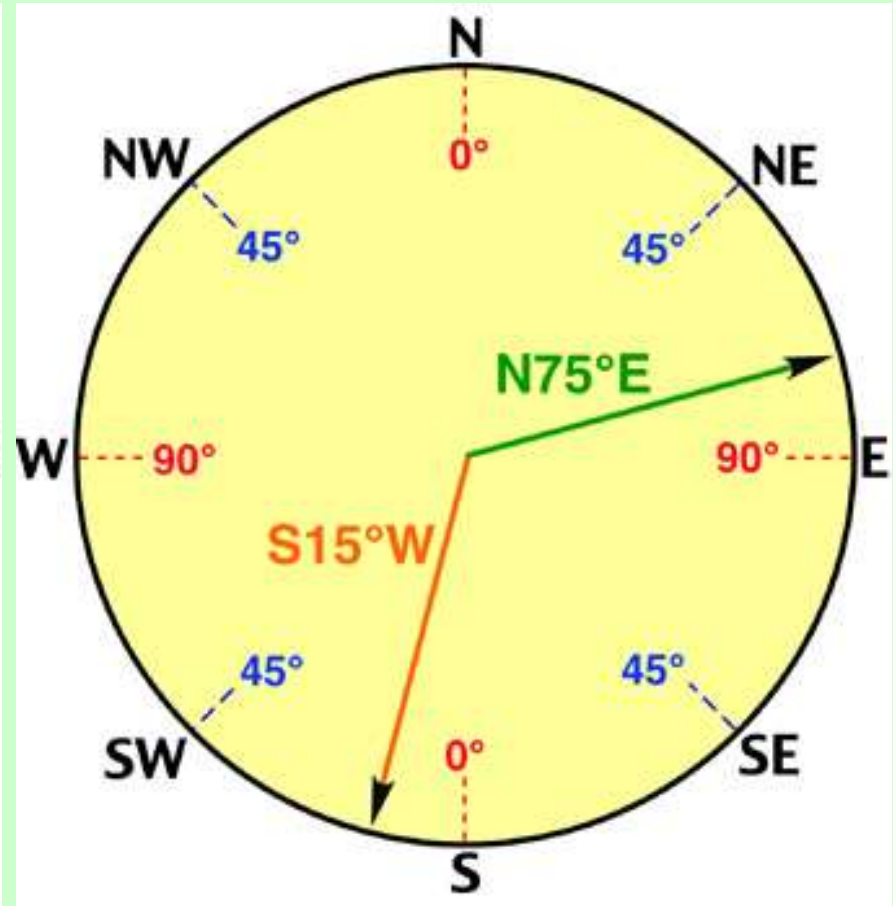


Azimut ve Cihet Okuması

Azimut (360° a göre)



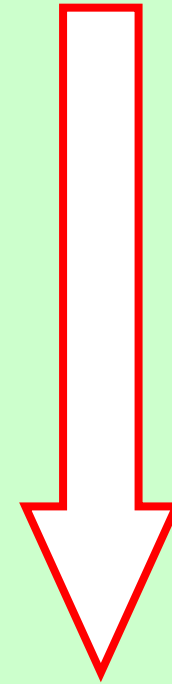
Cihet (90° A Göre)



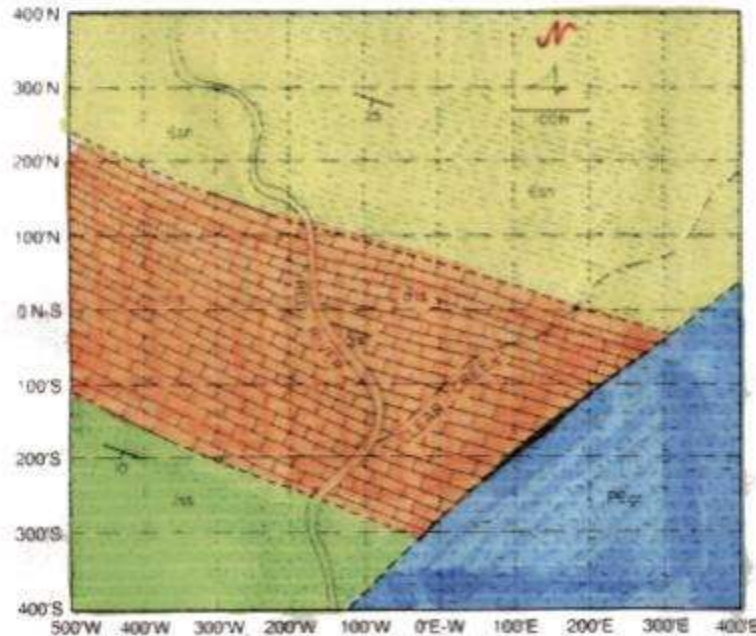
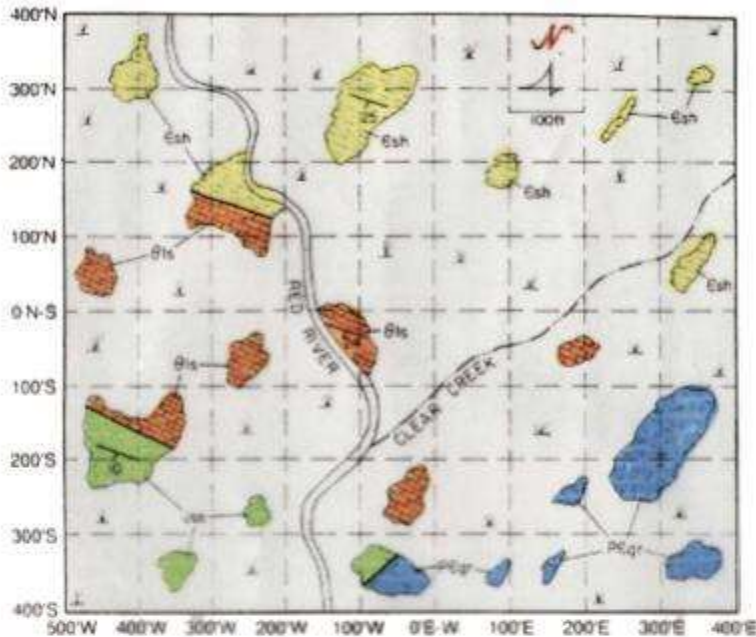


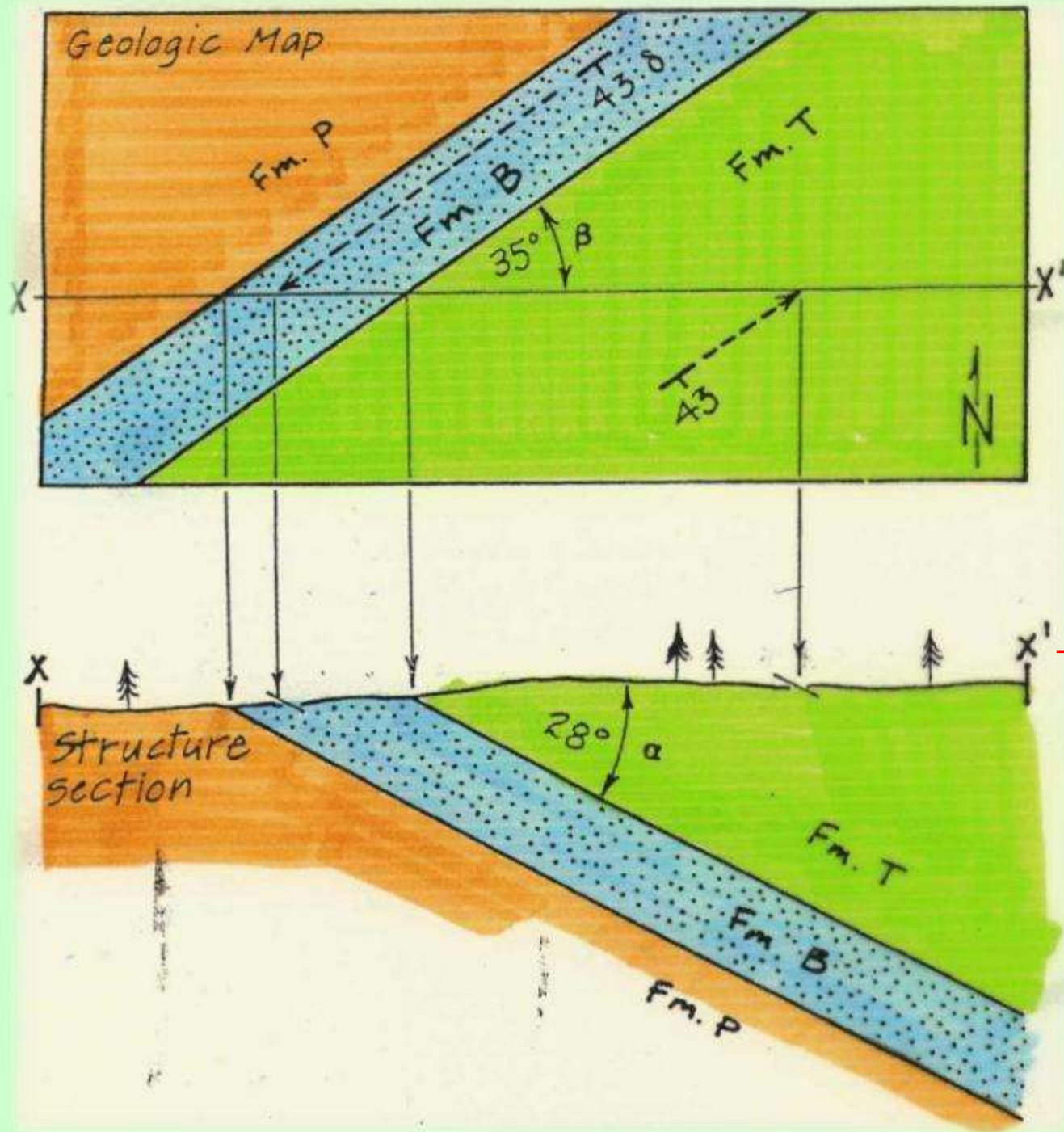
Mostra Haritası

Yeraltındaki kayaçların yeryüzüyle
kesişmesi sonucu mostra meydana
gelir



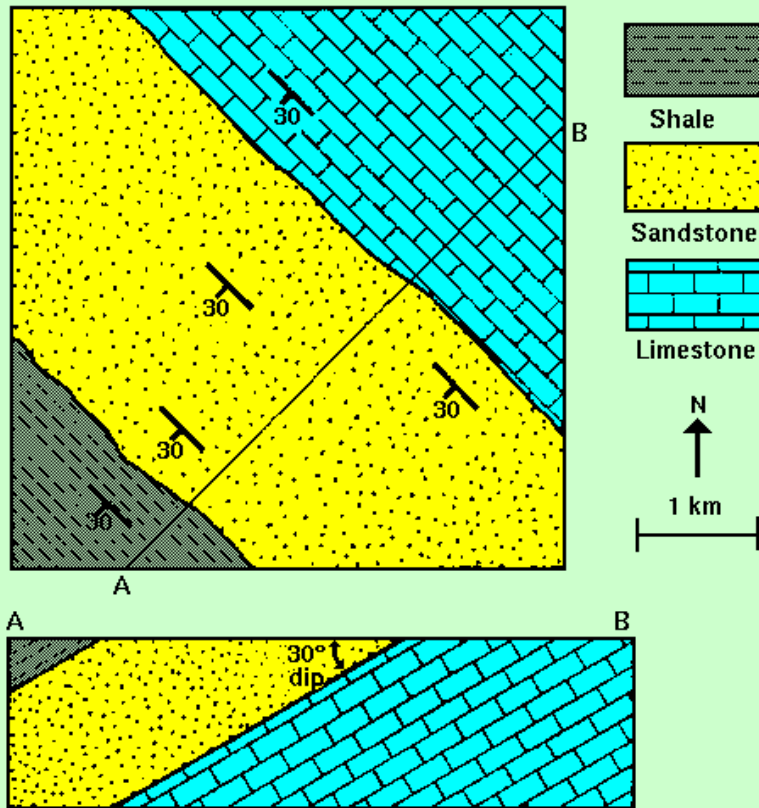
Jeoloji Haritası





Jeolojik Harita Ve Jeolojik Kesit

Tabakanın Gerçek Kalınlığının Bulunması



1. Doğrultuya dik yönde yapısal kesit çiziniz (X-kesiti)

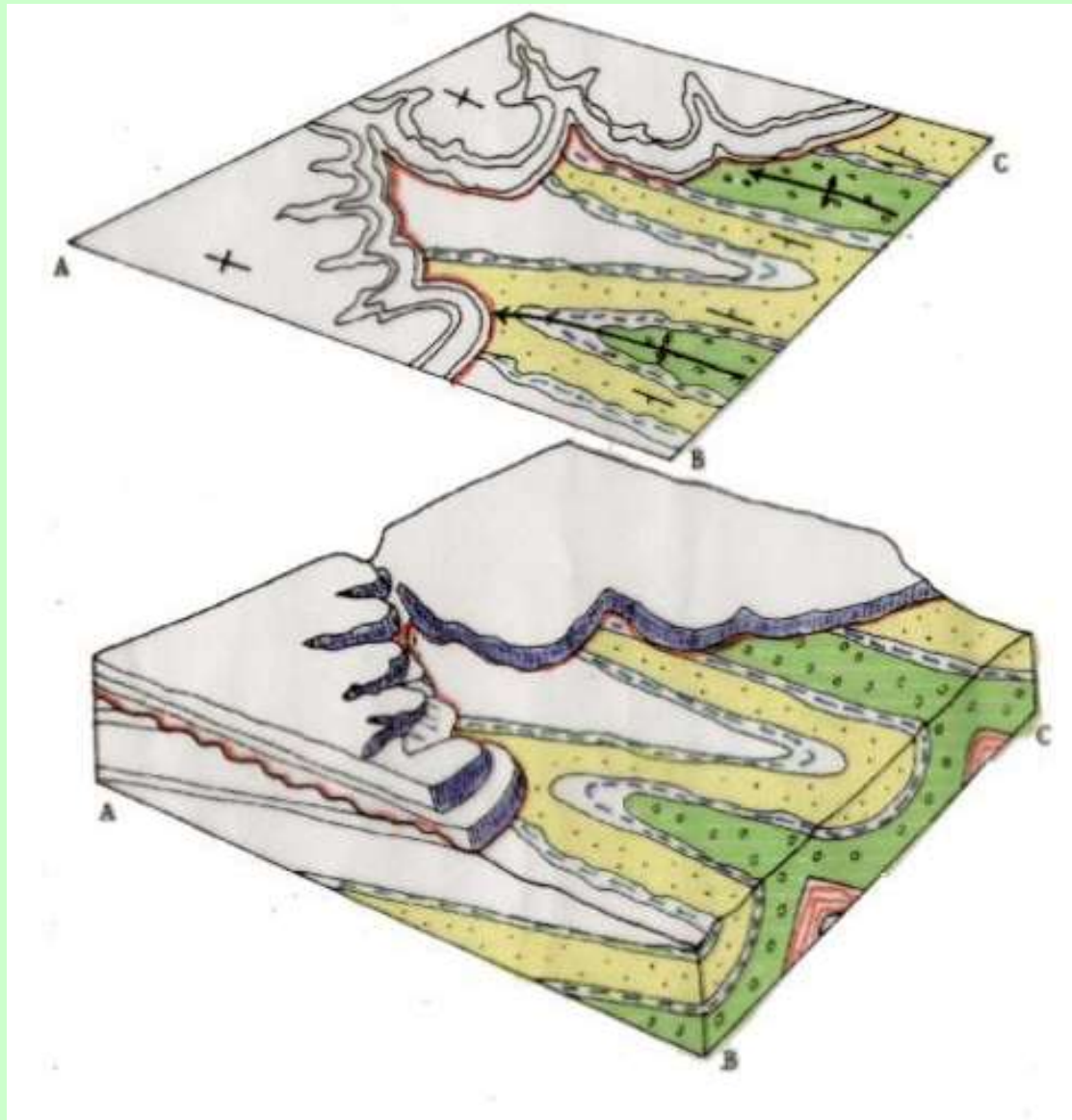
2. Tabakaların hakiki eğimlerini kesit çizgisi üzerine iz düşürün

3. sarı renkli tabakanın hakiki kalınlığını* hesaplamak için trigonometrik hesaplama yapınız.

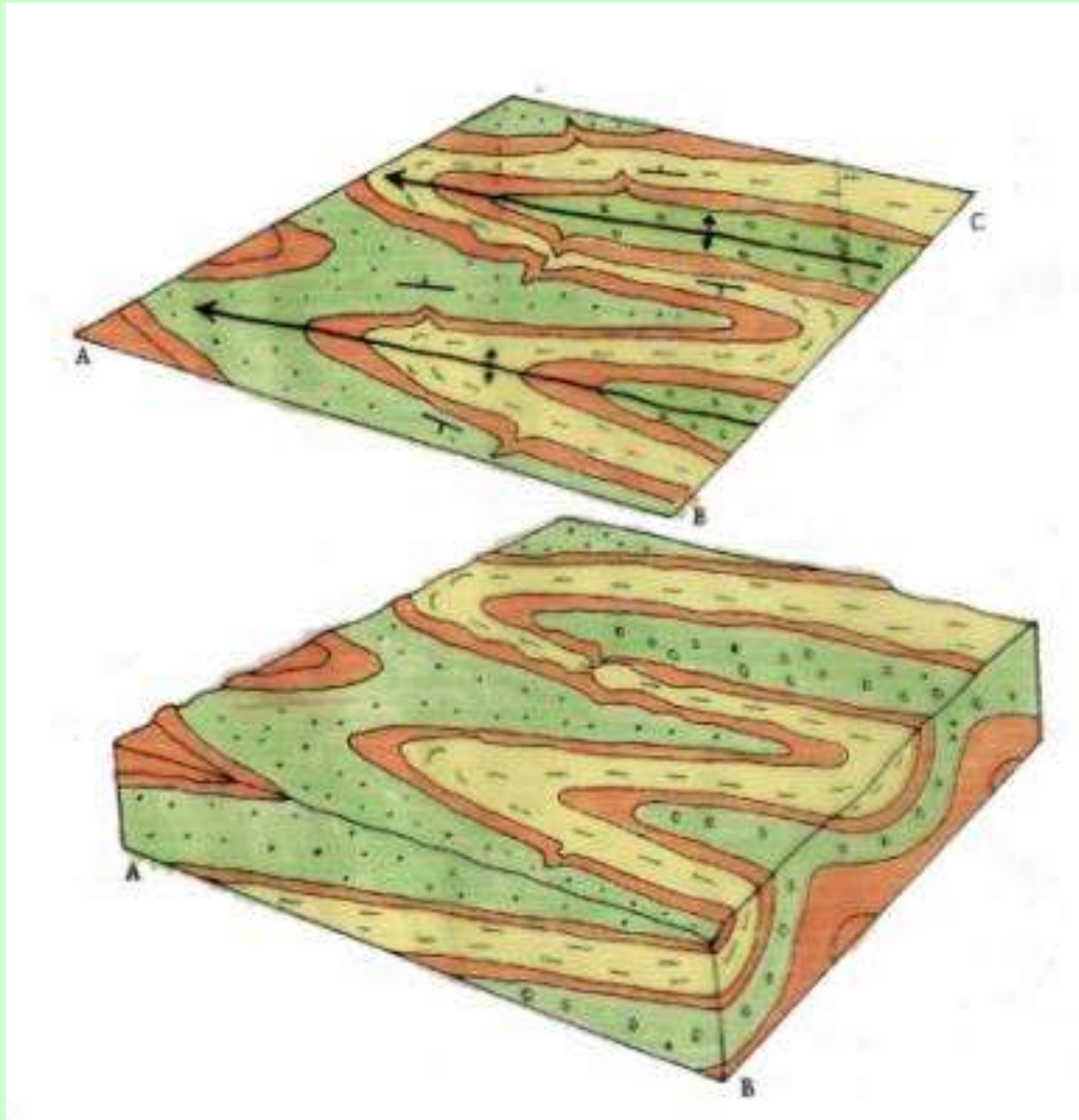
* hakiki kalınlık = tabakanın tavanı ve tabanı arasındaki en yakın uzaklıktır

Eğimli tabaka için, harita üzerindeki kalınlık gerçek kalınlık değil, görünür kalınlık değildir!

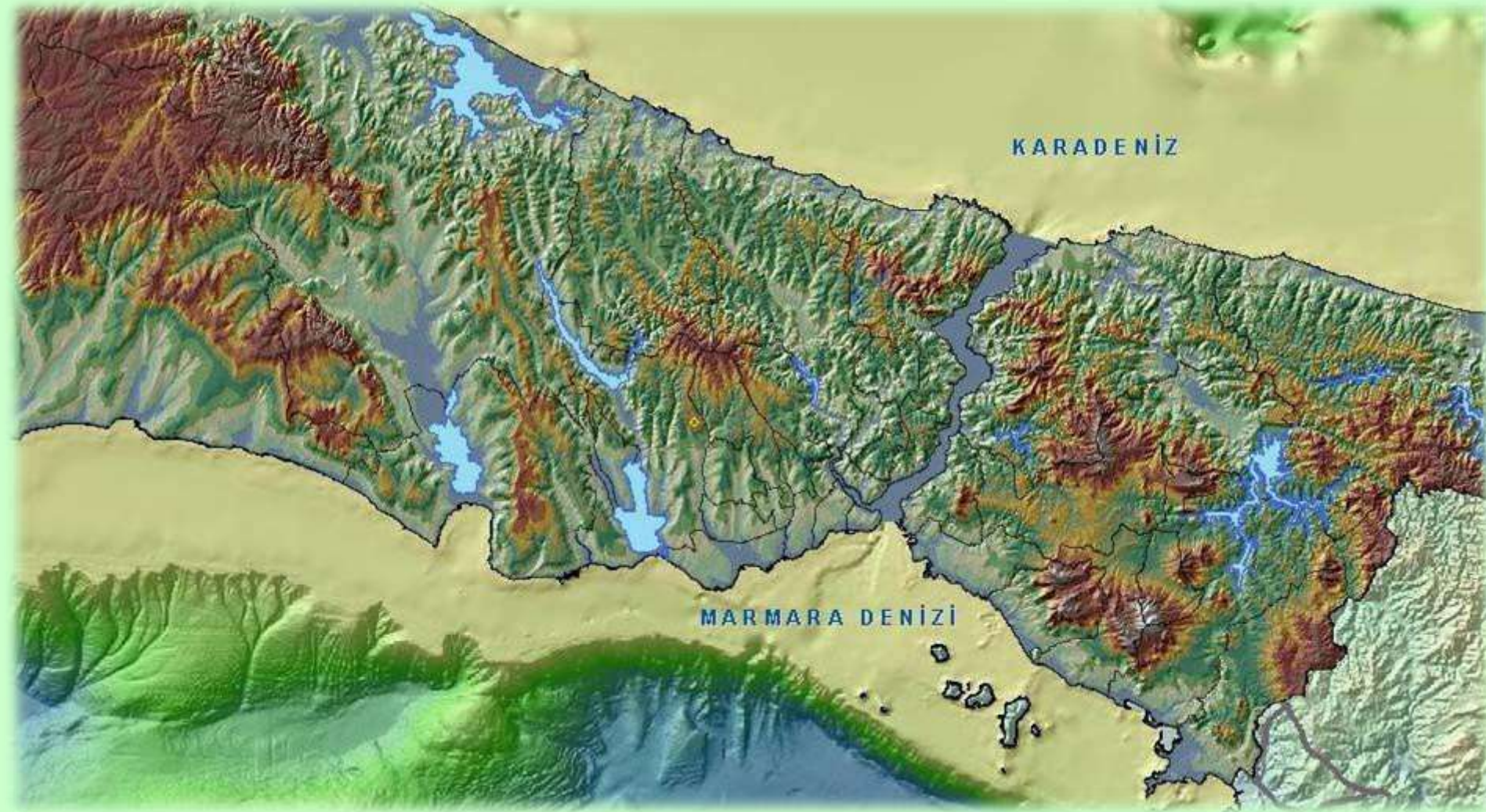
Bazı jeolojik haritalar ve 3D görünüşleri



Bazı jeolojik haritalar ve 3D görünüşleri



Teşekkürler



Prof Dr Şükrü Ersoy