Building the Appalachian Mountains

Elevation (m)

High : 4275

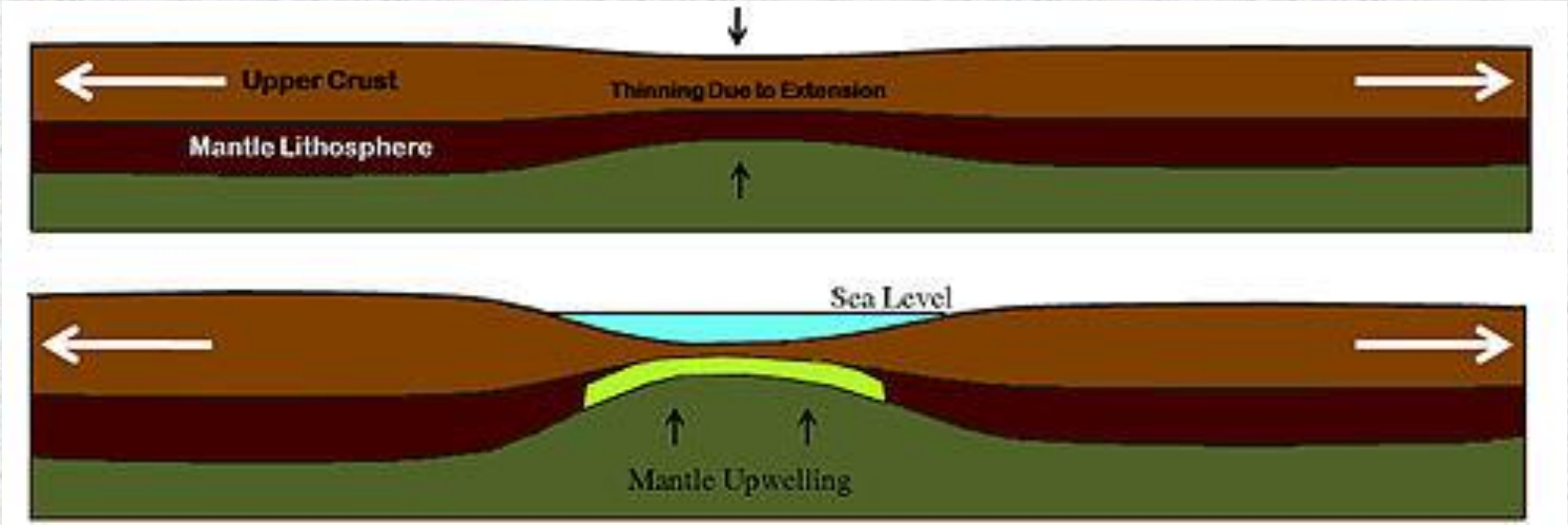
Low : -171

How did the Appalachian's form?: Step 1: The Crustal Rocks Form

- 1 billion years ago
  - Appalachian Mountain crust & rocks form
  - Crust is part of a single continent surrounded by ocean

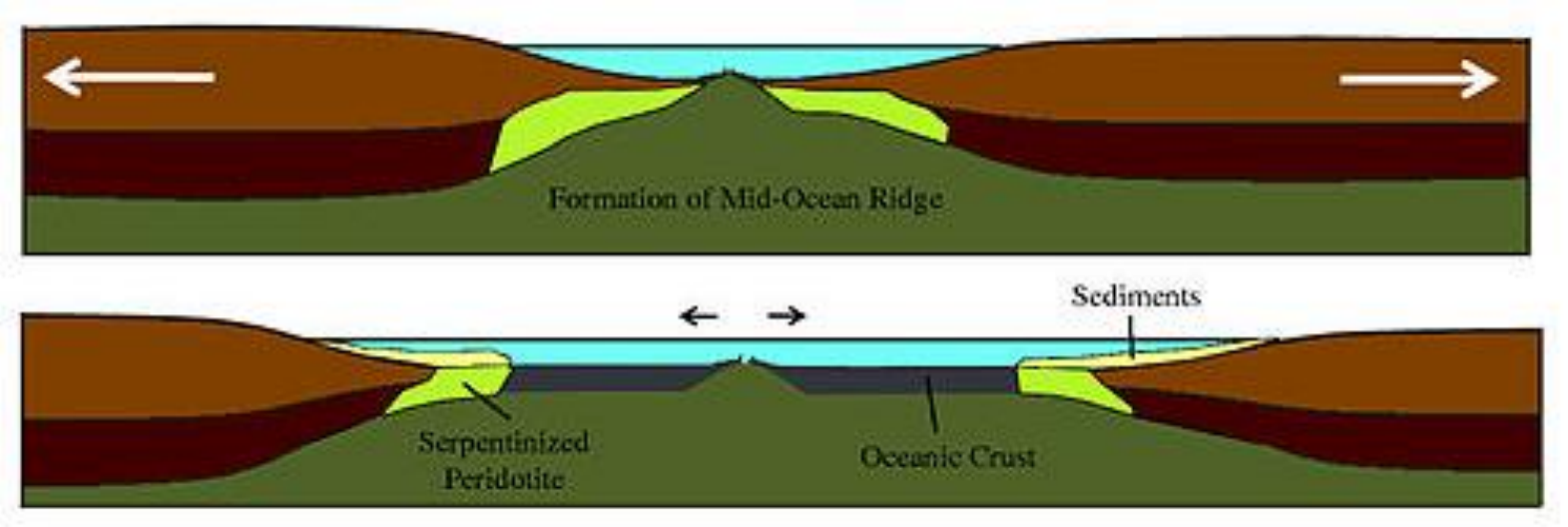
How did the Appalachian's form?: Step 2: Supercontinent Breaks Up

- 750 mya (million years ago):
  - Supercontinent begins to thin in places
  - Thinner crust breaks apart into pieces
  - The pieces of the original supercontinent all become new continents



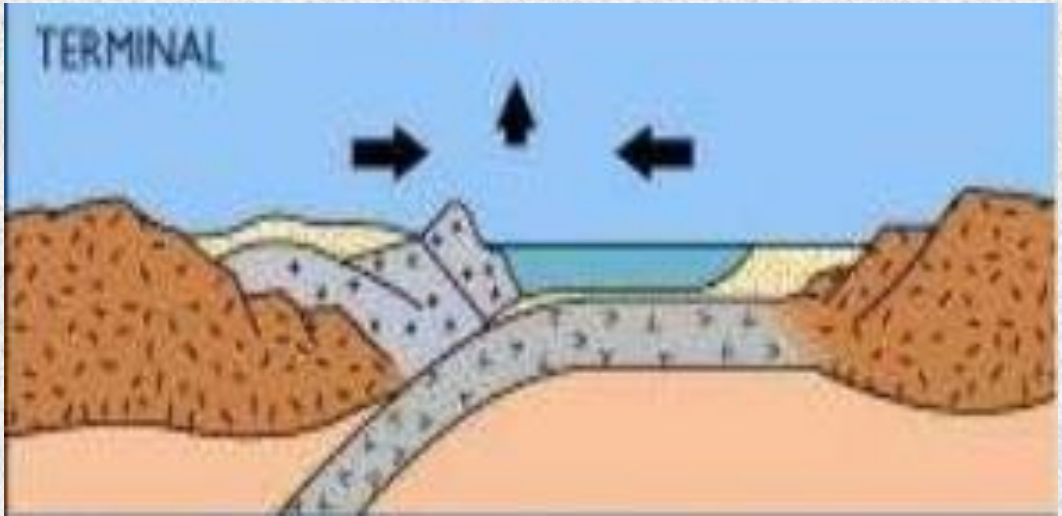
How did the Appalachian's form?: Step 3: Divergent Continental Drift

- 540 mya:
  - New continents move away from one another
  - Ocean forms between new continents
  - Copper, zinc, iron & sulfur deposit on sea floor



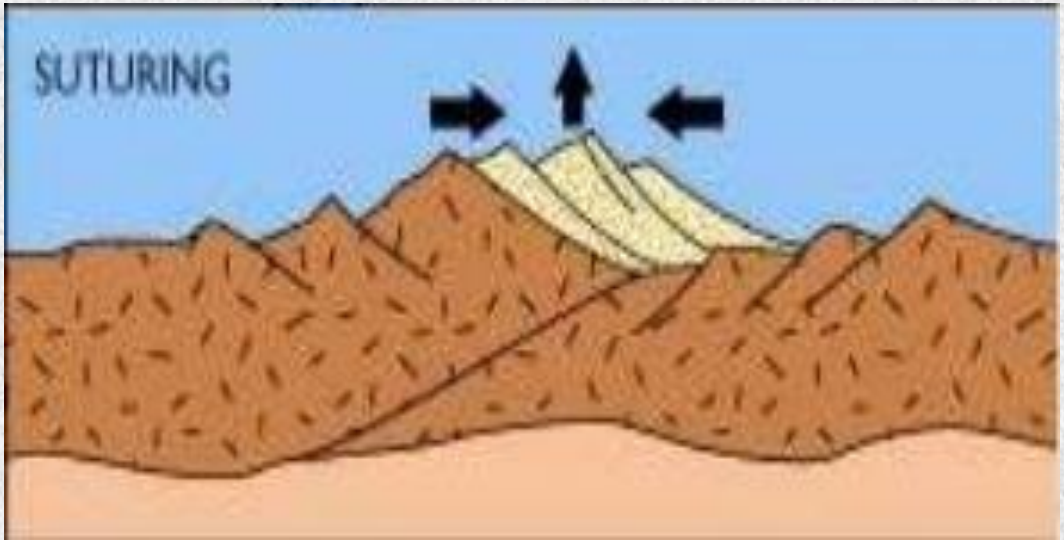
How did the Appalachian's form?: Step 4: Convergent Continental Drift

- 470 mya:
  - Continents reverse direction = North America & Africa move toward each other
  - Continents push ocean floor together
  - Frequent volcanoes



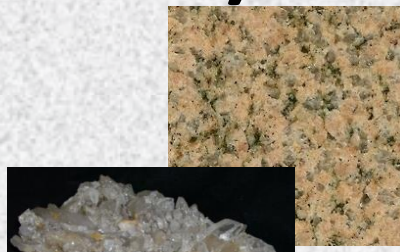
How did the Appalachian's form?: Step 5: Continental Collision

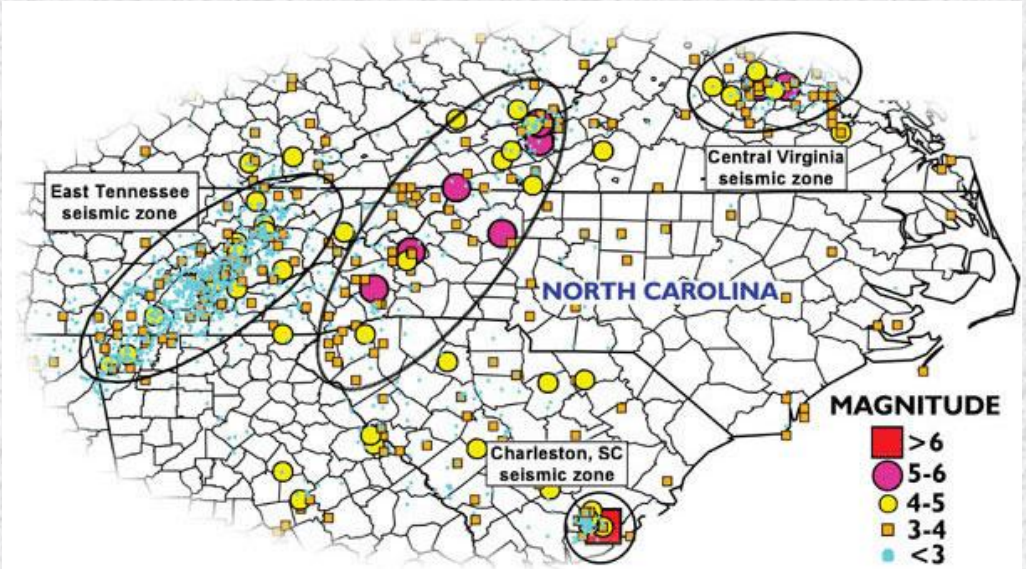
- 270 mya:
  - North American & African continents collide
  - Convergent continental-continental boundary
  - Plates of same density = most crust pushes up



How did the Appalachian's form?: Step 5: Continental Collision (cont'd)

- 270 mya:
  - Some rocks trapped below ground become granite, quartz, emeralds, slate, & shale
  - Earthquakes are common





How did the Appalachian's form?: Step 6 : After the Collision

- 240 mya:
  - North American & African plates begin to separate again via seafloor spreading
  - Crust piled up on North America from the collision remains there = Appalachian Mts!
  - Atlantic Ocean starts to form

Changing the Appalachian Mountains: Erosion

- Erosion via wind, water, & ice affects the shape of the peaks
  - Originally high, steep, sharp
  - Now lower, gently sloped, rounded

Changing the Appalachian Mountains: Glaciers

- Glaciers in area 4 times in past 2-3 million years:
  - Cause climate change
  - Carve grooves into the mountains
  - Deposit sediment

Today's North Carolina

- Erosion of the peaks continues
  - Eroded material moves down the mountains into the Piedmont region but then stops at fall line
  - Fall line separates Piedmont & Coastal Plains

Today's North Carolina (Con't)

- Earthquakes
  - Very few occur
  - Less than 4.0 on the Richter scale
- Gold
  - Once produced the most of any state
  - Changed with California Gold Rush
- Emeralds
  - Still mined here
  - Many of the world's largest emeralds