



ANSWER KEY

Exercise: 1

Instructions: Most of the rock west of the Idaho batholith was formed from oceanic or island arc assemblages. These rocks were accreted or pressed to North America between the Late-Triassic and the Mid-Cretaceous time. This means that before Jurassic time, the West Coast of North America was situated near Riggins, Idaho. This exercise will show what can happen to the landscape over long periods of geologic time as plates in the earth's crust collide and surface features are pushed together. Answer the following questions using the Information you have learned.

1. Look at the map on the main page. Where was the West Coast of North America before the Jurassic time period? Before the Jurassic time period, the West Coast of North America was located near Riggins, Idaho.
2. How has the coast moved from its previous position to its present position? The west coast has moved since before the Jurassic time because rock has been added from oceanic or Island arc assemblages. This rock was formed offshore and has been accreted to North America between late Triassic and mid Cretaceous time. This accretion was caused as the Pacific plate collided with the North American plate and its surface features were pressed onto our Western coastline.
3. What does the Suture Line represent? What does the strontium isotope ratio have to do with this line? The Suture line represents where the accreted island arc assemblages were added to North America. The Strontium isotope line makes up this suture line because the plutonic rocks west of this line have lower ratios compared to the areas east of this line. This would suggest that each side of the line represents a different land mass that was formed at a different time.
4. What kinds of fossils have been found in the Oceanic Crust terrane? What does this tell us about where the Oceanic Crust terrane came from? Fossils from marine environments have been found in the Oceanic Crust Terrane. Some of these fossil species seem to be consistent with deep waters while some are consistent with shallow waters. This indicates that this sedimentary and metamorphic rock was formed underwater.
5. How was the Jurassic Flysch terrane formed? What evidence supports this explanation of how it was formed? The Jurassic Flysch is believed to have formed from the rapid deposition of mudstone and sandstone. It is believed to have been compressed against the arc by the oceanic terrane.
6. How was the Continent Island Arc Juncture, or suture zone formed? The continent-island arc juncture is believed to have formed from a convergent, right-lateral fault that ended up slicing away the edge of the continent. It then brought oceanic accreted terrane in from the Southwest.
7. What is the Idaho Batholith and how was it formed? The Idaho Batholith was formed by magmas generated from subduction of the eastward moving plate. The rising magma formed the Idaho Batholith. The batholith is a large mass of plutonic rock that cooled before it reached the Surface.
8. How are the four smaller terranes separated from each other? How do we recognize the boundaries between them? The four smaller terranes are separated by unconformities and faults and were intruded by plutons from the late Jurassic and early Cretaceous time periods. These faults are used to separate these terranes.