

PLATE MOTION

Grade 8 Science | Free One Page Study Guide

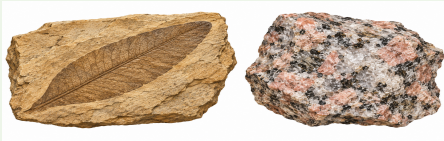


Read | Annotate | Find evidence | Analyze | Eliminate and justify

1 Reconstruct a past connection

LA 8-MS-ESS2-3
NGSS MS-ESS2-3

Glossopteris fossil + granite



F: matching leaf fossils

R: matching granite

What we did. We compared matching Glossopteris leaf fossils, matching granite and land shapes.

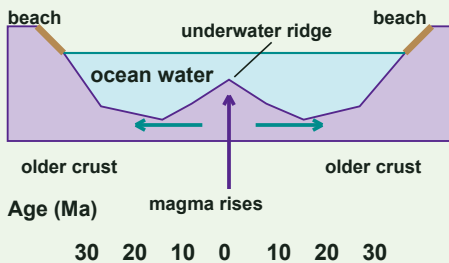
Why it works. Matching leaf fossils and granite with matching supplied ages/characteristics support past connection.

Apply what you know. Why use two matching patterns instead of shape alone?

2 Track seafloor away from a ridge

LA 8-MS-ESS2-3
NGSS MS-ESS2-3

Ocean cross-section



What we did. We moved strips outward from the ridge. Ages are supplied in Ma (million years ago).

Why it works. New crust forms near 0 Ma at the ridge. Ages increase outward: 10, 20, then 30 Ma on BOTH sides.

Apply what you know. What pattern would you look for on BOTH sides?

3 Connect movement and surface change

LA 8-MS-ESS2-2
NGSS MS-ESS2-2

Converging continental areas



Simplified collision model;
not to scale or real time.

What we did. We modeled relative motion and labeled a resulting surface feature.

Why it works. Slow convergence can build a broad mountain belt; rapid fault slip can also occur.

Apply what you know. Contrast the time scale of those two changes.

4 Use strata to organize Earth history

LA 8-MS-ESS1-4
NGSS MS-ESS1-4

D 25 Ma: Cenozoic

C 100 Ma: Mesozoic

B 450 Ma: Paleozoic

A 600 Ma: Precambrian

What we did. We ordered an undisturbed sedimentary column with supplied ages.

Why it works. Layer order gives relative age; numerical ages require other evidence. The time scale organizes this history.

Apply what you know. Name the oldest layer. Why does thickness alone not give its age?