

ROCK TRANSFORMATIONS

Grade 8 Science | Free One Page Study Guide



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

1 Use rock formation evidence

LA 8-MS-ESS2-1
NGSS MS-ESS2-1



Granite

Sandstone

Illustrations; not to scale.

What we did. We sorted rock cards using the supplied process evidence.

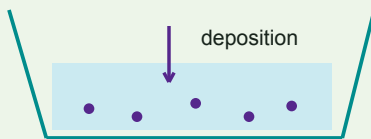
Why it works. Granite formed from cooled molten material. Sandstone formed from bound sand grains.

Apply what you know. Why use formation evidence as well as appearance?

2 Follow moving and settled sediment

LA 8-MS-ESS2-1
NGSS MS-ESS2-1

Cup model: particles settle



Settled sand is still sediment.
No mineral cement was added.

What we did. We stirred sand in water, stopped and recorded actual settling.

Why it works. Gravity helps deposition. Burial can compact grains; mineral cement later binds them into rock.

Apply what you know. Which steps are missing before settled sand becomes sandstone?

3 Distinguish solid change from melting

LA 8-MS-ESS2-1
NGSS MS-ESS2-1

Existing limestone

↓ metamorphism:
heat + pressure

Marble: changed while solid

Metamorphic: remained solid.
Igneous: magma/lava cooled and solidified.

What we did. We bent paper while it stayed solid and compared it with supplied rock evidence.

Why it works. The paper models deformation, not heat or mineral reactions. Metamorphic rock changes while solid.

Apply what you know. Why does squeezed paper not prove that pressure alone makes marble?

4 Model material and energy pathways

LA 8-MS-ESS2-1
NGSS MS-ESS2-1

EXPOSED ROCK

↓ Weathering; erosion
and transport

SEDIMENT

↓ Deposition; compaction
and cementation

SEDIMENTARY ROCK

What we did. We built a network, added another route and revised process/driver labels.

Why it works. Sun-powered surface processes, gravity, internal heat and cooling help drive material changes.

Apply what you know. Add one surface driver and one deep-process driver to your model.