

Sedimentary rocks form from sediments deposited by water, wind, or ice. The sediments result from physical and chemical weathering of other rocks—any variety of rock. The deposited sediments eventually may be cemented together into a new sedimentary rock.

Sandstone is a sedimentary rock that starts out as a sand dune, sandy beach, or other sand deposit. The sand comes from weathered rocks. Once the sand accumulates, a matrix such as silica or calcite may cement the sand grains together, forming sandstone.



*This sand from a dune in Israel could become a sandstone if a matrix glued the grains together. This image is magnified 10 times.*



*This sandstone may have formed from sand deposited in a sand dune.*

Metamorphic rocks form through recrystallization of other rocks with no melting involved. (When they melt and then cool, new igneous rock forms.) It takes heat and pressure to make a metamorphic rock.

Heat can come from magma underground or from pressure when rocks are buried under a lot of sediments or other rocks. When rocks are buried, the tremendous pressure heats up the rocks at the bottom just enough to change and move the minerals in the original rock. For example, if a sandstone were buried deep within Earth, the quartz grains could begin to soften and blend together a bit. The metamorphic rock quartzite could form.



*This quartzite was formed from sandstone. The sand grains have fused together. This is a very tough rock.*