Over millions of years, igneous rocks are weathered by the forces of wind and water, and transform into small rock particles that are carried to the bottom of lakes and oceans. Slowly, the layer of sediment grows deeper and deeper, reaching depths of thousands of meters. The immense weight of all the sediment pushes downward on to lower layers with tremendous force. This process, combined with minerals that act like cement or glue, bond the sediment together to form sedimentary rock.

### GRAND CANYON

A famous example of a large canyon formation is the Grand Canyon in Arizona, USA. The largest desert canyon in the world, this is made up of a thick stack of sedimentary layers that started forming almost two billion years ago.

- **Kaibab limestone**: The youngest layer, made of tiny seashell fossils.
- **Toroweap sandstone**: Formed from sand deposited as the sea rose over the Coconino desert.
- **Coconino sandstone**: Formed from desert sands when the sea was at its lowest.
- **Hermit shale**: Formed when rivers carried silt and mud onto a delta floodplain.
- **Supai group**: Formed when sea shallows and rivers brought mud and sand on top of earlier limestone.
- **Redwall limestone**: Formed as the shells of tiny creatures that died on the seafloor slowly built up over time.
- **Temple butte limestone**: When the sea was at its highest level, life flourished in the warmer water.
- **Muav limestone**: When the sea completely flooded the land, tiny sea shells were deposited.
- **Bright angel shale**: Formed from fine grains of silt and mud when the sea level rose over the Tapeats beaches.
- **Tapeats sandstone**: The remains of a sandy beach that formed as the sea rose over the eroded Vishnu landscape.
- **Vishnu schist**: The oldest rock layer, formed when mountain ranges were pushed up after two continents collided 1.8 billion years ago.

### Test it out

Find out how rivers can erode the landscape: