Geologists studying the jumbled bedrock of the west coast of North America needed a theory to explain how so many diverse sets of unrelated rocks existed all together.

In geology, **terrane** names a group of rocks which share a similar history. It is distinct in meaning from the similar sounding (and more commonly used) word ‘terrain’.

The word ‘terrain’ refers to the lay of the land, elevation, slope, and orientation of features.

Both terrane and terrain contain the root *terra* ("earth"). The second e of terrane reflects the eons over which these processes occur.

When overlaying the present-day map, we see most of North America had not yet formed (as we know it!).

Meet: proto-North America 600 million years ago

The core of older rocks that existed

When overlaying the present-day map, we see most of North America had not yet formed (as we know it!).

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With thanks to the National Park Service and Geologic Society of America.
It is only through imagination and diligent detective work that we can imagine how the pieces once fit together.

The bright color overlays represent ‘exotic terranes,’ groups of rocks that formed separately from North America and were welded on to the continent between 400 and 100 million years ago.

Each colors represents rocks of different types and ages.

- North American Craton (oldest part of the continent)
- The Western Cordillera (material added onto the continent before and during the time of the dinosaurs)
- Deformed continental rocks
- Coastal plain sedimentary rocks (the youngest ‘land’ to form)

For example, in the Klamath Mountains of north-western California, 600 million year old cyclomedusoid fossils give clues that rocks there traveled exceptional distances over the course of geologic time before they were sutured, or accreted, to North America.

In the science of ‘paleo-geography’, geologists reconstruct how tectonic plates moved land around in the geologic past.