Visual Aids
California Education and the Environment Initiative

Science Standard 6.2.b.

The Dynamic Nature of Rivers
California Education and the Environment Initiative
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The Education and the Environment Initiative Curriculum is a cooperative endeavor of the following entities:
California Environmental Protection Agency
California Natural Resources Agency
California State Board of Education
California Department of Education
Department of Resources Recycling and Recovery (CalRecycle)

Key Partners:
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VA #1 The Sacramento-San Joaquin River Delta

The Sacramento-San Joaquin River Delta

Coastal Range

Sierra Nevada

Great Central Valley

Carquinez Strait

San Francisco Bay

PACIFIC OCEAN

0 25 50 Miles
VA #3 Delta Slough
VA #4 The Benefits of Rivers: Irrigation
VA #5 The Benefits of Rivers: Recreation
The Benefits of Rivers: Soil Renewal

VA #6 The Benefits of Rivers: Soil Renewal
VA #7 The Benefits of Rivers: Power Generation
VA #8 The Benefits of Rivers: Transportation
VA #10 The Benefits of Rivers: Drinking Water
VA #11 Meandering River
The water in a river channel flows faster round the outside bend of a river…

...than on the inside bend of the river.

Faster flowing water on the outside bend erodes the river bank.

Slow moving water deposits sand and mud on the inside bend.

Where the river bank is being eroded, a steep river cliff is created.

The river continues to erode and deposit material. Eventually the curves of the river channel become very close.

The deposited sand and mud creates a river beach or slip-off slope.

The old course of the river channel becomes an oxbow lake. This lake soon dries out.

The river breaks through this thin barrier. The water no longer flows round the meander but straight along the new channel.
VA #14 Houses on the Floodplain: 1960
VA #15 Houses on the Floodplain: 1965
VA #16 Houses on the Floodplain: 1970
VA #18 Houses on the Floodplain: 1980
VA #19 Houses on the Floodplain: 1985
VA #20 Houses on the Floodplain: 1990
Smith River near Crescent City

Data from January 1, 2006, through January 1, 2007. Duration: 366 days
Max. of period: (Jan. 11, 2006, 00:45, 25.38 feet) Min. of period: (Sept. 17, 2006, 16:00, 5.0 feet)
VA #22 Flow in Two California Rivers: Merced Data

Merced River at Pohono Bridge

Data from January 1, 2006, through January 1, 2007. Duration: 366 days
Max. of period: (May 17, 2006, 12:16, 11.3 feet) Min. of period: (Nov. 7, 2006, 8:15, 1.32 feet)