LOUISIANA STATE UNIVERSITY

Make a Louisiana Geological Map

Materials
For each student:
- cup of silty-sand
- cup of gray mud
- cup of red mud
- glue
- foam paint brush
- blank map of Louisiana
- Geologic map of Louisiana

Suggested grade levels
2nd-5th, 8th

Louisiana GLEs
Grade2: SI 1, 2, 3, 4; G 2
Grade 3: SI 1, 2, 3, 4, 5, 6; ESS 45, 50
Grade 4: SI 1, 2, 3, 4, 7; ESS 62
Grade 5: SI 1, 2; ESS 31
Grade 8: all Earth Sciences

Adapted from
Jennifer Whittington, M.Sc. LSU Geology department

Maps available from
http://www.intersurf.com/~chalcedony/geomap1.html

References
Louisiana Geological Survey- http://www.lgs.lsu.edu/

Louisiana geology resources- http://geology.com/states/louisiana.shtml


Dr. Ting (standing) with field jacket holding 5 million year old mastodon tusk from the Tunica Hills.

In this activity, students will learn how to interpret a geologic map. They will use sediments to draw a Louisiana map.

Background

Geologic maps, like all maps, are designed to show where things are located. Geologic maps, however, do not show man-made features such as roads and county boundaries. They are designed to show the distribution of geologic features, including different rock types and/or faults, in an area. The geology is shown on the map by different colors, lines, and special symbols unique to geologic maps. A geologic map is most unusual compared to other maps because of the wide array of colors on the map. Each color represents a different geologic unit. A geologic unit is a certain kind of rock with a certain age range. For instance, on the Louisiana map, the gray rock type represents Holocene Alluvium. These are sand and clay riverine deposits that have been deposited in the last ~11,000 years. Most of the geologic sediments exposed on the surface of Louisiana are predominantly composed of these recent sediments deposited from the Mississippi, Ouachita, Red and other rivers and within coastal marsh environments. The Tertiary deposits (~65 Ma), also make up a large portion of sediments found in Louisiana. These are associated with preexisting river flood plains, coastal plains, and shallow sea environments that dominated the land due to fluctuating sea level.

Procedure

1. Discuss the Louisiana Geologic map. Determine what the colors represent on the map (i.e. gray = Holocene Alluvium). Which deposits are oldest? Youngest?
Make sure the students understand that the rivers carry and deposit mostly finer-grained mud in Louisiana.

2. Pass out a cup of silty-sand, a cup of mud, glue, paint brush, and blank map of Louisiana to each student.

3. Tell them to paint the rivers with the appropriate mud.

4. Next, spread glue on the remaining parts of the map. Sprinkle sand on the glue, shake off excess, and allow to dry. Now, you have a simplified Louisiana geologic map.

Discussion

1. Why do you think there are not a lot of sediments older than 65 Ma? What does this tell us about the history of Louisiana?
2. What types of fossils do you think can be found in Louisiana? Where?


Louisiana

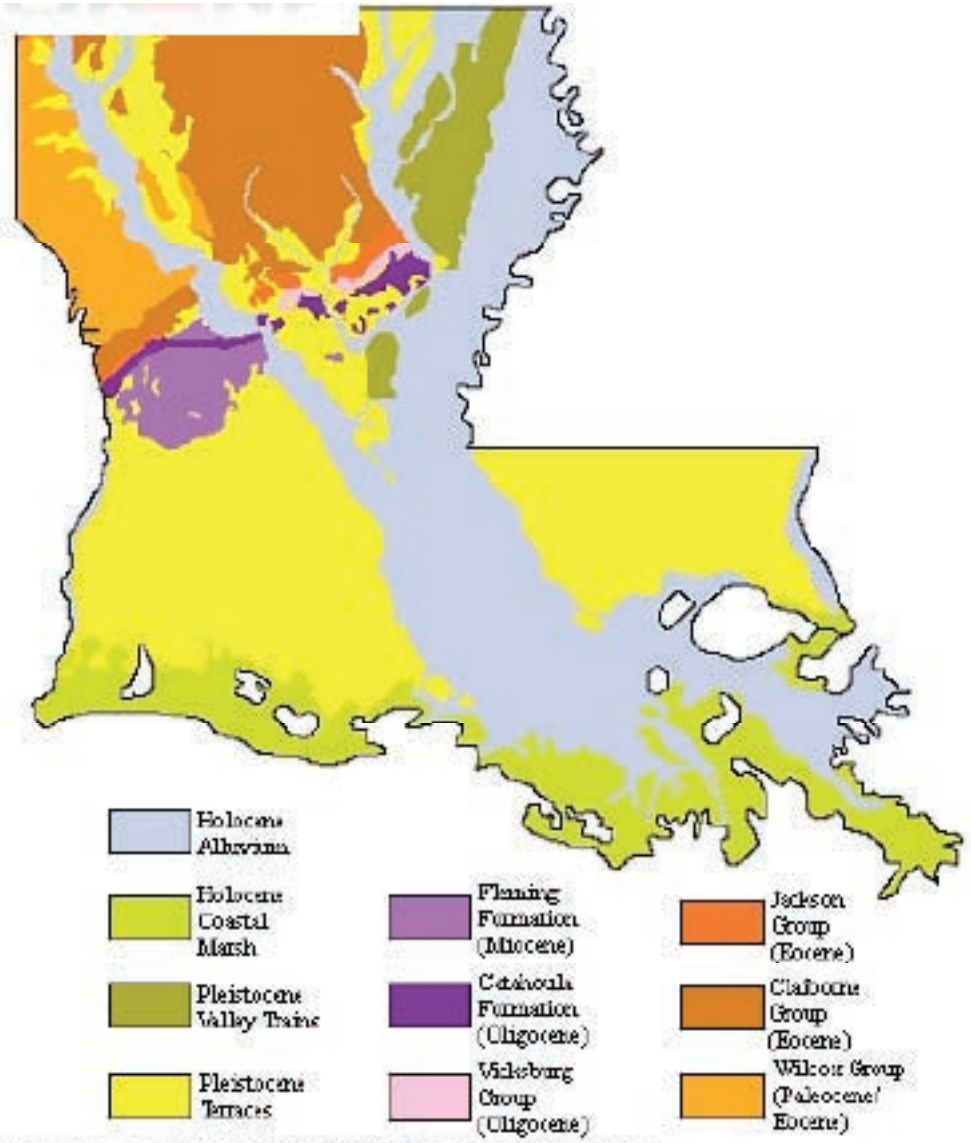

Image courtesy Gulf of Mexico Program