

# 5.4

## CHARACTERISTICS OF DEPOSITIONAL ENVIRONMENTS

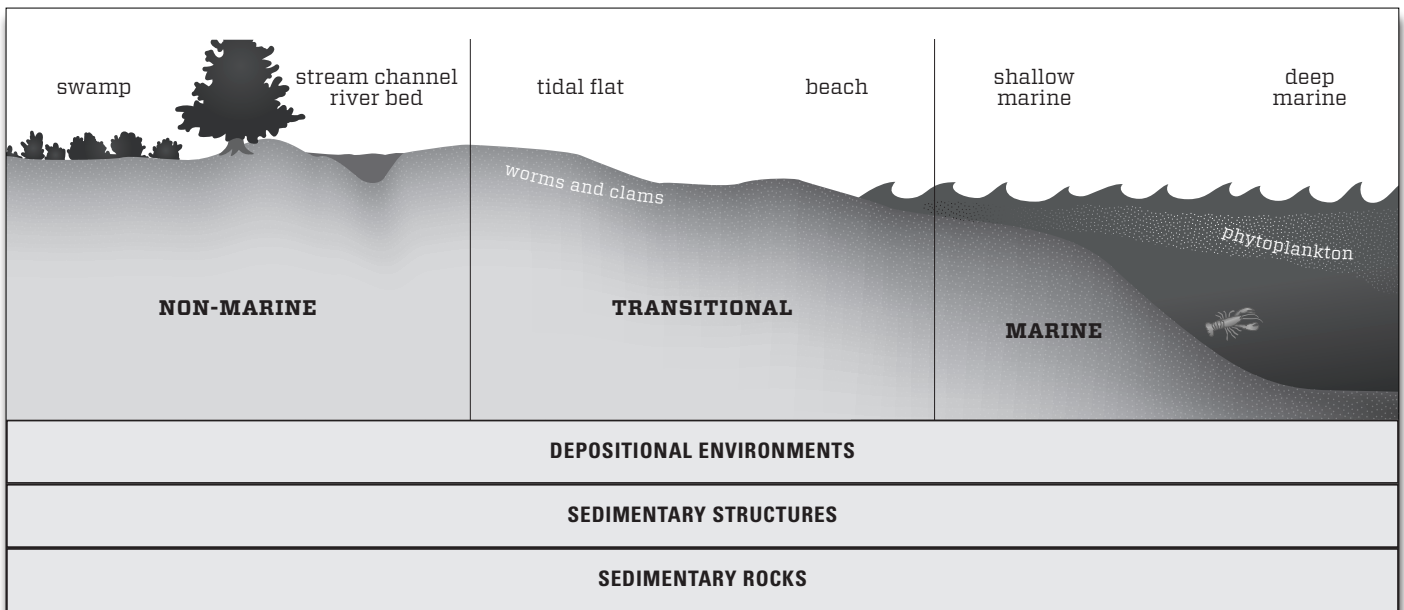
How do sediments, organisms, structures, and rocks vary between depositional environments?

### MATERIALS

- 2 sheets of 8.5 × 11 paper
- Stapler
- Or use completed example on pages 77-80

### DIRECTIONS FOR BLANK ORGANIZER

1. Layer, in one-inch increments, two sheets of paper.
2. Fold backwards leaving one-inch flaps of paper when viewed from the front.
3. Staple at top of fold.
4. Use one flap for each item.
  - Nonmarine/transitional/marine
  - Depositional environment sediments
  - Organisms and sedimentary structures
  - Sedimentary rock types
  - Page 1: Complete drawing with students on front flap of flip book separating it into 3 panels (Nonmarine/Transitional/Marine) (see below).
  - Pages 2-4: Use pages 77-79 to complete flip book.



Depositional environments	Sediments	Depositional environments	Sediments	Depositional environments	Sediments
River channel	Gravel, sand, mud, variable sorting/rounding	Beach	Gravel, sand, muds, carbonates, well sorted/rounded	Shallow marine	Sands, muds, carbonates, well sorted/rounded
Flood plain	Muds, sands, well sorted	Lagoon/tidal flat	Muds	Reef	Gravel, sand, mud, carbonates, variable sorting
River delta	Muds, sands, well sorted			Deep marine	Muds, carbonate and siliceous ooze

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Depositional environments	Sediments	Depositional environments	Sediments	Depositional environments	Sediments
Playa	Evaporates, mudstones				
Lake	Mudstones, sandstones, limestones				
Glacier	Till, conglomerates				

**SEDIMENTARY ROCKS**

Depositional environments	Sediments	Depositional environments	Sediments	Depositional environments	Sediments
River channel	Conglomerates, sandstones, mudstones	Beach	Conglomerate, sandstone, mudstone, limestone, coquina	Shallow marine	Sandstone, mudstone, limestone
Flood plain	Mudstones (red beds), sandstones	Lagoon/tidal flat	Mudstones (green, black, not red)	Reef	Limestone breccia, sandstone, mudstones
River delta	Sandstones, mudstones			Deep marine	Mudstone, limestone, chert
Alluvial fan	Breccia, arkose sandstone				
Desert dune	Sandstones				

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Depositional environments	Sediments	Depositional environments	Sediments	Depositional environments	Sediments
Alluvial fan	Gravels to sands, poorly sorted, angular				
Desert dune	Sand well sorted/rounded				
Playa	Evaporates, muds				
Lake	Mud, sand, carbonates				
Glacier	Gravel, angular, poorly sorted				

**DEPOSITIONAL ENVIRONMENTS**

Depositional environments	Sediments	Depositional environments	Sediments	Depositional environments	Sediments
River channel	Land/freshwater plant and animal fossils, crossbeds, ripple marks, graded beds, mud cracks	Beach	Marine/nonmarine plant/animal fossils, ripple marks, crossbeds, abundant fossils, fossil fragments	Shallow marine	Marine/nonmarine plant/animal fossils, bedding, cross beds, ripple marks, abundant marine fossils
Flood plain	Land/freshwater plant and animal fossils, graded beds, mud cracks, ripple marks	Lagoon/tidal flat	Marine/nonmarine plant/animal fossils, trace fossils, bedding, ripple marks, abundant marine fossils	Reef	Marine/nonmarine plant/animal fossils abundant
River delta	Land/freshwater plant and animal fossils, graded beds, mud cracks, ripple marks	Deep marine	Weird marine plant and animal fossils abundant		
Alluvial fan	Land plant/animal fossils				

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Depositional environments	Sediments	Depositional environments	Sediments	Depositional environments	Sediments
Desert dune	Small insects/reptiles, sparse plant fossils, cross beds, ripple marks, trace fossils				
Playa	Mudcracks, ripple marks, trace fossils				
Lake	Land/freshwater plant/animal fossils graded beds, ripple marks, abundant fossils				
Glacier	Sparse plant/animal fossils				

**SEDIMENTARY STRUCTURES**

fold and staple

