Lab 5

Age Relations & Unconformity

Rock Units & Time-Rock Units

Eric Z. 03/10/2020

Lab 5

- Age Relations and Unconformity
  - Principles of
    - 1) superposition
    - 2) cross-cutting relationship
    - 3) inclusion
- Rock Units and Time-Rock Units
  - Rock unit: **a rock body** <unique> composition, texture, color, or structural features
  - Time-rock unit: **rock bodies** <a certain time period> synchronous lower and upper boundaries.

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Old

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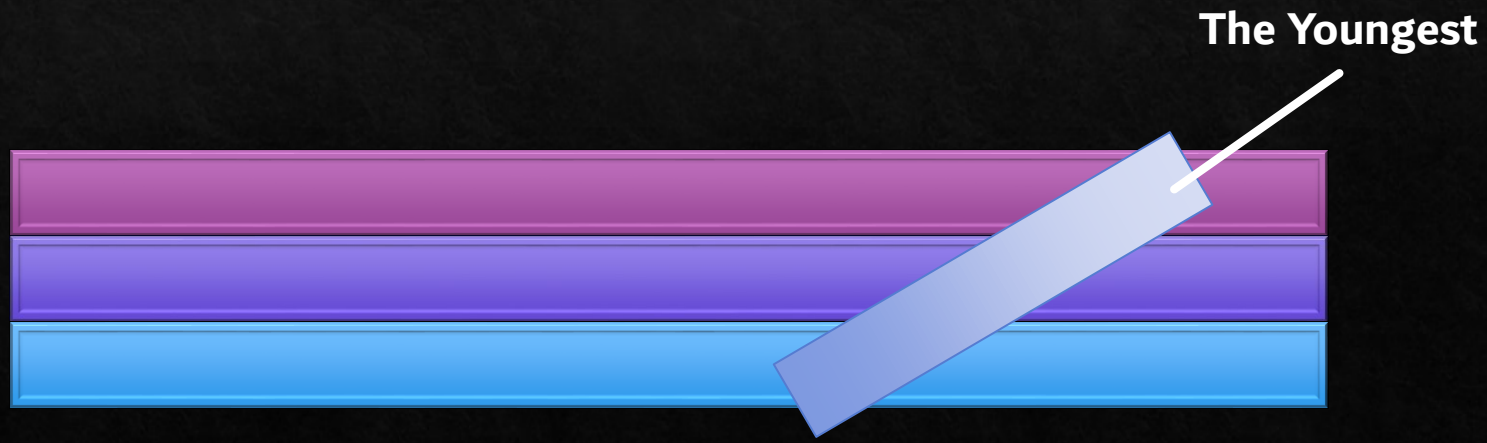

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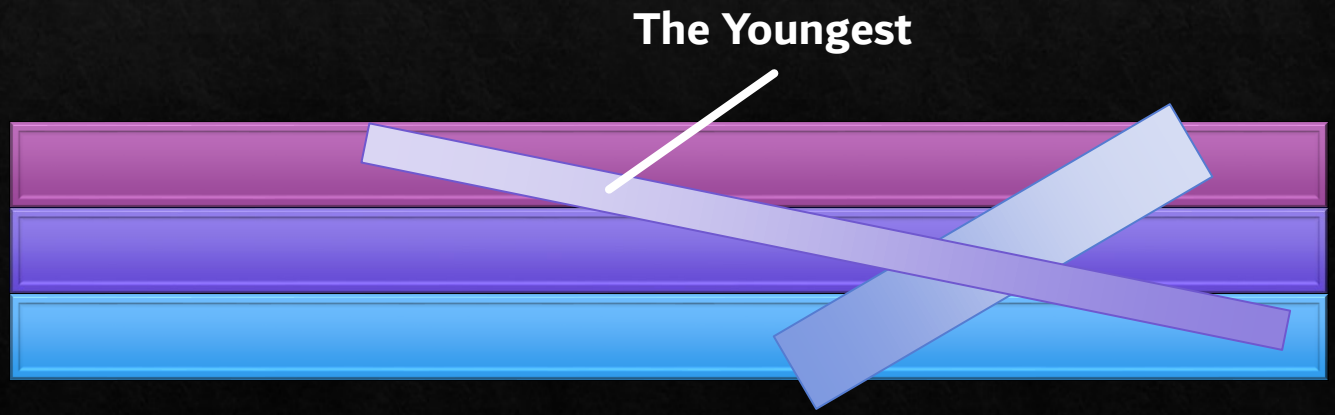

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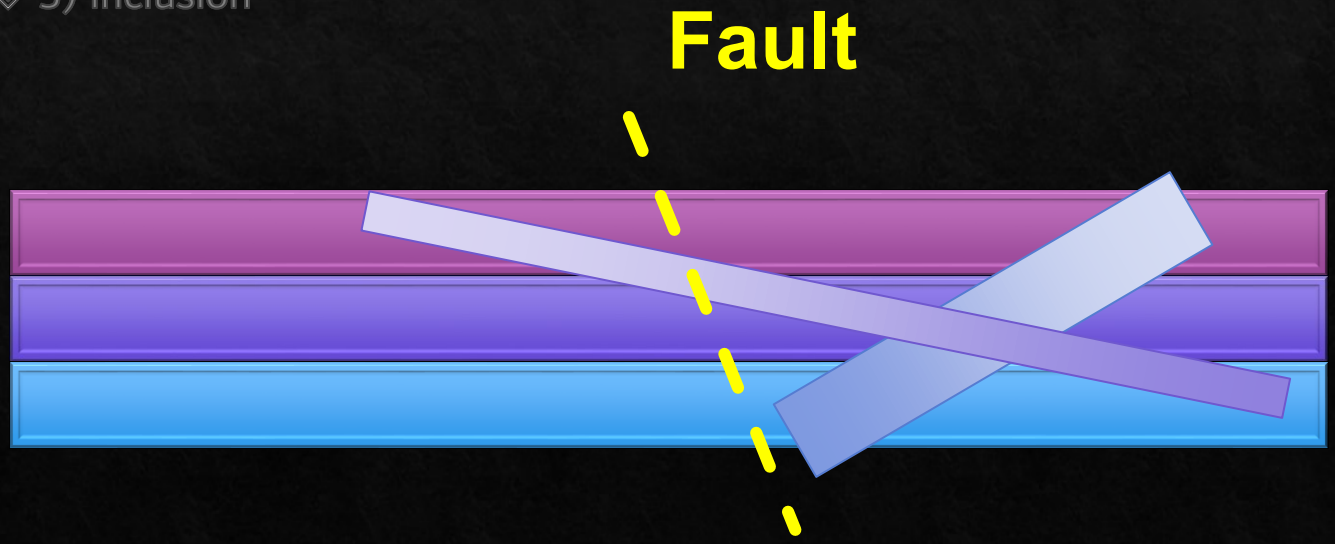

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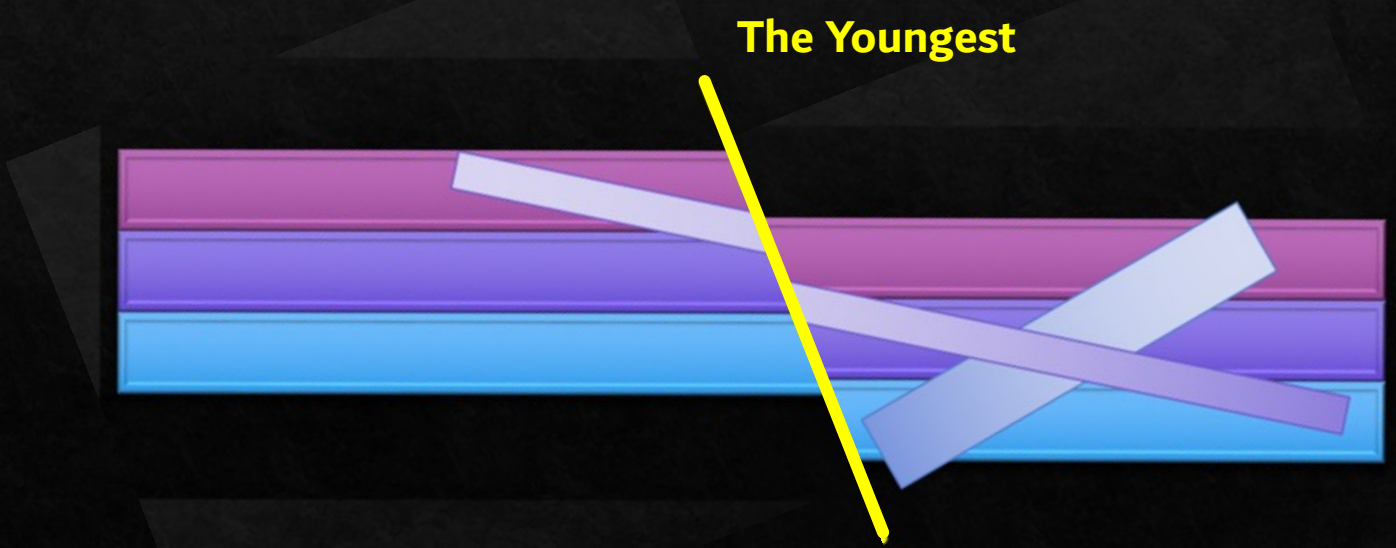

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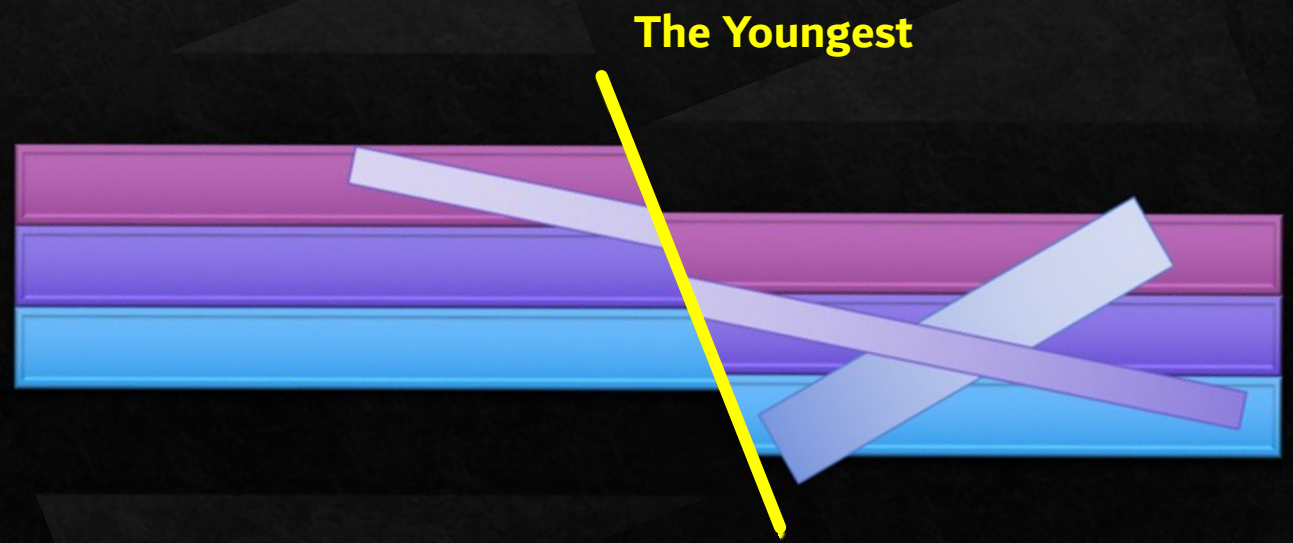
"Is it normal?"



Tips: fault

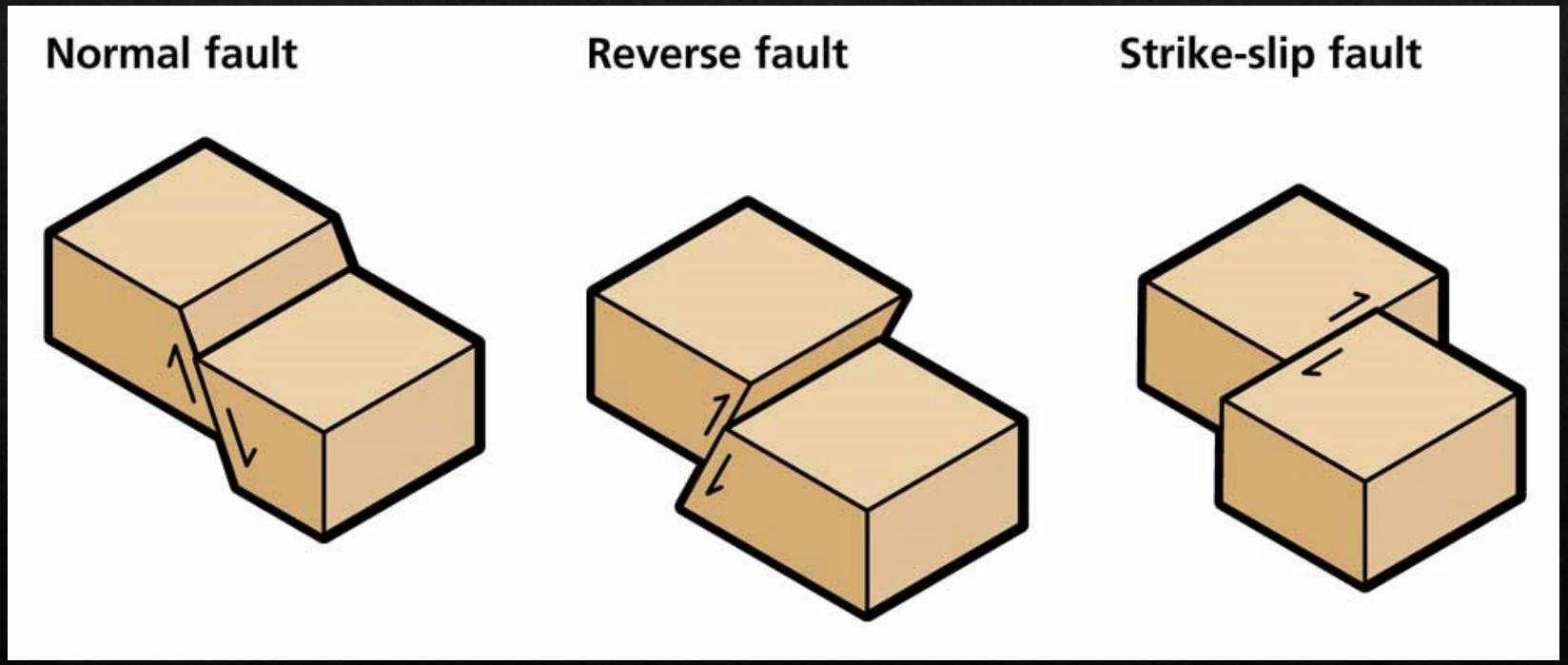


Photo credit: British Geological Survey

Tips: fault

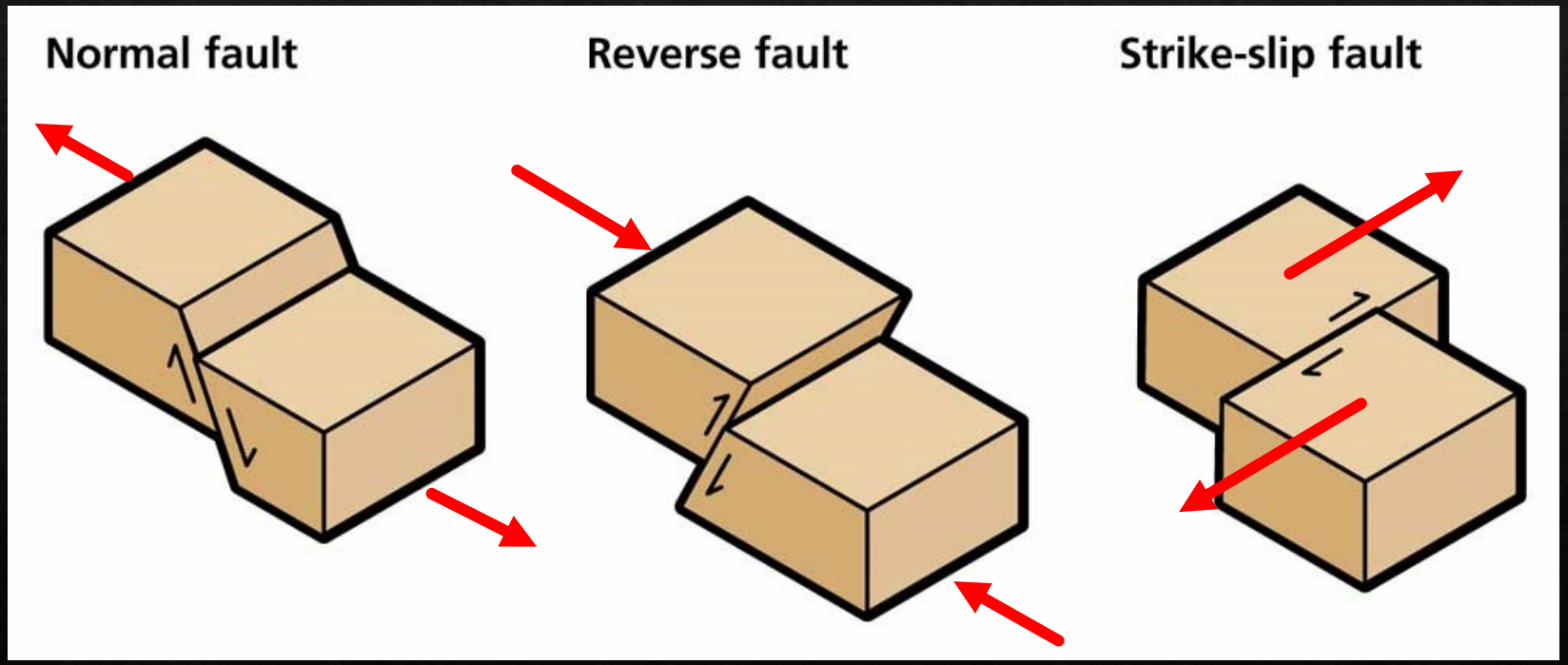


Photo credit: British Geological Survey

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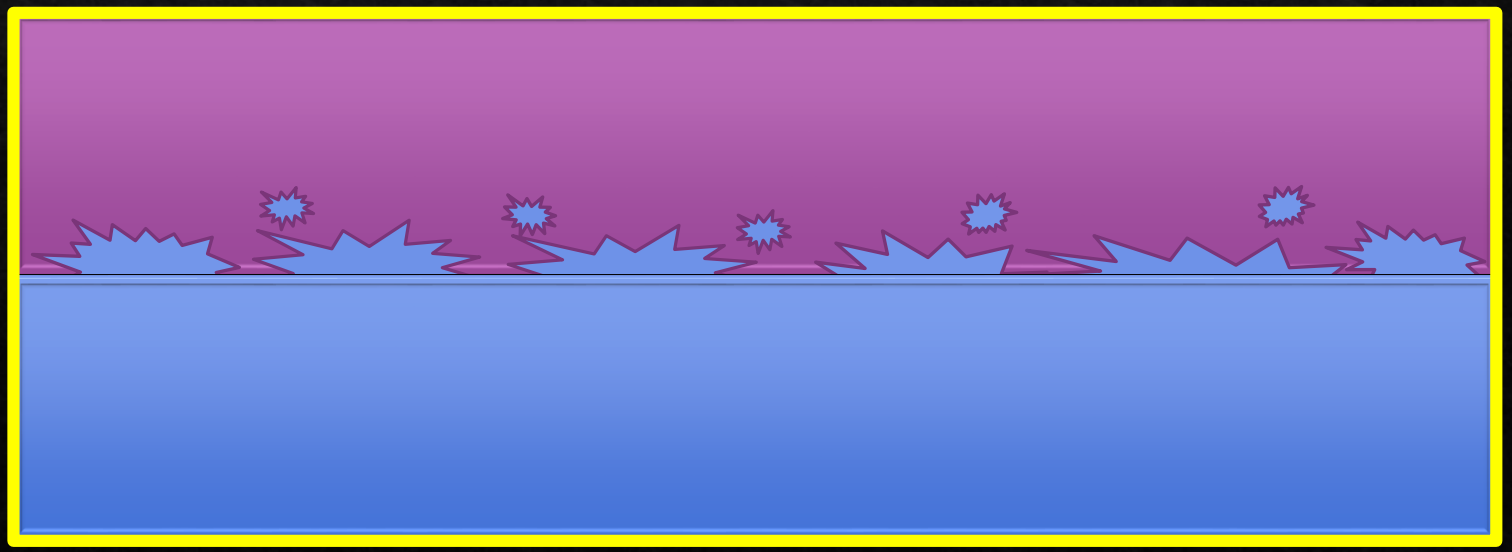
If a rock body contained fragments of another rock body, it must be younger than the fragments of rock it contained. The intruding rock must have been there first to provide the fragments.



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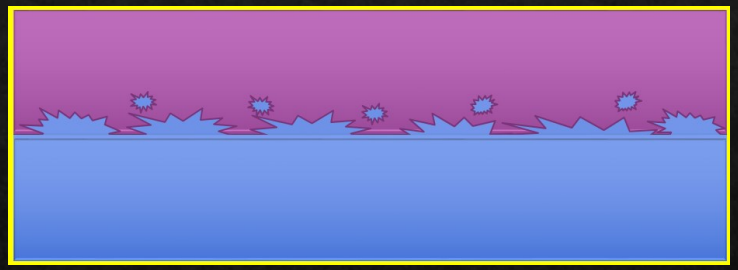

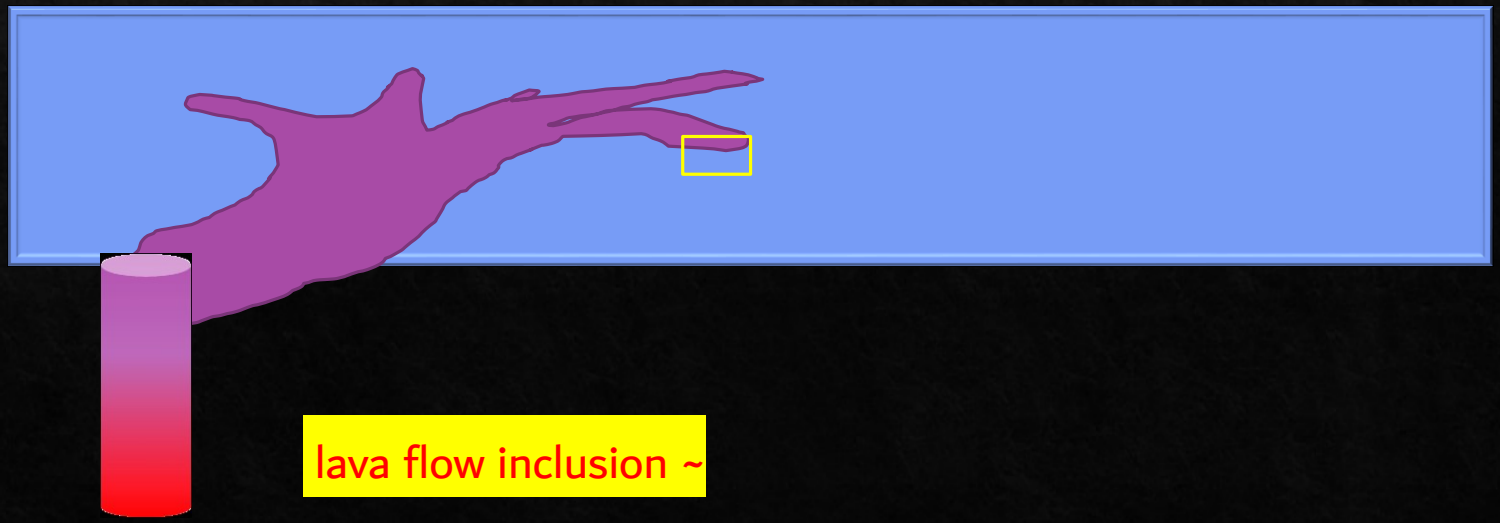

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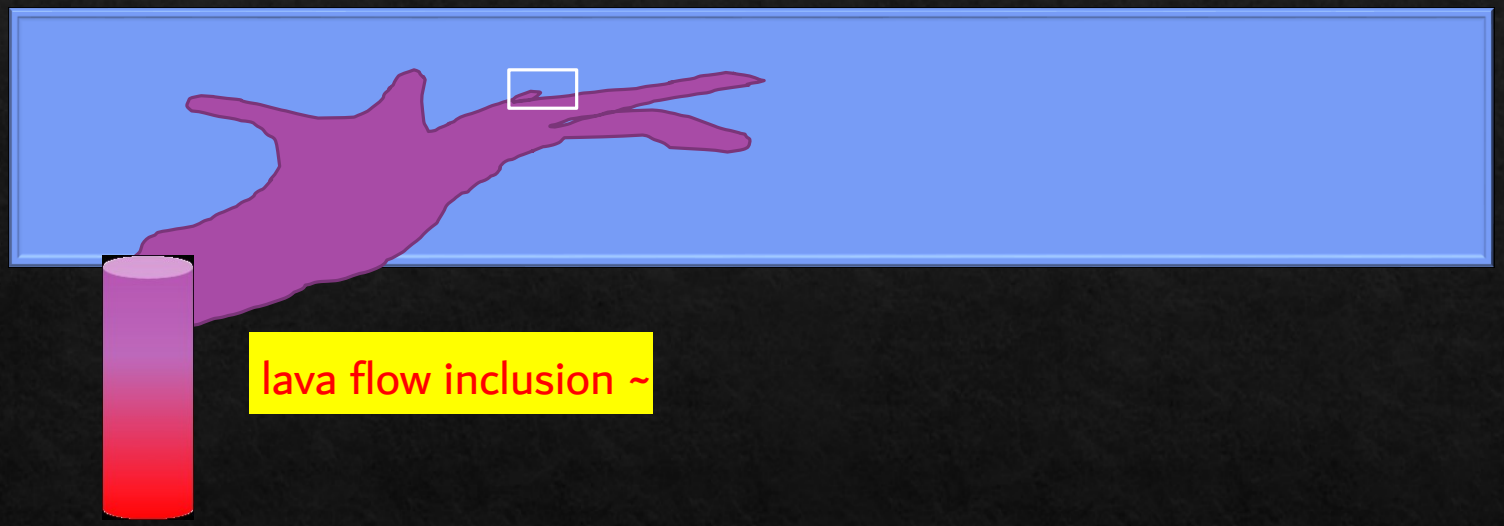

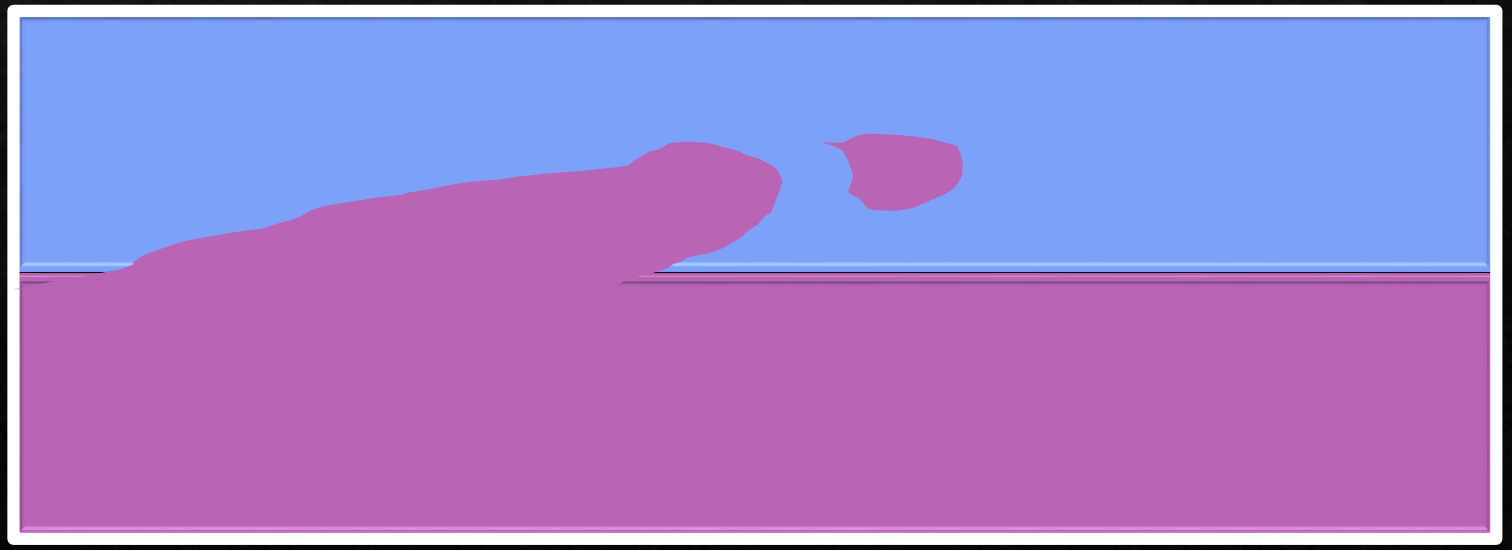

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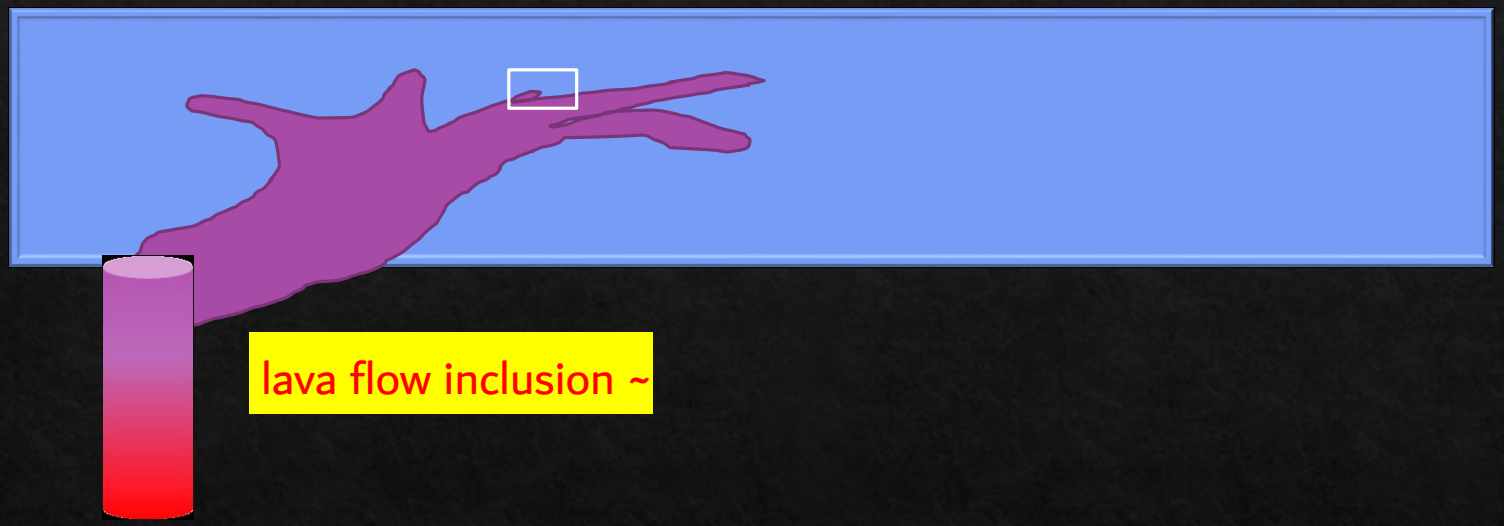

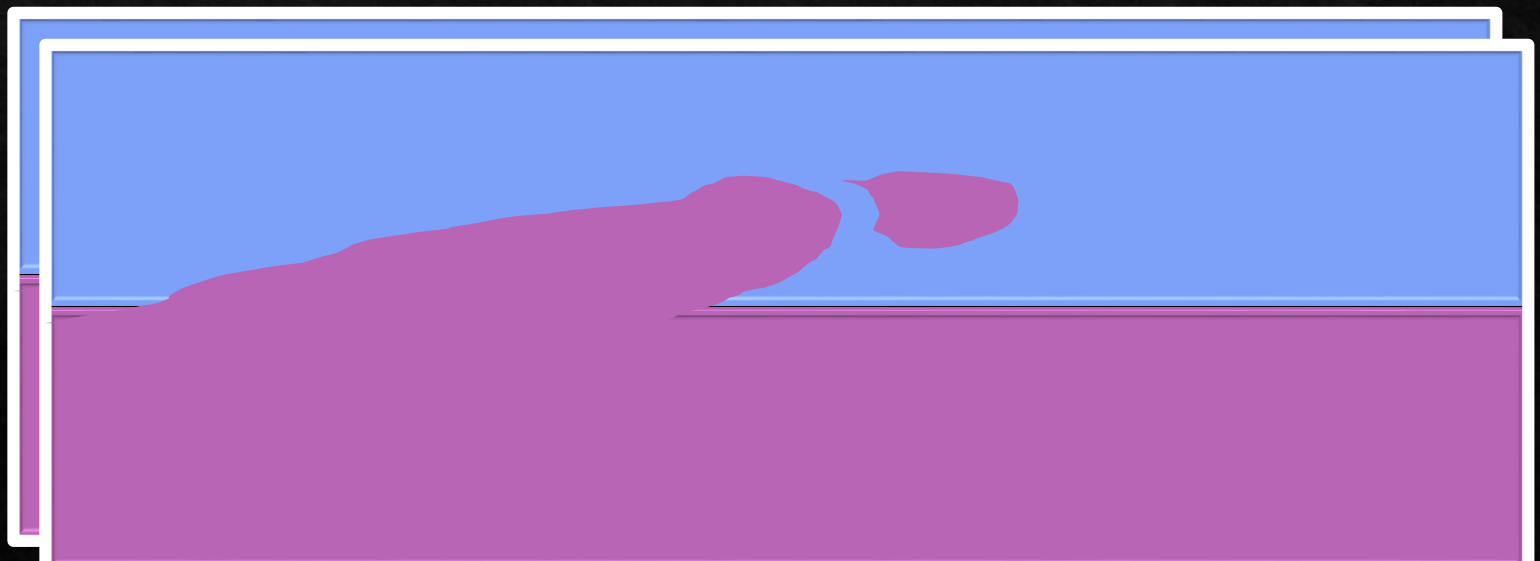

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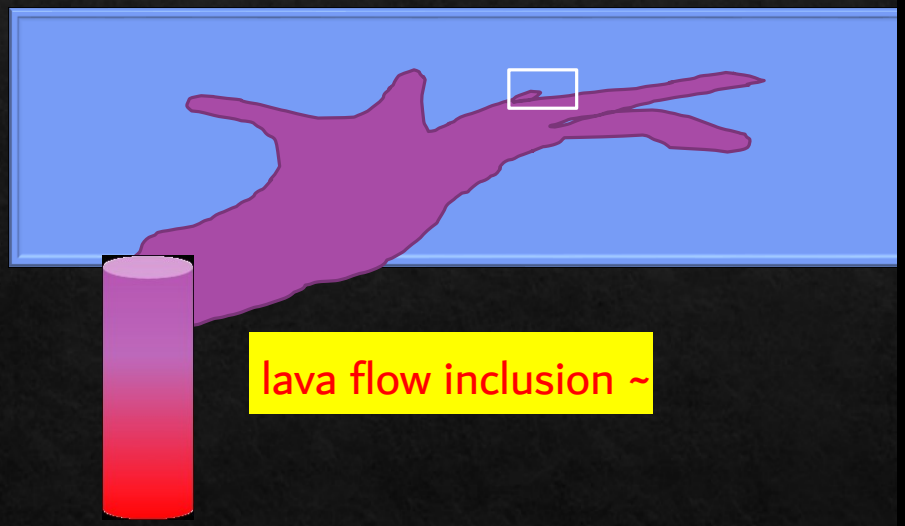
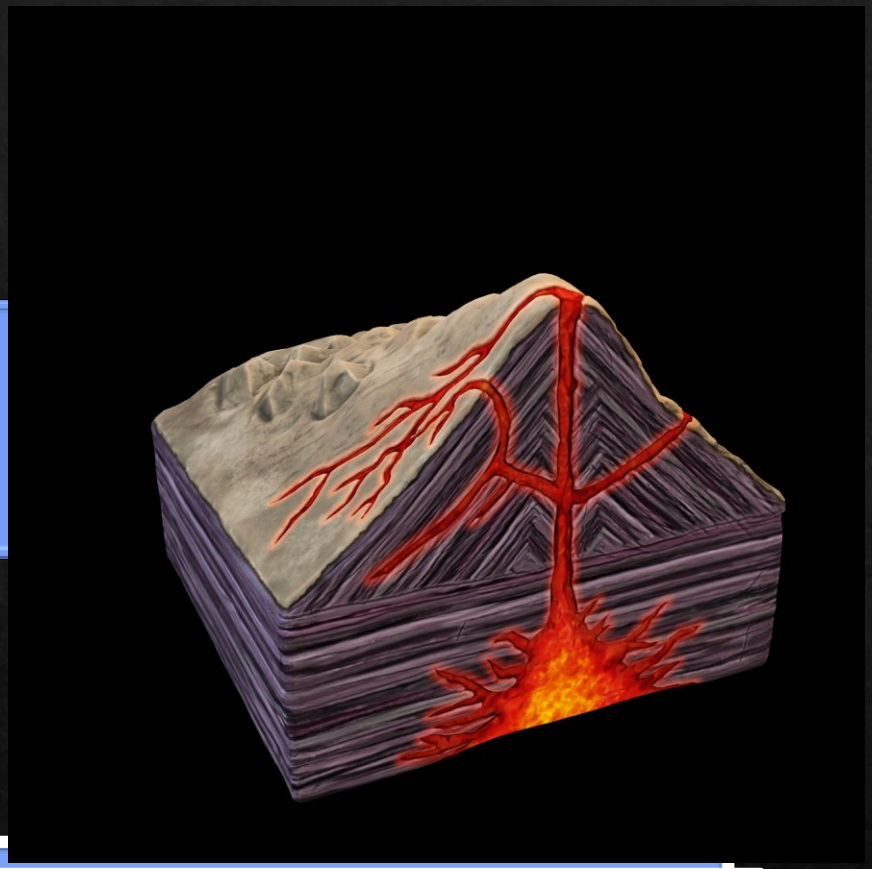
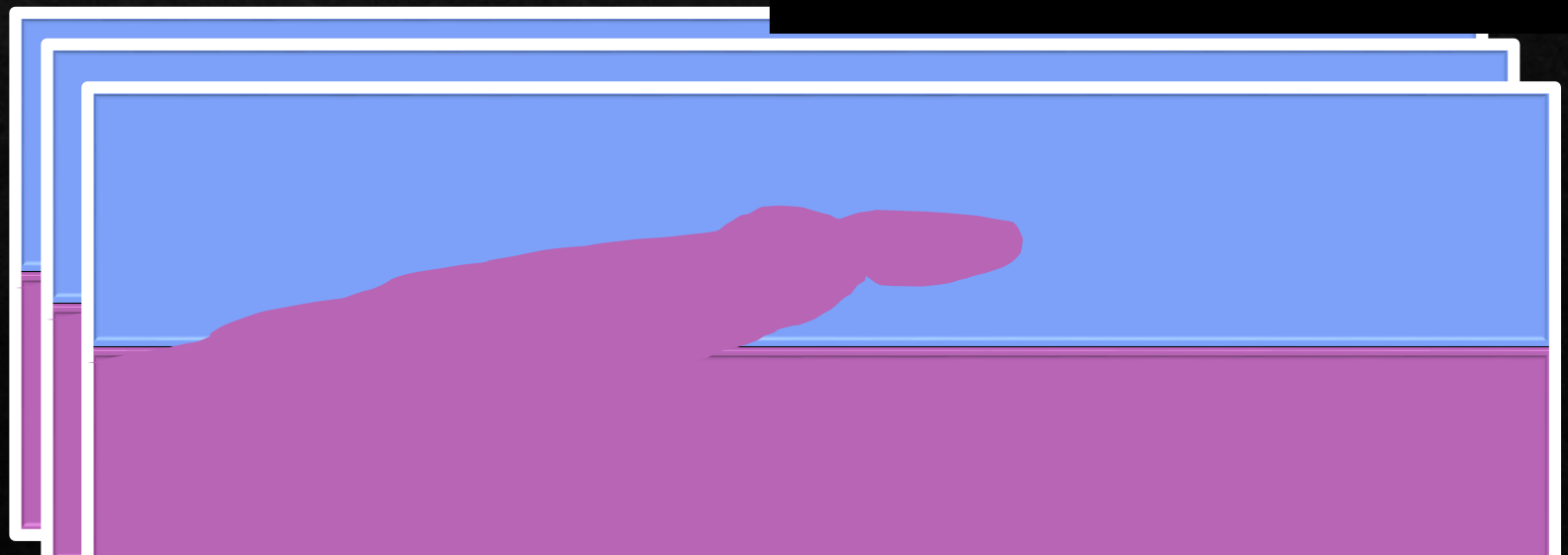
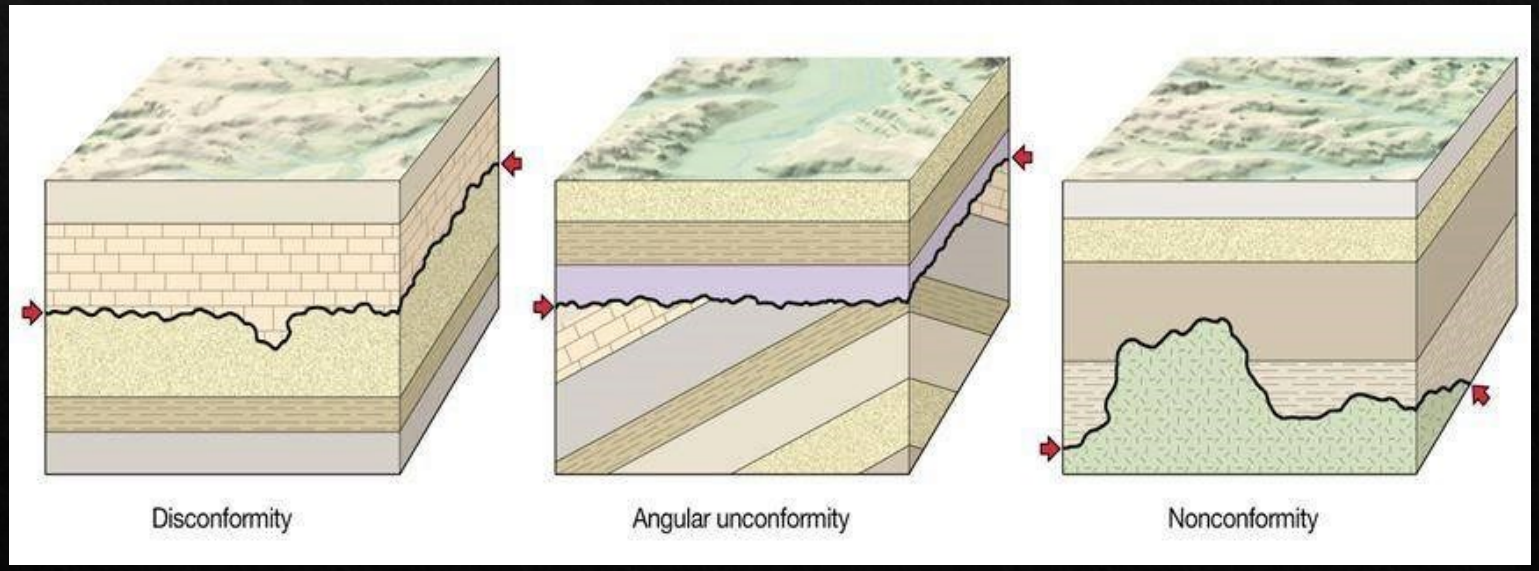






Lab 5

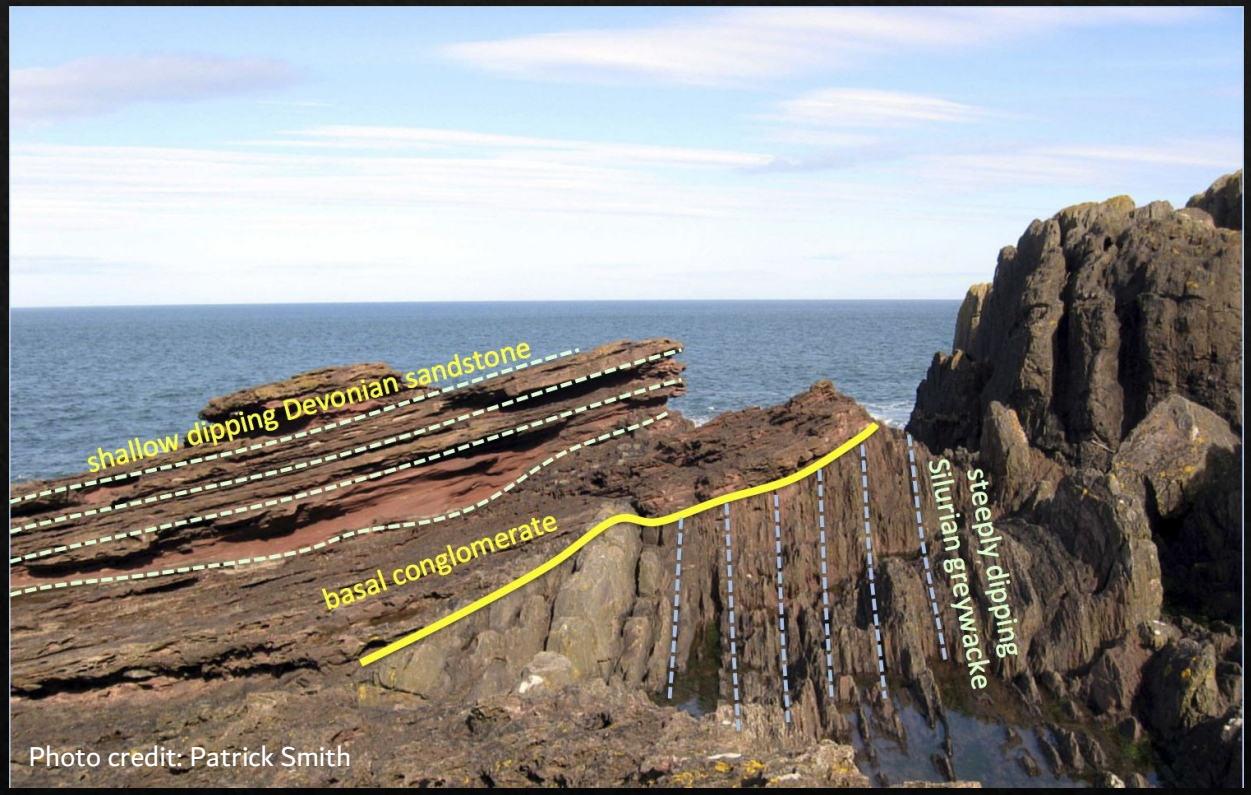
- Unconformity:
  buried erosional or non-depositional surface
  separating two strata of different ages
  - Disconformity, angular unconformity, nonconformity, etc.



Parallel strata Tilted Intrusive igneous/ metamorphic rock

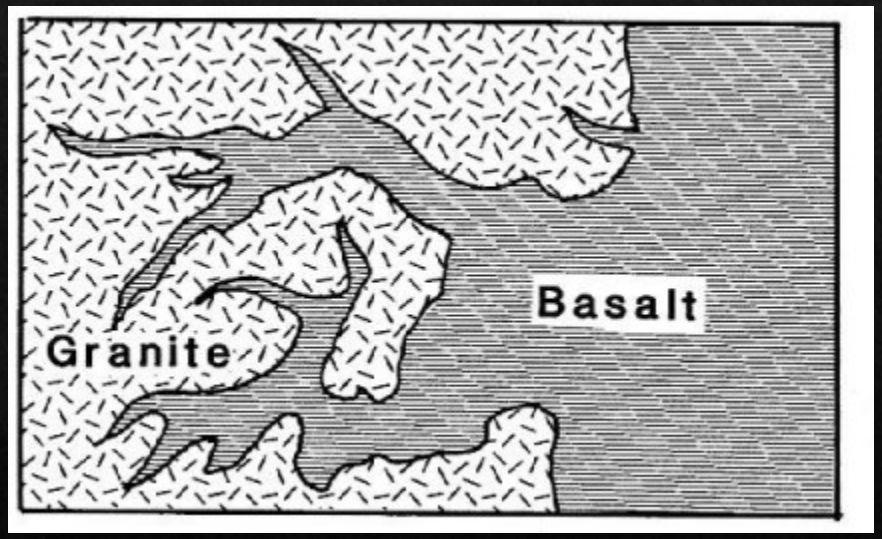
Unconformity

Desert
Devonian
345 Ma



Marine, Silurian Period
425 Ma

Lab 5 Case Study from Homework



The granite is older than the basalt. The basalt has intruded into the pre-existing granite.

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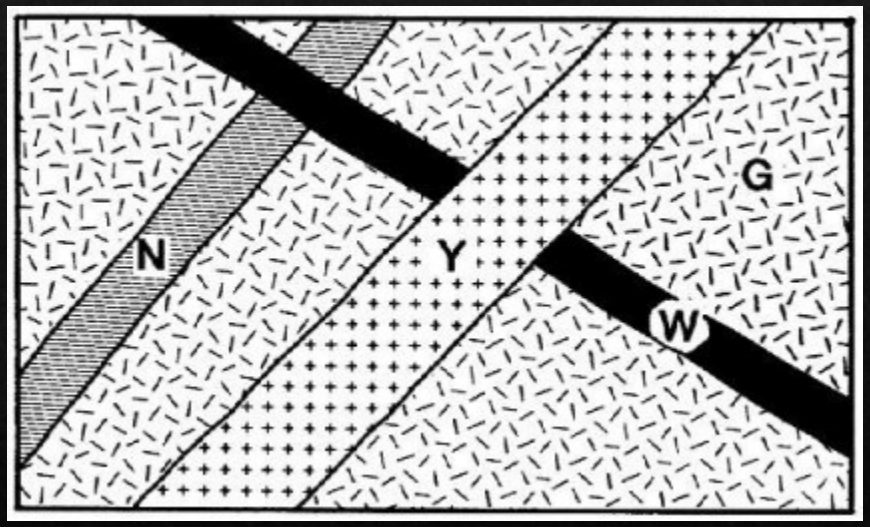

From oldest to youngest: G, N, W, Y

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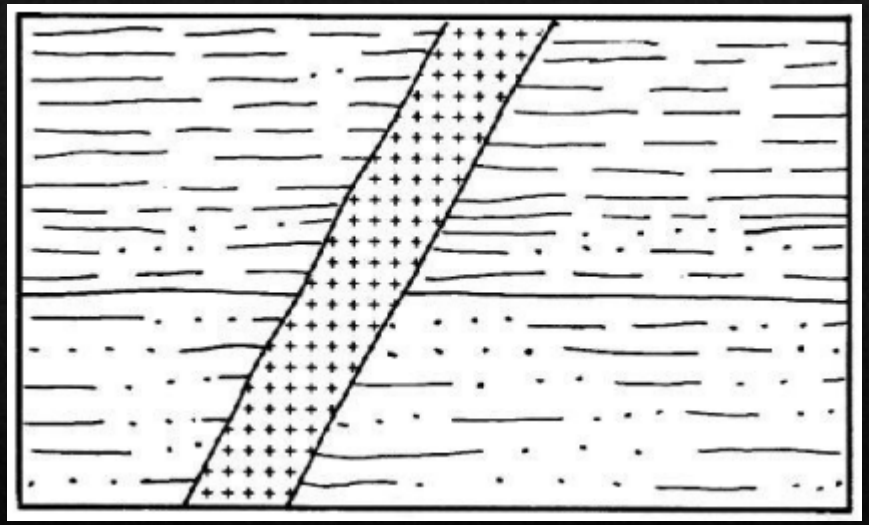

Shale is cut by a 50-million-year-old dike.
Therefore, the shale is older than 50 Ma.

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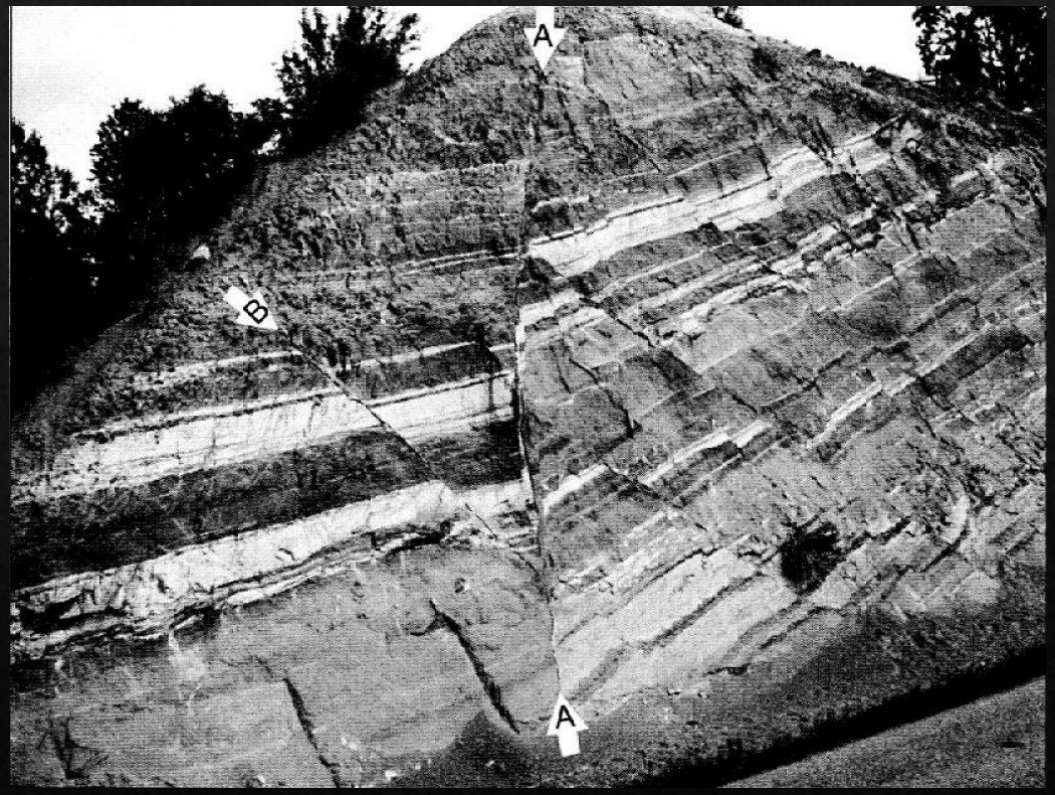

Fault A is cross cutting fault B.

Fault A is younger than B.

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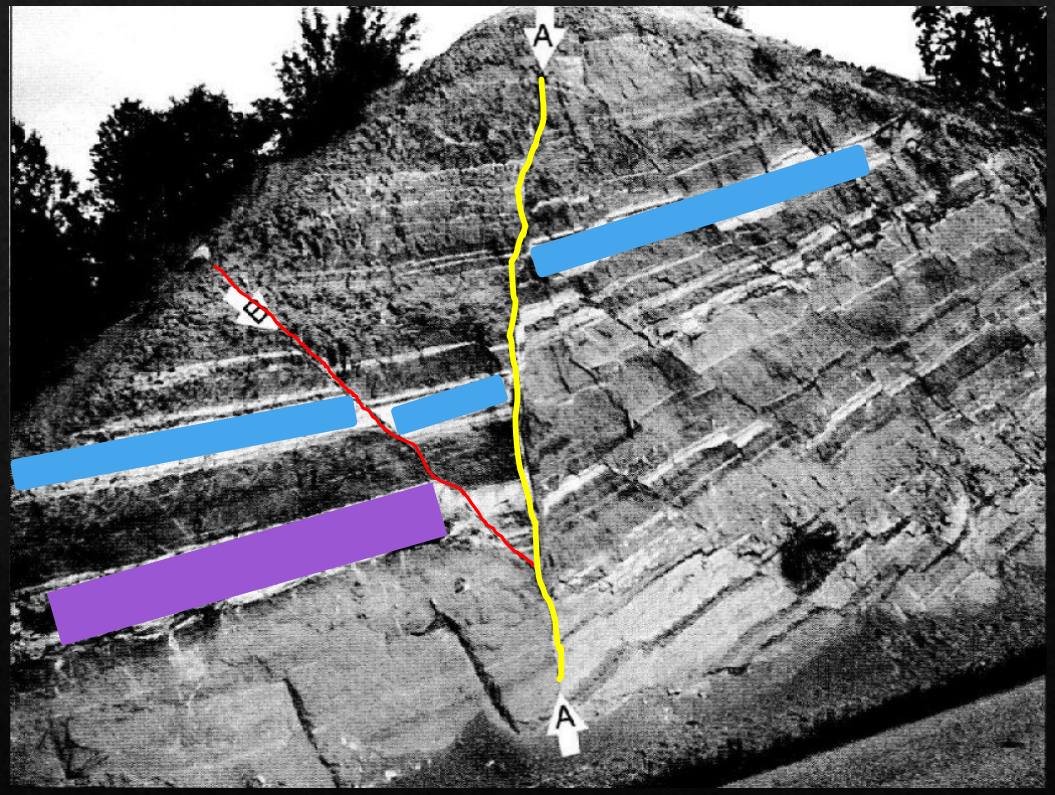

Fault A is cross cutting fault B.

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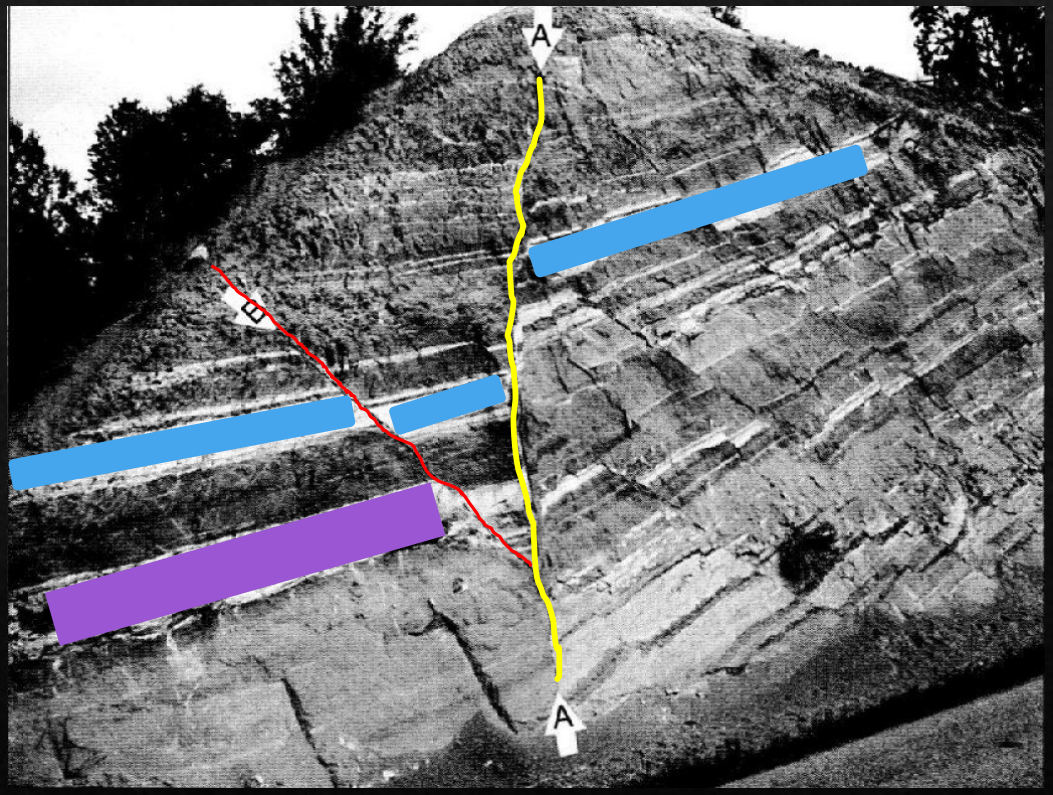
Quiz



At the bottom of the outcrop, where can you get the oldest sample?
The left side or the right side of fault A?