EOSC 110 – Reading Week Activity, February 2015.

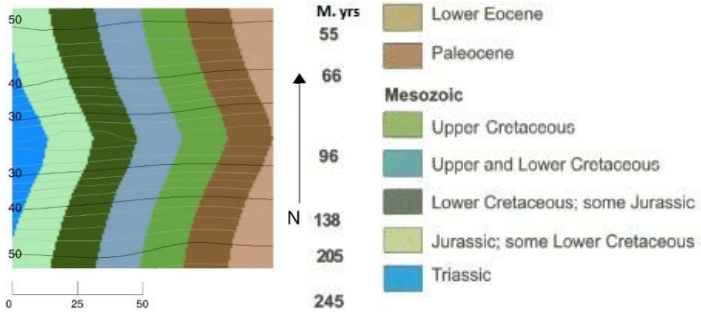
Visible Geology: Building structural geology skills by exploring 3D models online

Skill testing and survey questions to be posed as a post-activity quiz within the Course's Connect site.

Title: visgeol1

1) Here is a geologic map that includes topography and an age scale to the right. Where on this map are the oldest rocks?

a. To the East
b. To the West
c. To the North
d. To the South
e. Not enough information



Title: visgeol2

2) From this geologic map with topography and the given age scale, how are these rocks configured in three dimensions (same figure as above)?

a. Layers dipping down to the East
b. Layers dipping down to the West
c. Layers dipping down to the North
d. Layers dipping down to the South
e. Not enough information

Title: visgeol3

3) With just the information provided, the best we can say about the "V" shape is that it is probably caused by ... (same figure as above)

a. folding of the rocks.
b. valley superimposed on tilted layers.
c. a ridge superimposed on tilted layers.
d. a valley superimposed on folded rocks.
e. a ridge superimposed on folded rocks.
f. a plunging syncline or anticline.

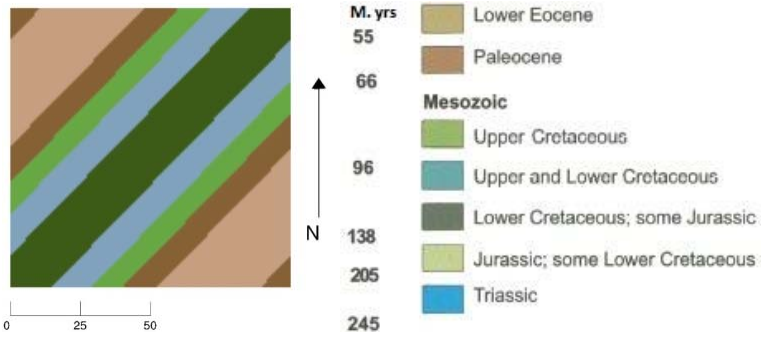
Title: visgeol4

4) If you drilled to find a layer older than the Triassic unit, where would your deepest hole be (same figure)?

a. North side
b. South side
c. East side
d. West side
e. Centre

Title: visgeol5

5) Based on the pattern of rock ages, which of the following structures do we see on this geologic map?



a. Unconformity
b. Tilted layers with a fault
c. Valley in tilted beds
d. Anticline
e. Syncline

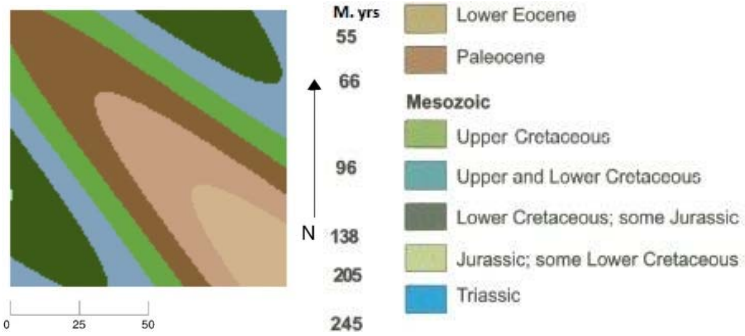
Title: visgeol6

6) If you could drill only a fixed depth into this structure where would you drill to find the oldest rocks at that depth (same figure as above)?

a. NW corner
b. SE corner
c. Centre
d. Another place on this map that is not mentioned here
e. Not enough information to make this determination

Title: visgeol7

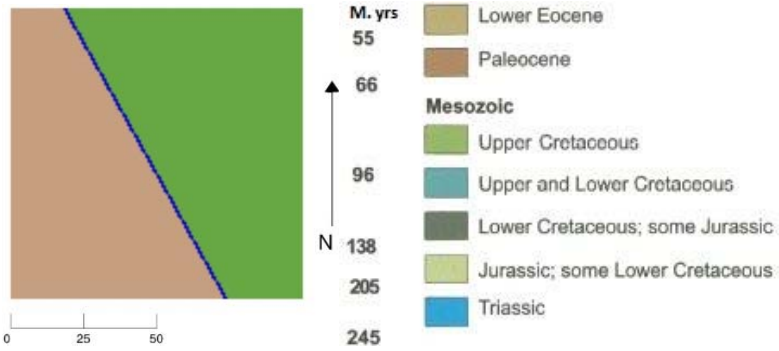
7) Here is geologic map over another structure with the same rock units. What is this structure?



a. A plunging anticline with dip down to the SE
b. A plunging syncline with dip down to the SE
c. A plunging anticline with dip down to the NW
d. A plunging syncline with dip down to the NW
e. A valley over a syncline

Title: visgeol8

8) Which side of this fault has dropped down relative to the other?



a. East side
b. West side
c. This cannot be determined simply from the map.

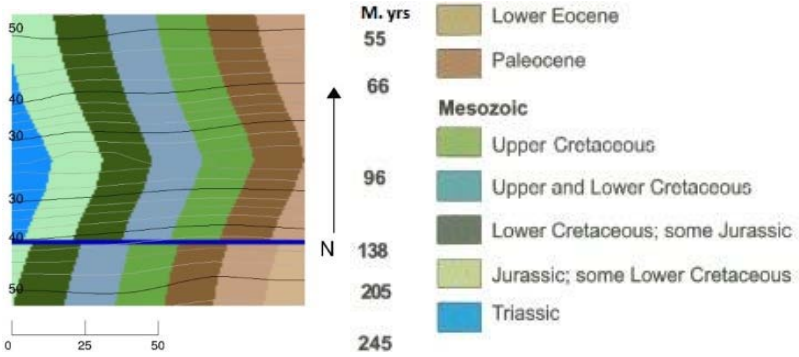
Title: visgeol9

9) This is not a vertical fault, it is tilted. So, if you wanted to drill to intersect the fault, which side should you drill ()same figure as above)?

a. East side
b. West side
c. This cannot be determined simply from the map.

Title: visgeol10

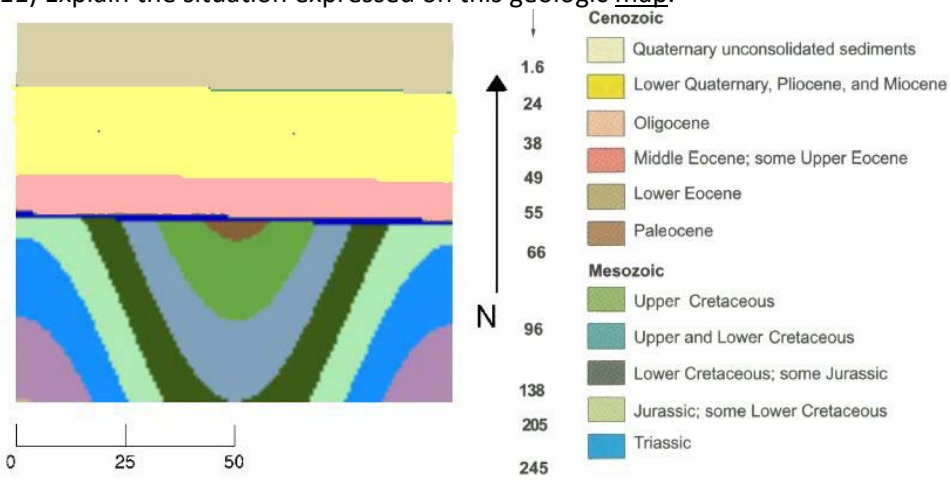
10) This is tricky: it is not a side-to-side (strike slip) fault. Consider how rocks are dipping to determine what must have happened at this fault.



a. Southern block has dropped; I can see older rocks were brought “down”
b. Southern block has dropped; I can see younger rocks were brought “down”
c. Southern block has risen up; I can see older rocks were brought “down”
d. Southern block has risen up; I can see younger rocks were brought “down”
e. We can’t tell what happened.

Title: visgeol11

11) Explain the situation expressed on this geologic map.



a. Horizontal layers lying conformably over a syncline or anticline
b. Horizontal layers lying unconformably over a syncline or anticline
c. Dipping layers lying conformably over a syncline or anticline
d. Dipping layers lying unconformably over a syncline or anticline

Title: visgeol12

12) Based on this geology map, which rock units were either eroded or not deposited in this area (same figure as previous)?

a. Quaternary
b. Oligocene
c. Eocene
d. Paleocene
e. Mesozoic

Remaining questions ask for feedback about this exercise. Thank you for taking the time help us improve it!

Title: vg survey1

13) The interactive Visible Geology simulation tool was very effective at helping me understand how three dimensional geological structures look on surface geology maps.

a. Strongly agree
b. agree
c. neutral
d. disagree
e. strongly disagree

Title: vg survey2

14) It was quick and easy to learn how the Visible Geology simulation tool worked

a. Strongly agree
b. agree
c. neutral
d. disagree

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e. strongly disagree

Title: vg survey3
15) I enjoyed exploring the interactive Visible Geology simulation tool.
a. Strongly agree
b. agree
c. neutral
d. disagree
e. strongly disagree

Title: vg survey4
16) How much of the self-directed activities did you work through?
a. None of it
b. I basically only skimmed the activities
c. I worked on less than half of the activity
d. I worked through more than half of the activities but not all of it
e. I finished the whole activity but was not truly careful at all steps
f. I carefully worked through all the steps of the whole activity

Title: vg survey5
17) How much time did you spend on this whole Visible Geology map interpretation exercise?
a. < 15 minutes
b. 15-30 minutes
c. 30-45 minutes
d. 45-60 minutes
e. 60 – 90 minutes
f. >90 minutes

Type: F
Title: vg survey6
18) So far, what aspect of the material for map interpretation module have you found most confusing or difficult?
a. .*

Type: F
Title: vg survey7
19) Have you any suggestions for improving the way Visible Geology is used in this course?
a. .*