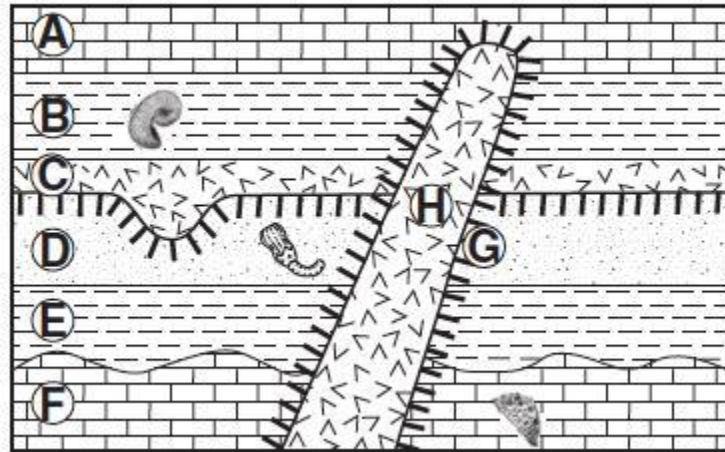


Activity: Understanding Geological Sequences
Dr. Michael J Passow

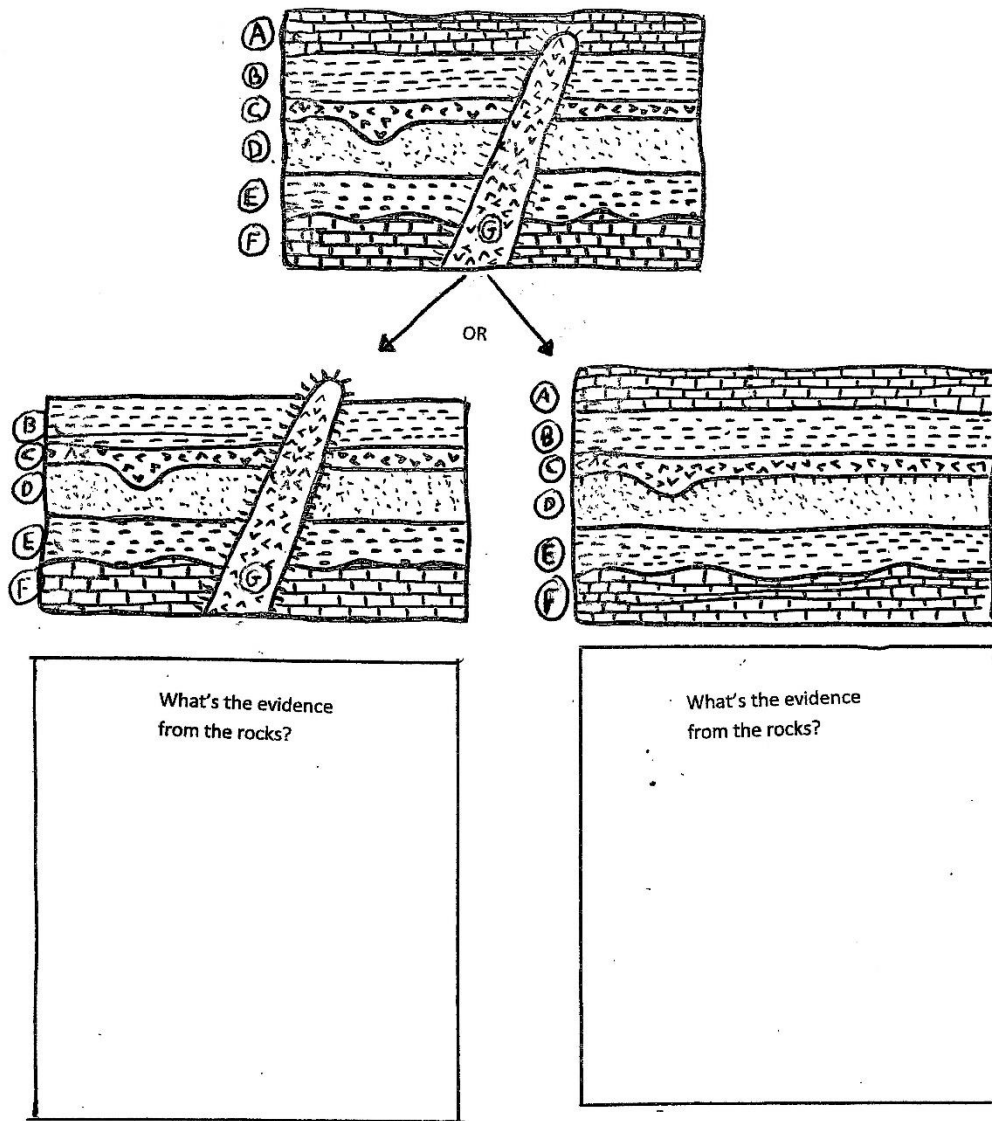
[Outcrop Images for Sequencing](#) from Earth Science World Image Bank

Example of a stratigraphic sequence:

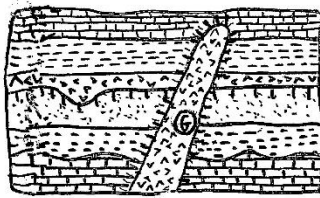


Explain what you think this diagram represents, with reasons for your arguments.






What happened just before the final arrangement of layers?



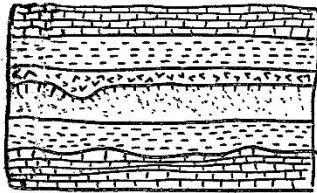
Make drawings to show what this sequence would have looked like in prior stages, with explanations for your reasoning.



A
B
C
D
E
F

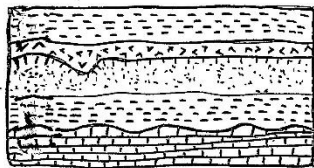
-  LIMESTONE
-  SHALE
-  SANDSTONE
-  IGNEOUS ROCK
-  CONTACT METAMORPHISM

remove intrusion "G"



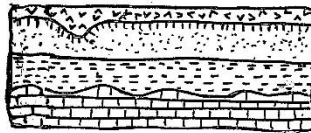
A
B
C
D
E
F

remove limestone layer "A"



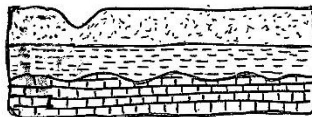
B
C
D
E
F

remove shale layer "B"



C
D
E
F

remove igneous intrusion "C"



D
E
F

fill in channel



D
E
F

remove sandstone "D"



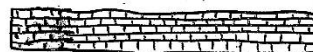
E
F

remove shale "E"

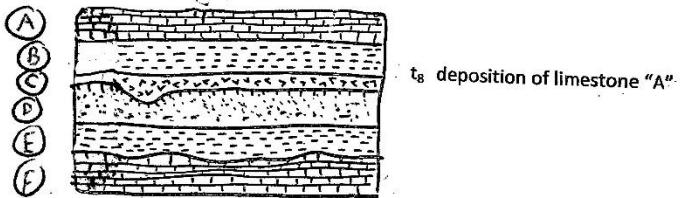
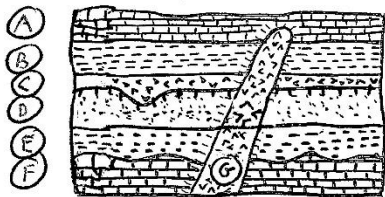
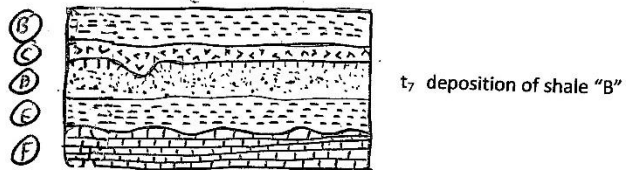
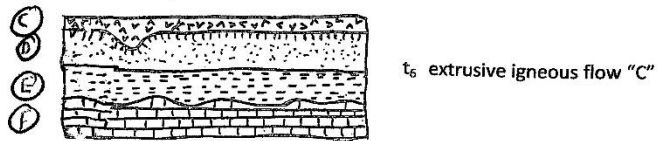
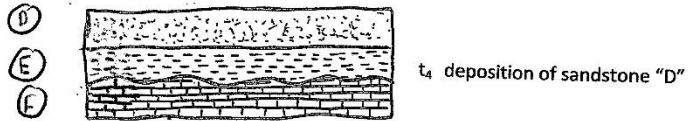


F

undo erosion of limestone "F"



F



What are some benefits of using “reverse engineering” to understanding stratigraphic diagrams?

References:

Passow, M.J., and K.A. Kastens (2013) "[Challenge: Sequencing—Using Spatial Relationships to Understand Temporal Patterns](#)" *The Earth Scientist*, v. 29, no. 3, pp. 24 – 29.

[Earthlearningidea #238 "What questions about sequencing geological events might be asked at any rock exposure?"](#)