

Logical Layers

Subject: Geography, Stratigraphy, Relative Dating

Learning Goal:

Relative dating is a method of dating that relies on the position of one layer/artifact in relation to another

Materials

- (4) Shallow Trays
- Bottle Caps
- Dry Beans
- Dry Noodles
ex. macaroni, shells, rotini
- Corks
- Special "Artifact" object such as a bead, small piece of jewelry, small rock
- Strata Cards: easy, medium, hard
(In printer options, change setting to short-edge binding)
- Laminated Strata Picture

Taking it Further

- Small Shells
- Small Leaves
- Human Artifacts

Description:

1. Ask: **"Would you like to help me arrange some rock layers?"**
2. Have guests place all items in separate trays
3. Show guests laminated strata picture, let them know **the earth is constantly putting new layers on top of the old ones, therefore, things towards the bottom are typically older than what's on top**
4. Let guests know **each tray represents a different rock layer, and slide trays around to demonstrate how they can be in a single line to mimic rock faces**

5. Give them a strata card based on age/background knowledge
6. Task them with arranging the "rock layers" so that they fulfill the requirements of the card
7. Have guest place "artifact" in in any of the four trays
8. Ask: What can we tell about the age of our artifact?
"Do we know the exact age?"
Let them know **"This is referred to as *relative dating*, it helps scientists learn about environments and creatures that lived in prehistoric times by comparing things to other layers"**

Taking it further

9. Have guests place shells in one tray, leaves in another and human artifacts in another
10. Ask: **If we find these fossils in our layers, what does that tell us about the history of the area? "When did humans live here? What kinds of environmental conditions did they live in?"**

Relative Dating:

http://paleobiology.si.edu/geotime/main/foundation_dating2.html

<http://sciencelearn.org.nz/Contexts/Dating-the-Past/Science-Ideas-and-Concepts/Relative-dating>

Stratigraphy:

<http://www.tulane.edu/~sanelson/eens1110/geotime.htm>

Medium: 1

Cork
Beans
Noodles
Bottle caps

Easy: 2

Noodles
Beans
Cork
Bottle caps

Easy: 1

Beans
Bottle caps
Noodles
Cork

Hard: 2

Bottle caps
Noodles
Cork
Beans

Hard: 1

Beans
Cork
Bottle caps
Noodles

Medium: 2

Cork
Noodles
Bottle caps
Beans

Easy: 1

- The beans are the youngest
- The corks are older than the bottlecaps
- The noodles are older than the bottlecaps
- The noodles are younger than the corks

Easy: 2

- The corks are younger than the bottlecaps, but older than the beans
- The beans are older than the noodles

Medium: 1

- The bottlecaps are older than the corks
- The noodles are not the oldest
- The beans are older than the corks, but younger than the noodles

Medium: 2

- The corks are younger than the bottlecaps
- The beans are older than the bottlecaps
- The noodles are older than the corks, but younger than the bottlecaps

Hard: 1

- The beans are younger than the noodles
- The corks are younger than the bottlecaps
- The corks are older than the beans
- The bottlecaps are younger than the noodles

Hard: 2

- The corks are not the youngest
- The noodles are not the oldest
- The bottlecaps are younger than the noodles
- The corks are older than the noodles, but younger than the beans

