Quick Lab



Index Fossils

Objective

* Describe the use of index fossils in dating a rock sample.

Materials

For the class

* chart of geologic timescale
* chart of index fossils

For each group

* cardboard
* clay, several colors
* Create 3-5 index fossils specific to the rock outcrop model your group chose, using the 3-D printer in the Fab.

In this lab, you will learn how index fossils can be used to determine the age of a rock layer.



PROCEDURE

Begin by deciding within your group which time period(s) your outcrop will represent. Work with your group to identify index fossils that could be present in a rock layer of that age, consulting both the chart of index fossils and the chart of the geologic timescale. Create index fossil models using the 3-D printer in the Fab Lab. With your classmates, create a chart of the fossils you printed.



Construct a rock outcrop using layers of different colored clay. Build your model on a piece of cardboard to provide it with good support. Place your model index fossils on the top of each correct layer, pressing them into the clay. Make sure to embed the index fossils in the correct layers. Your outcrop should include some rock layers that do not contain any index fossils.



Now, swap your outcrop with another group and use the charts of index fossils and geologic timescale to determine the approximate age of each layer in the rock outcrop.



What time periods are represented in the rock outcrop your group worked with? What index fossils were found?



Quick Lab continued

How are index fossils useful in determining the approximate age of a rock sample?



For which rock layers was it easiest to determine an absolute age? For which layers was it most difficult? Explain your answer.

