INDEX FOSSILS LAB

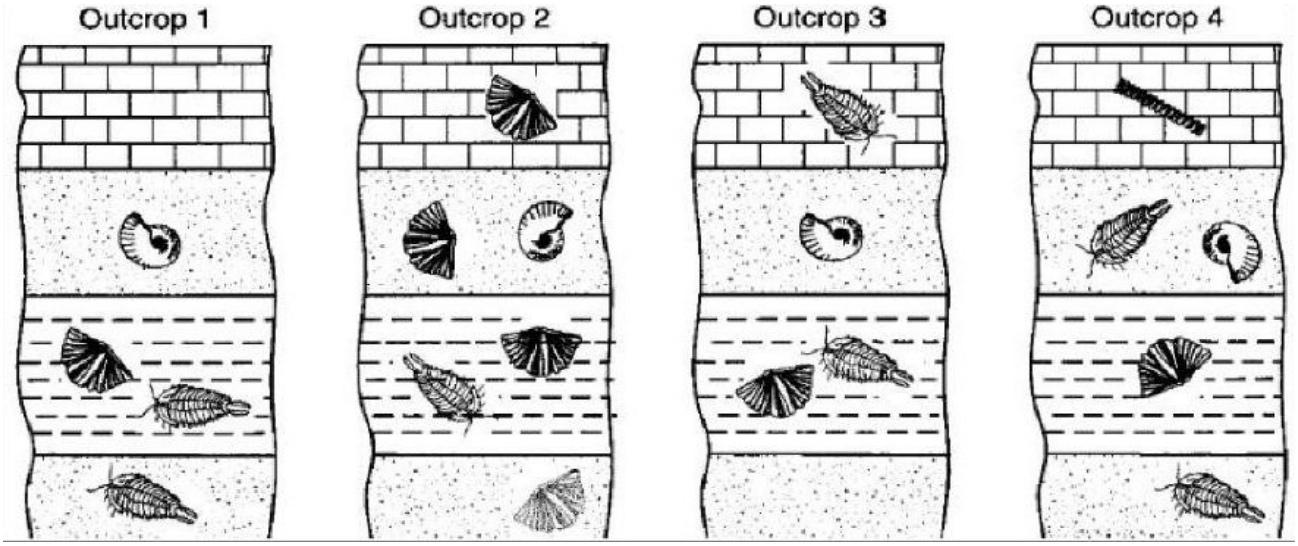
Because animals evolve over time, some fossils are typical of a particular time in the Earth's history. These fossils are very useful for us because we can use them to date the layers of rock that they are found in. Fossils that can be used in this way are called **index fossils, and rock layers with the same index fossils in them can be correlated.**

To be considered an index fossil, it must meet 2 criteria:

1. The fossils have to be **geographically widespread,** or found over large areas so that we can use them to match layers separated by huge distances. **Widespread = The fossil must show up in each of the different outcrops (columns).**

2. The fossil must have **lived for only a short time**, so that it appears in only one layer of sedimentary rocks. **Short Lived = Within each outcrop, the fossil can only appear in one layer (row).**

FOR EXAMPLE: THE DIAGRAM BELOW SHOWS SEVERAL ROCK OUTCROPS SEPARATED BY LARGE DISTANCES. IN EACH OUTCROP ARE SEVERAL FOSSILS. WHICH OF THE FOSSILS SHOWN IS AN INDEX FOSSIL?



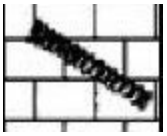
To find the index fossil we eliminate any fossils that don't show up in each column, and fossils that appear in more than one layer per column.

Can be eliminated because it shows up in two different layers in the first outcrop.

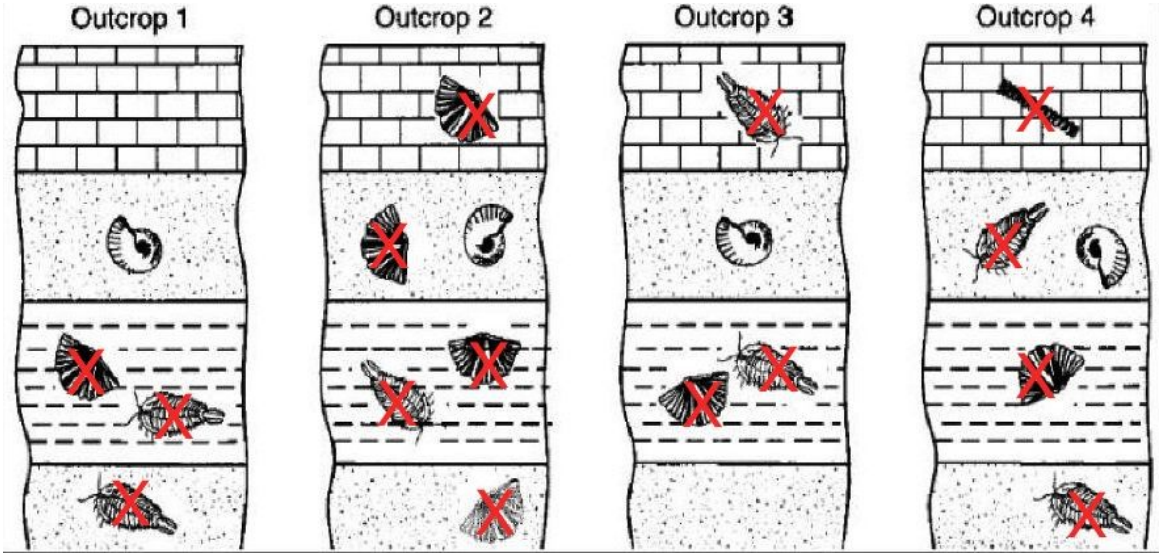
Therefore we can eliminate all of these from the diagram.

Can be eliminated because it shows up in two different layers in the second outcrop.

Therefore we can eliminate all of these from the diagram.



Can be eliminated because it is not in the first, second, or third outcrops.



After we've eliminated all the fossils that don't fit the requirements, we have only 1 left that appears in all the outcrops, and in only one layer per outcrop. So the correct index fossil is: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Look at the fossils in the box. They are as follows.

Number	Name	Fossil Information
101	Eocen	Gastropod from Spain
103 (Black)	Lemon Shark	Found frequently in North and South America, in Pacific and Atlantic oceans.
103 (White)	Extinct Maco Shark	Found off of Argentina and Nova Scotia
102	Cryptolithus	Trilobite from the Ordovician Period
96	Cystiphyllum	Coral from the Silurian Period
94	Lingulata	Brachopod that still exists in a different form

1. Which three of these would be good index fossils?

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2. Select one, and explain why.

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3. Which three would not make good index fossils?

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4. Select one, and explain why.

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5. Will humans one day be an index fossil? Why or why not?

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