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Index Fossils

As you learned in the previous sections, fossils help scientists determine the relative ages of rock sequences through the process of correlation. Some fossils are more useful than others for relative-age dating. **Index fossils** are fossils that are easily recognized, abundant, and widely distributed geographically. They also represent species that existed for relatively short periods of geologic time. The different species of trilobites shown in **Figure 21.25** make excellent index fossils for the Paleozoic Era because each was distinct, abundant, and existed for a certain range of time. If a geologist finds one in a rock layer, he or she can immediately determine an approximate age of the layer.

Section 21.4 Assessment

Section Summary

- Fossils provide evidence that species have evolved.
- Fossils help scientists date rocks and locate reserves of oil, gas, and minerals.
- Fossils can be preserved in several different ways.
- Index fossils help scientists correlate rock layers in the geologic record.

WRITING in Earth Science

- MAIN Idea** Describe how the fossil record helps scientists understand Earth's history.
- List** ways in which fossils can form, and give an example of each.
- Explain** how scientists might be able to determine the relative age of a layer of sediment if they find a fossilized trilobite in the layer.
- Compare and contrast** a mold and a cast.
- Think Critically Evaluate** Why are the best index fossils widespread?
- Imagine** that you have just visited a petrified forest. Write a letter to a friend describing the forest. Explain what the forest looks like and how it was formed.



Figure 21.25 These trilobite species make excellent index fossils because each species lived for a relatively short period of time before becoming extinct.