

CHAPTER 4**ANSWER KEY****Answering Darwin's
Questions Answer Key****BLM 4.2.3A****Darwin's Observations and Questions Arising from Them**

The two main ideas expressed in *On the Origin of Species* are:

1. Present forms of life have arisen by descent and modification from an ancestral species.
2. The mechanism for modification is natural selection working for long periods of time.

Darwin's Early Questions

1. Darwin's observations of distinctly different organisms in different parts of the world led him to conclude that there was a force or forces at work in the different regions that modified how the native organisms developed. These observations also led to questioning of the theory that creation happened as a single event, which was the belief at the time.
2. Darwin's observations of local organisms and similar fossilized organisms in the same region would be evidence for the first statement: "Present forms of life have arisen by descent and modification from an ancestral species."
3. If Darwin's theories about the influence of local conditions on the development of organisms was correct, he could suggest that the species found on the Galápagos had somehow come from that area and that local organisms on the islands had been influenced by local conditions over time.
4. Darwin built on the ideas of Thomas Malthus—that populations produced far more offspring than their environment could support and this over-population led to starvation and disease—and concluded that where there was a diversity of species in a small isolated area, competition for limited resources may have selected for variations in the survivors and their descendants.
5. Darwin may have applied his knowledge of artificial selection to his observations of the physiological differences in populations that he had observed in different regions and may have concluded that the competition for scarce resources could have the same selective effect on a population as those selective decisions made by breeders using artificial selection. Because the forces were natural rather than instigated by humans, he referred to the process as "natural selection."