

AMERICAN MUSEUM NATURAL HISTORY

Genetics, Genomics, Genethics

Week 3

Molecular Lab Techniques

Part 2: Polymerase Chain Reaction

Rob: The reactions that are used to get DNA sequences require large amounts of starting DNA. The process that we use to do this is the polymerase chain reaction, or PCR.

The researcher places the purified DNA into small tubes. The tubes contain the original template DNA from the organism, the PCR primers, the Taq polymerase, nucleotides, and buffer.

The machine is programmed to run through a series of temperature cycles. At the end of the first cycle, the amount of DNA in between the primers has doubled. At the end of the second, it has quadrupled. And so on, until the 30th cycle, where you have a billion times more DNA than what you started with.