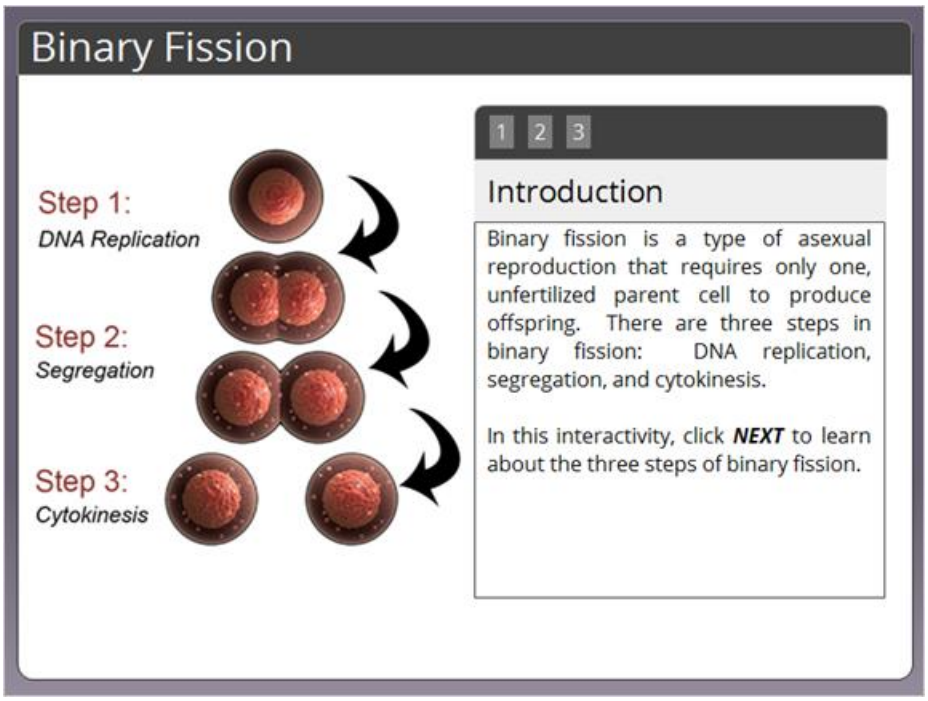
Module 4: Cell Biology - Growth and Reproduction

Topic 1 Content: Binary Fission Notes

Introduction



Binary fission is a type of asexual reproduction that requires only one, unfertilized parent cell to produce offspring. There are three steps in binary fission: DNA replication, segregation, and cytokinesis. In this interactivity, click ***NEXT*** to learn about the three steps of binary fission.

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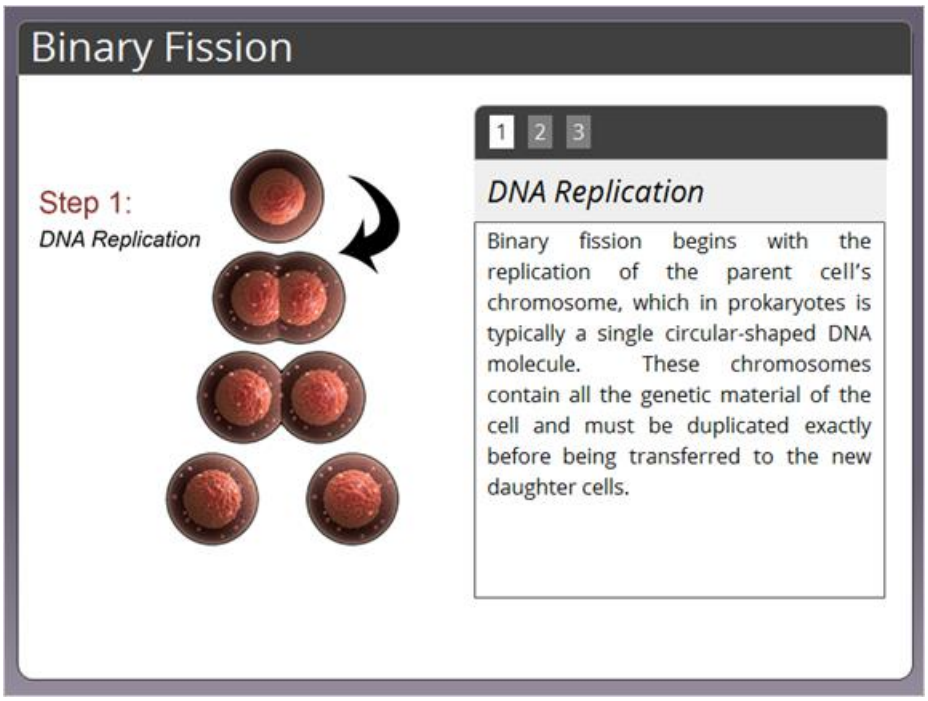
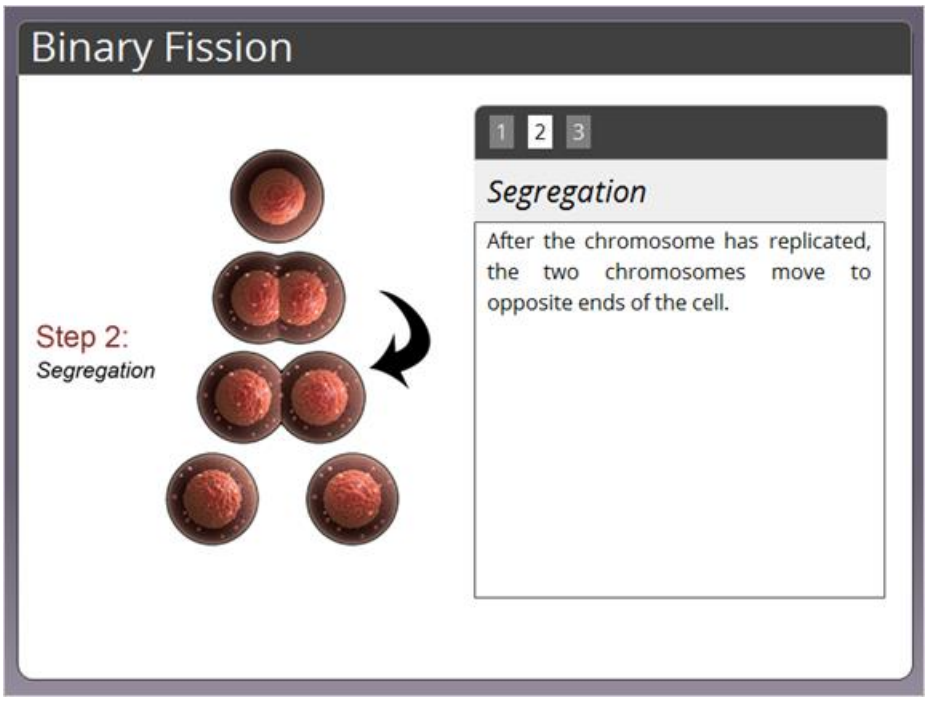
Step 1: DNA Replication



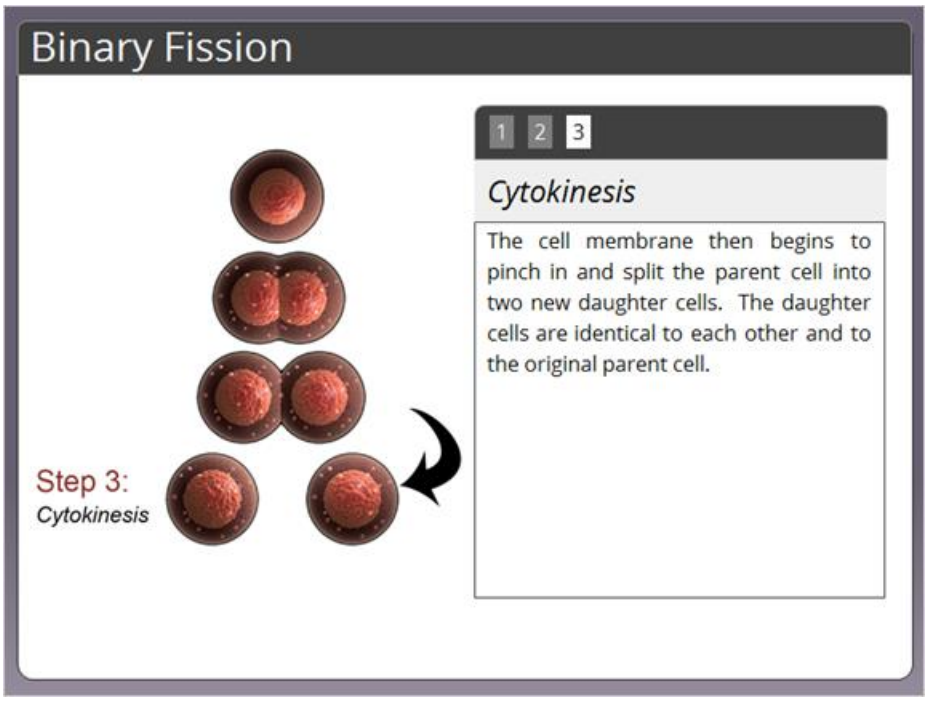
Binary fission begins with the replication of the parent cell's chromosome, which in prokaryotes is typically a single circular-shaped DNA molecule. These chromosomes contain all the genetic material of the cell and must be duplicated exactly before being transferred to the new daughter cells.

Step 2: Segregation



After the chromosome has replicated, the two chromosomes move to opposite ends of the cell.

Step 3: Cytokinesis



The cell membrane then begins to pinch in and split the parent cell into two new daughter cells. The daughter cells are identical to each other and to the original parent cell.