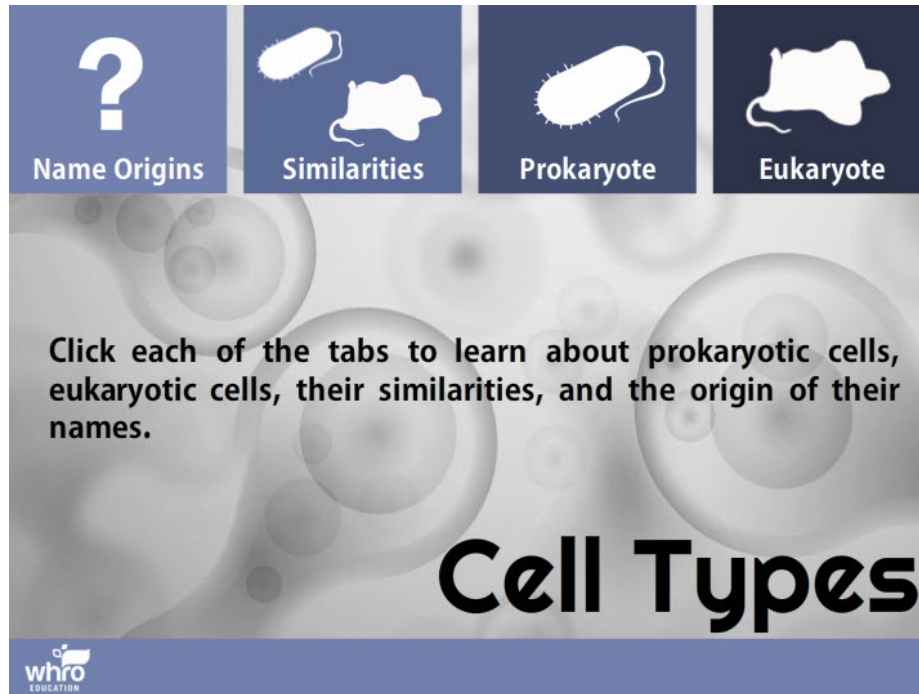


Module 3: Cell Biology - Structure and Function

Topic 2 Content: Cell Types Notes

Introduction



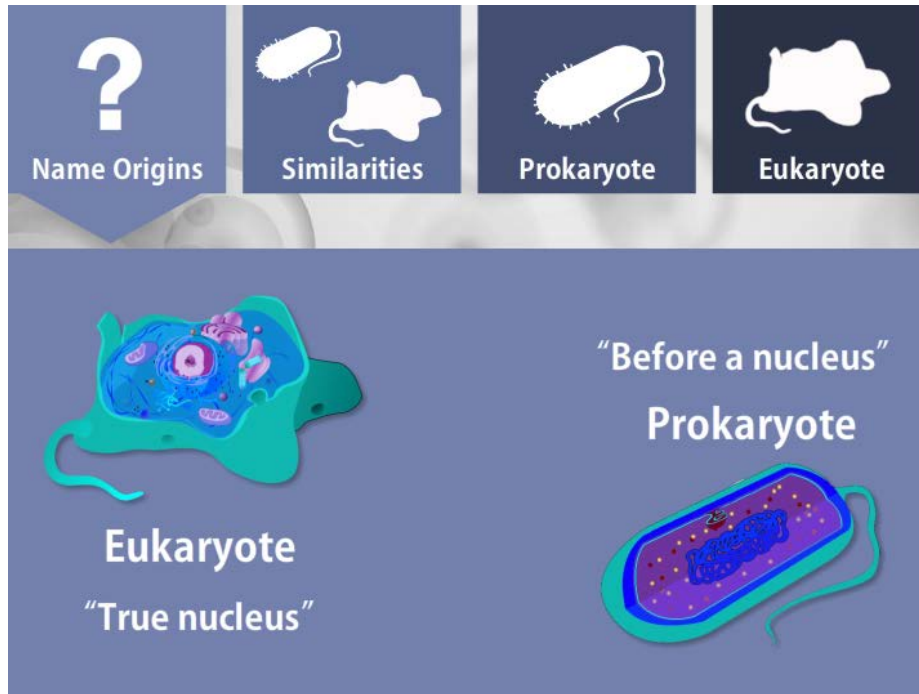
The image shows a digital interface for learning about cell types. At the top, there are four tabs: 'Name Origins' (with a question mark icon), 'Similarities' (with icons of a prokaryotic cell and a eukaryotic cell), 'Prokaryote' (with a prokaryotic cell icon), and 'Eukaryote' (with a eukaryotic cell icon). Below the tabs, a central text box reads: 'Click each of the tabs to learn about prokaryotic cells, eukaryotic cells, their similarities, and the origin of their names.' The background features a blurred image of various cells. The title 'Cell Types' is displayed in large, bold, black font. At the bottom left, the 'whro EDUCATION' logo is visible.

Just like there is a diversity of living organisms, there is also a diversity of cell types. Cells are either prokaryotic or eukaryotic. Click each of the tabs to learn about prokaryotic cells, eukaryotic cells, their similarities, and the origin of their names.

Module 3: Cell Biology - Structure and Function

Topic 2 Content: Cell Types Notes

Name Origins

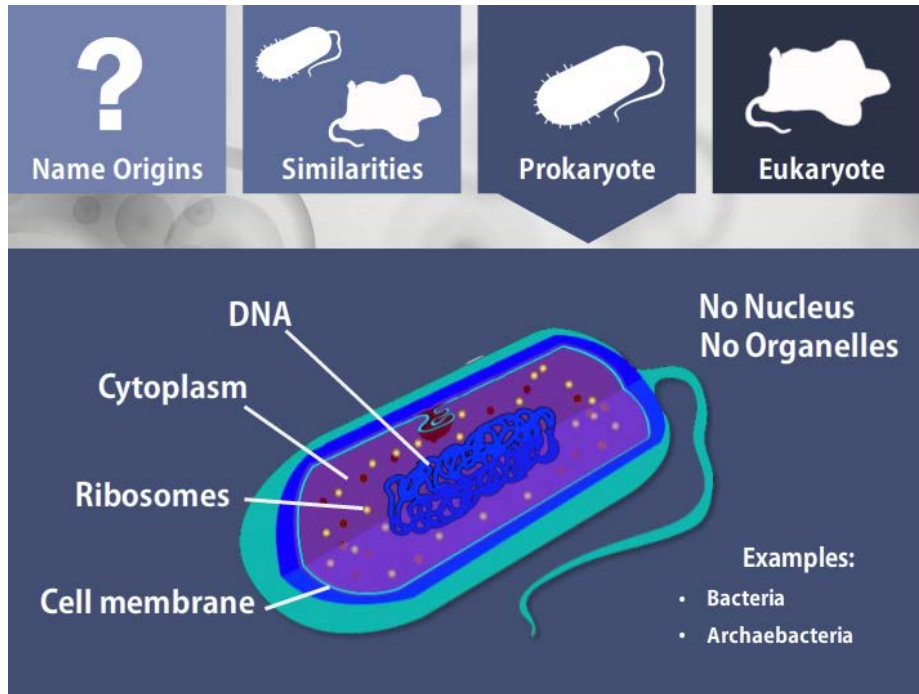


The broadest division of cell types is between prokaryotic and eukaryotic cells. The words prokaryote and eukaryote come from the Greek word “karyose”, which means kernel. In biology, the root word kernel refers to the nucleus. The prefix “pro” means before, and the prefix “eu” means true. Therefore, prokaryotic means “before a nucleus” and eukaryotic means the cell has a “true nucleus”.

Module 3: Cell Biology - Structure and Function

Topic 2 Content: Cell Types Notes

Prokaryotic Cells

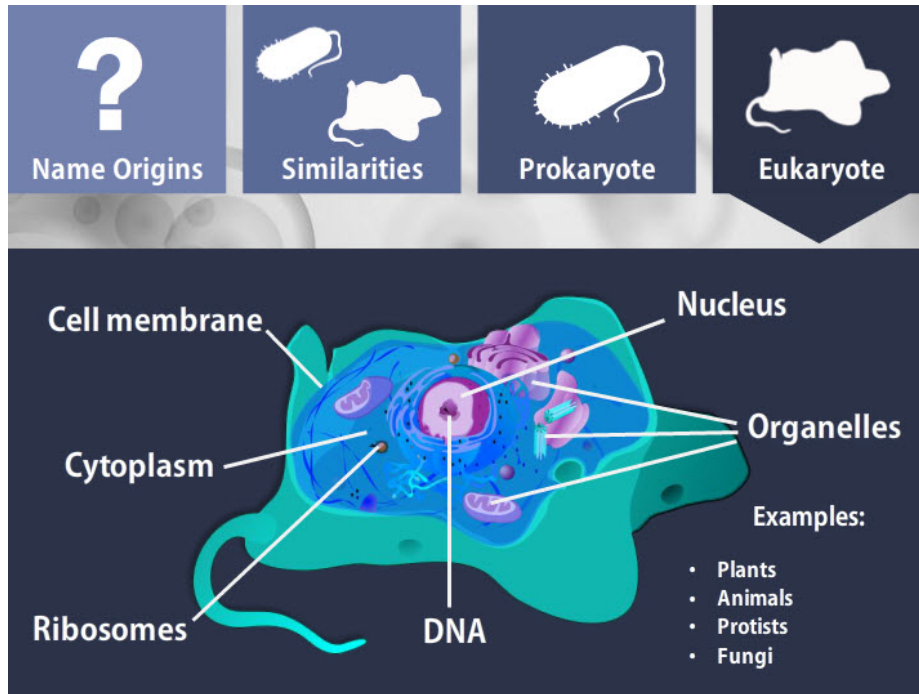


Prokaryotic cells are simple cells with cytoplasm, ribosomes, and a cell membrane. Prokaryotic cells lack a nucleus and other membrane bound organelles. Organelles are structures that perform functions in cells. The DNA is circular and is found in a nucleoid region instead of a nucleus. Unicellular organisms, like bacteria and archaeobacterial, are prokaryotes. These cells are smaller and much more abundant than eukaryotic cells. Scientists believe that prokaryotic cells first appeared on Earth 3.5 billion years ago, and that eukaryotic cells evolved from prokaryotic cells.

Module 3: Cell Biology - Structure and Function

Topic 2 Content: Cell Types Notes

Eukaryotic cells

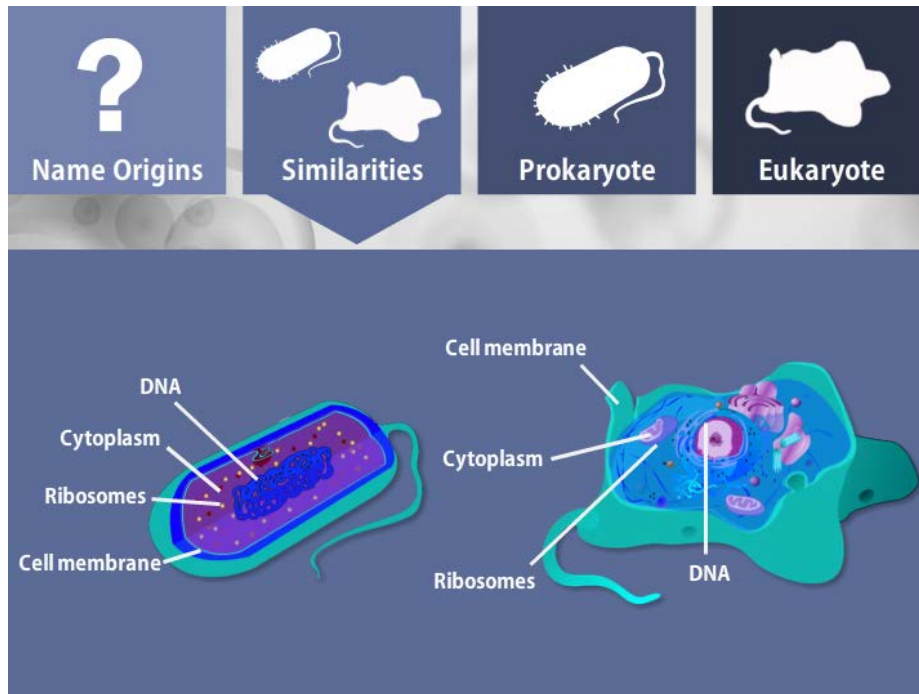


Eukaryotic cells are cells that contain a nucleus, membrane-bound organelles, cytoplasm, and ribosomes. In eukaryotes, the DNA is linear and contained in the nucleus. Eukaryotic cells evolved 1.5 billion years ago, and are much larger than prokaryotic cells. Most eukaryotic organisms are multicellular. Examples of eukaryotic organisms include plants, animals, protists, and fungi. Some protists and fungi are unicellular.

Module 3: Cell Biology - Structure and Function

Topic 2 Content: Cell Types Notes

Similarities



All cells are surrounded by a protective cell membrane, and all cells contain cytoplasm. All cells contain the genetic material DNA, and all cells have ribosomes to make proteins.