# Organelle Encyclopedia Article

## Organelle

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.



The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". 

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". 

# Contents

# Organelle

Cellular organelles are the membrane-bound or macromolecular structures that make up the internal architecture of the cell or provide compartments within which many metabolic processes take place. Among the most prominent membranous organelles of eukaryotic cells (those with membrane-bound nuclei) are mitochondria and chloroplasts (the primary energy sources for animals and plants respectively), lysosomes (the main digestive compartments of cells), smooth and rough endoplasmic reticulum (the site of synthesis of complex lipids and membrane or export proteins, respectively) and the Golgi apparatus (the major site for assembly, processing, sorting, and packaging of macromolecular products that will be shipped to other organelles or secreted from the cell). Among the most prominent macromolecular organelles are ribosomes (responsible for protein synthesis) and elements of the cellular cytoskeleton such as microtubules and microfilaments. Some cell biologists might also consider eukaryotic chromosomes to be organelles since they are large enough be seen during mitosis or meiosis in a light microscope. Prokaryotic cells (bacteria, some fungi and their kin) generally lack any of these organelles except ribosomes.

Organelles are important in establishing cell structure and provide a wide variety of individual spaces and surfaces within or on which different chemical compounds can be separated, organized, or stored. They also keep potentially incompatible reactions apart and allow higher plant and animal cells to simultaneously carry out a wide range of highly specialized metabolic operations.