

Science
Unit 2: Comparative Cellular Structure

Essential Understandings	<ul style="list-style-type: none"> ▪ Cells' structures reflect their functions. ▪ The cell is the basic system from which other living systems are built. ▪ Metabolism, respiration, photosynthesis, and reproduction are all processes carried out within cells.
Essential Questions	<ul style="list-style-type: none"> ▪ What processes are carried out within cells? ▪ How do more complex systems of cells form from simple cells?
Essential Knowledge	<ul style="list-style-type: none"> ▪ Cells contain organelles with different functions. ▪ Cells can work together to perform specific functions.
Vocabulary	<ul style="list-style-type: none"> ▪ <u>Term Categories:</u> <ul style="list-style-type: none"> ○ organelles and their functions ○ metabolism ○ prokaryotes and eukaryotes ○ respiration ○ photosynthesis ○ cellular reproduction
Essential Skills	<ul style="list-style-type: none"> ▪ Compare and contrast prokaryotes and eukaryotes. ▪ Investigate an extremeophile.
Related Maine Learning Results	<p><u>Science</u> E. The Living Environment E3.Cells</p> <p>Students describe the hierarchy of organization and function in organisms, and the similarities and differences in structure, function, and needs among and within organisms.</p> <ul style="list-style-type: none"> ○ Describe the basic functions of organisms carried out within cells including the extracting of energy from food and the elimination of wastes. ○ Explain the relationships among cells, tissues, organs, and organ systems, including how tissues and organs serve the needs of cells and organisms. c. Compare the structures, system, and interactions that allow single-celled organisms and multi-celled plants and animals, including humans, to defend themselves, acquire and use energy, self-regulate, reproduce, and coordinate movement.
Sample Lessons And Activities	<ul style="list-style-type: none"> ▪ Compare and contrast prokaryotes and eukaryotes. ▪ Investigate an extremeophile.

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Sample Classroom Assessment Methods	<ul style="list-style-type: none">▪ Evolution lab
Sample Resources	<ul style="list-style-type: none">▪ <u>Publications:</u><ul style="list-style-type: none">▪ http://www.astrobio.net/exclusive/226/defining-life▪ http://www.pbs.org/wgbh/nova/evolution/brief-history-life.html▪ http://www.sciencedaily.com/releases/2005/05/050506142212.htm▪ http://www.nasa.gov/centers/marshall/news/news/releases/2005/05-020.html▪ http://www.astrobiology.com/extreme.html▪ http://www.ucmp.berkeley.edu/archaea/archaea.html▪ http://www.inl.gov/featurestories/2005-04-04.shtml