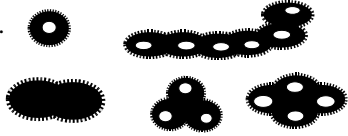







SCIENCE COMPETENCY CURRICULUM GUIDE

Exit Competency B: Students will demonstrate competency in understanding basic principles and theories of life science whether from biology, zoology, anthropology, botany, genetics, including: 1: Structure of the cell

Objectives:	Assessment:	Possible Resources:	Possible Strategies:
<p>By 9th grade, students will:</p> <ol style="list-style-type: none"> Understand that cells are the fundamental unit of structure and function of living things by investigating and describing in a variety of written, graphic, modeled and/or technological presentations the cell structure of a broad variety of specimens to include prokaryotes, eukaryotes and multiple cell organisms. Understand cell metabolism by explaining in a variety of written, graphic, modeled and/or technological presentations the distinctions among organelles of the cell needed for secretion, digestion, synthesis, storage, and cell movement. These include: energy production, transport of molecules, waste disposal, synthesis of new molecules, and storage of genetic material. Understand the cell cycle by summarizing in a variety of written, graphic, modeled and/or technological presentations the continuous sequence of events in the life of a cell, including: growth, differentiation, and genetic continuity. 	<p style="text-align: center;"><u>Competency B Assessment</u></p> <p>A) These questions are examples of assessment activities that will appear on a science content ALT.</p> <p style="text-align: center;"><u>B-1 Assessment Examples</u></p> <p>1. </p> <p>This drawing represents a population of zombos. Which animal might NOT be a zombo?</p> <p>A.  B. </p> <p>✓ C.  D. </p> <p>E. </p> <p style="text-align: center;"><u>B-1 Assessment Examples (cont'd)</u></p>	<p>Provided Instructional Resources: <u>Life Science (7):</u></p> <ul style="list-style-type: none"> - <u>Holt Science & Technology;</u> 2001. Adopted. 7th Grade and High School Remedial <u>Glencoe Science: Physical Science,</u> Glencoe/McGraw-Hill, 2005. 9th - 12th Adopted <u>Foundations of Science:</u> <ul style="list-style-type: none"> - <u>Foundations of Science,</u> Prentice Hall, 2000 <u>Cells and Heredity</u> - Resource Pro CD ROM - Integrated Science Laboratory Manual - West Student-Centered Activity Book - Assessment Resources CD ROM - Program Planning Guide - Integrated Science Activity Books I and II - Swift scopes - CBL Systems (including CBL, AC Adapter, DIN Adapter, TI-82, Temperature probe, Voltage probe and Light sensor) - Electronic Balances - Hot Plates - Stand Supports - Life Science Interactive Student Tutorial CD-ROM - Life Science Videodiscs 	<p>B1 Instructional Strategies could include:</p> <ul style="list-style-type: none"> - Labs - Lecture/note taking - Demos discussion - Activities (group and independent and teacher guided) - KWL - Lectures with note takers; reading assignment study guides designed through Meggin McIntosh design notebook (PR:ograms); student/organelle jigsaw; cell model project - Observation and labeled drawings - Library research, project, presentation - Class discussion/questioning - Integration: Art, writing, communications - Project presentation - Cells (onion skin & cheek cells) - Simulated plasma membrane - Cytokinesis in an onion root tip - Gradient - Modeling meiosis - Picturing meiosis - Continuity through development of drosophila - A diffusion model - A model of osmosis - Investigating the cell nucleus - Concept mapping the cell cycle - Flow chart of differentiation

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<p>4. Understand that plant and animal cells are different because of adaptive reasons by identifying and explaining their differences using a variety of written, graphic, modeled and/or technological presentations.</p> <p>By 12th grade students will:</p> <p>5. Understand photosynthesis by designing and implementing investigations to test for the products and/or variables involved in the process. (See Competency E for Scientific Method)</p> <p>Time: Approx. 10 hours to 39 hours/days (2 months)</p> <p>– Begin the exploration of cells in early December, and complete the study of heredity (genetic continuity) in mid-February</p>	<p>Cellular respiration is an energy-releasing process. Which statement is correct?</p> <p>✓ A. It occurs in both plants and animals.</p> <p>B. It occurs in animals, but not plants.</p> <p>C. It occurs in plants, but not animals.</p> <p>D. It occurs in neither plants nor animals.</p> <p>E. It occurs only in “protists”??.</p> <p>See Competency E - Inquiry Method Checklist</p>	<p><u>Biology:</u></p> <ul style="list-style-type: none"> – <u>Modern Biology</u>, Holt, Rinehart and Winston, 1999 – Teaching Resources – BioSources lab program – WARD’s materials ordering software – BioSources technology resources – BioSources teaching transparencies – Holt Biology Videodiscs or Science in Action Videotapes – Microscopes <p><u>Other Courses:</u></p> <ul style="list-style-type: none"> – <u>AP Edition Biology</u>, Pearson Prentice Hall, 2005 <p>Supplementary Resources:</p> <ul style="list-style-type: none"> – <u>Recombinant DNA and Biotechnology</u>; 1996 ISBN 1-55581-101-9 – <u>Lab Manual for Microbiology</u> – Teacher generated resources – available – Cell Project: Build a Cell – Microscope Lab – <u>The Biology Coloring Book</u> by Robert d. Griffin (Harper Collins Pub. All film – BSCS Investigation 5.1 – BSCS Investigation 5.2 – BSCS Investigation 5.4 – BSCS Investigation 6.1 – BSCS activity Book 	

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Objectives:	Assessment:	Possible Resources:	Possible Strategies:
		<ul style="list-style-type: none">- Drosophila kit from most life science suppliers- BSCS Teacher Resource Book- Prepared and student-made microscope slides of a variety of organisms + tissues.- Cooperative- teacher generated materials	