USING TECHNOLOGY TO STUDY CELLULAR AND MOLECULAR BIOLOGY		
Michigan Grade Level Content Expectations: Biology		
Lesson	**Standard**	**GLCE**
1, 2, 3	B1.1A	Generate new questions that can be investigated in the laboratory or field.
1, 2, 3	B1.1B	Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions.
1, 2, 3	B1.1C	Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity – length, volume, weight, time interval, temperature – with the appropriate level of precision).
1, 2, 3	B1.1D	Identify patterns in data and relate them to theoretical models.
1, 2, 3	B1.1E	Describe a reason for a given conclusions using evidence from an investigation.
1, 2	B1.1F	Predict what would happen if the variables, methods, or timing of an investigation were changed.
1, 2, 3	B1.1G	Use empirical evidence to explain and critique the reasoning used to draw a scientific conclusion or explanation.
2, 3	B1.1H	Design and conduct a systematic scientific investigation that tests a hypothesis. Draw conclusions from data presented in charts or tables.
3	B1.1I	Distinguish between scientific explanations that are regarded as current scientific consensus and the emerging questions that active researchers investigate.
2, 3	B1.2A	Critique whether or not specific questions can be answered through scientific investigations.
3	B1.2B	Identify and critique arguments about personal or societal issues based on scientific evidence.
3	B1.2C	Develop an understanding of a scientific concept ay accessing information from multiple sources. Evaluate the scientific accuracy and significance of the information.
2, 3	B1.2D	Evaluate scientific explanations in a peer review process or discussion format.
3	B1.2F	Critique solutions to problems, given criteria and scientific constraints.
1, 3, 4	B1.2I	Explain the progression of ideas and explanations that lead to science theories that are part of the current scientific consensus or core knowledge.
1, 4	B1.2K	Analyze how science and society interact from an historical, political, economic, or social perspective.
3	B2.5B	Explain how major systems and processes work together in animals and plants, including relationships between organelles, cells, tissues, organs, organ systems, and organisms. Relate these to molecular functions.
3	B2.r6C	Recognize and explain that communication and/or interaction are required between cells to coordinate their diverse activities.
3	B2.r6E	Analyze the body's response to medical interventions such as organ transplants, medicines, and inoculations.

Michigan Grade Level Content Expectations: Algebra I		
Lesson	**Standard**	**GLCE**
1, 2, 3	L1.2.4	Organize and summarize a data set in a table, plot, chart, or spreadsheet; find patterns in a display of data; understand and critique data displays in the media.
1	L2.1.2	Calculate fluently with numerical expressions involving exponents. Use the rules of exponents, and evaluate numerical expressions involving rational and negative exponents, and transition easily between roots and exponents.
1	A1.2.1	Write and solve equations and inequalities with one or two variables to represent mathematical or applied situations.
3	S2.1.4	Differentiate between correlation and causation. Know that a strong correlation does not imply a cause-and-effect relationship. Recognize the role of lurking variables in correlation.
Michigan Grade Level Content Expectations: English Language Arts – High School		
Lesson	**Standard**	**GLCE**
All lessons	CE 1.1.3	Select and use language that is appropriate (e.g., formal, informal, literary, or technical) for the purpose, audience, and context of the text, speech, or visual representation (e.g., letter to the editor, proposal, poem, or digital story).
3, 4	CE 1.1.4	Compose drafts that convey an impression, express an opinion, raise a question, argue a position, explore a topic, tell a story, or serve another purpose, while simultaneously considering the constraints and possibilities (e.g., structure, language, use of conventions of grammar, usage, and mechanics) of the selected form or genre.
All lessons	CE 1.2.1	Write, speak, and use images and graphs to understand and discover complex ideas.
All lessons	CE 1.2.2	Write, speak, and visually represent to develop self-awareness and insight (e.g., diary, journal writing, and portfolio self-assessment).
3, 4	CE 1.3.1	Compose written, spoken, and/or multimedia compositions in a range of genres (e.g., personal narrative, biography, poem, fiction, drama, creative nonfiction, summary, literary analysis essay, research report, or work-related text): pieces that serve a variety of purposes (e.g., expressive, informative, creative, and persuasive) and that use a variety of organizational patterns (e.g., autobiography, free verse, dialogue, comparison/contrast, definition, or cause and effect).
3, 4	CE 1.3.2	Compose written and spoken essays or work-related text that demonstrate logical thinking and the development of ideas for academic, creative, and personal purposes: essays that convey the author's message by using an engaging introduction (with a clear thesis as appropriate), well-constructed paragraphs, transition sentences, and a powerful conclusion.
3, 4	CE 1.3.5	From the outset, identify and assess audience expectations and needs; consider the rhetorical effects of style, form, and content based on that assessment; and adapt communication strategies appropriately and effectively.

All lessons	CE 1.3.7	Participate collaboratively and productively in groups (e.g., response groups, work teams, discussion groups, and committees) – fulfilling roles and responsibilities, posing relevant questions, giving and following instructions, acknowledging and building on ideas and contributions of others to answer questions or to solve problems, offering dissent courteously.
All lessons	CE 1.3.9	Use the formal, stylistic, content, and mechanical conventions of a variety of genres in speaking, writing, and multimedia presentations.
3	CE 1.4.1	Identify, explore, and refine topics and questions appropriate for research.
All lessons	CE 1.4.2	Develop a system for gathering, organizing, paraphrasing, and summarizing information; select, evaluate, synthesize, and use multiple primary and secondary (print and electronic) resources.
All lessons	CE 1.4.4	Interpret, synthesize, and evaluate information/findings in various print sources and media (e.g., fact and opinion, comprehensiveness of the evidence, bias, varied perspectives, motives and credibility of the author, date of publication) to draw conclusions and implications.
All lessons	CE 1.5.1	Use writing, speaking, and visual expression to develop powerful, creative and critical messages.
3, 4	CE 2.1.1	Use a variety of pre-reading and previewing strategies (e.g., acknowledge own prior knowledge, make connections, generate questions, make predictions, scan a text for a particular purpose or audience, analyze text structures and features) to make conscious choices about how to approach the reading based on purpose, genre, level of difficulty, text demands and features.
2, 3, 4	CE 2.1.2	Make supported inferences and draw conclusions based on informational print and multimedia features (e.g., prefaces, appendices, marginal notes, illustrations, bibliographies, author's pages, footnotes, diagrams, tables, charts, maps, timelines, graphs, and other visual and special effects) and explain how authors and speakers use them to infer the organization of text and enhance understanding, convey meaning, and inspire or mislead audiences.
All lessons	CE 2.1.3	Determine the meaning of unfamiliar words, specialized vocabulary, figurative language, idiomatic expressions, and technical meanings of terms through context clues, word roots and affixes, and the use of appropriate resource materials such as print and electronic dictionaries.
3, 4	CE 2.1.5	Analyze and evaluate the components of multiple organizational patterns (e.g., compare/contrast, cause/effect, problem/solution, fact/opinion, theory/evidence).
All lessons	CE 2.1.7	Demonstrate understanding of written, spoken, or visual information by restating, paraphrasing, summarizing, critiquing, or composing a personal response; distinguish between a summary and a critique.
All lessons	CE 2.1.10	Listen to and view speeches, presentations, and multimedia works to identify and respond thoughtfully to key ideas, significant details, logical organization, fact and opinion, and propaganda
All lessons	CE 2.1.11	Demonstrate appropriate social skills of audience, group discussion, or work team behavior by listening attentively and with civility to the ideas of others, gaining the floor in respectful ways, posing appropriate questions, and tolerating ambiguity and lack of consensus.

All lessons	CE 2.1.12	Use a variety of strategies to enhance listening comprehension (e.g., monitor message for clarity and understanding, ask relevant questions, provide verbal and nonverbal feedback, notice cues such as change of pace or emphasis that indicate a new point is about to be made; and take notes to organize essential information).
All lessons	CE 2.2.2	Examine the ways in which prior knowledge and personal experience affect the understanding of written, spoken, or multimedia text.
All lessons	CE 2.3.3	Critically read and interpret instructions for a variety of tasks (e.g., completing assignments, using software, writing college and job applications).
All lessons	CE 2.3.6	Reflect on personal understanding of reading, listening, and viewing; set personal learning goals; and take responsibility for personal growth.
All lessons	CE 4.1.1	Use sentence structures and vocabulary effectively within different modes (oral and written, formal and informal) and for various rhetorical purposes.
1, 3	CE 4.1.2	Use resources to determine word meanings, pronunciations, and word etymologies (e.g., context, print and electronic dictionaries, thesauruses, glossaries, and others).
All lessons	CE 4.1.3	Use a range of linguistic applications and styles for accomplishing different rhetorical purposes (e.g., persuading others to change opinions, conducting business transactions, speaking in a public forum, discussing issues informally with peers).
All lessons	CE 4.1.4	Control standard English structures in a variety of contexts (e.g., formal speaking academic prose, business, and public writing) using language carefully and precisely.
3, 4	CE 4.1.5	Demonstrate use of conventions of grammar, usage, and mechanics in written texts, including parts of speech, sentence structure and variety, spelling, capitalization, and punctuation.

Michigan Grade Level Content Expectations: Health Education – High School		
Lesson	**Standard**	**GLCE**
All lessons	4.9	Demonstrate the ability to apply listening and assertive communication skills in situations that may involve parents, family members, other trusted adults, peers, boyfriends/girlfriends, and health professionals.
3	4.14	Evaluate the effectiveness of health-related decisions.