

USING TECHNOLOGY TO STUDY CELLULAR AND MOLECULAR BIOLOGY		
Louisiana Grade-Level Expectations: Biology		
Lesson	GLE	Descriptor
3	SI-H-A1	Write a testable question or hypothesis when given a topic
1, 2, 3	SI-H-A2	Describe how investigations can be observation, description, literature survey, classification, or experimentation
3	SI-H-A2	Plan and record step-by-step procedures for a valid investigation, select equipment and materials, and identify variables and controls
2, 3	SI-H-A2	Conduct an investigation that includes multiple trials and record, organize, and display data appropriately
1, 2	SI-H-A3	Utilize mathematics, organizational tools, and graphing skills to solve problems
1, 2, 3	SI-H-A3	Use technology when appropriate to enhance laboratory investigations and presentations of findings
1, 2, 3	SI-H-A4	Choose appropriate models to explain scientific knowledge or experimental results (e.g., objects, mathematical relationships, plans, schemes, examples, role-playing, computer simulations)
1, 3	SI-H-A5	Give an example of how new scientific data can cause an existing scientific explanation to be supported, revised, or rejected
2, 3	SI-H-A6 SI-H-A2	Write and defend a conclusion based on logical analysis of experimental data
All lessons	SI-H-B3	Cite examples of scientific advances and emerging technologies and how they affect society (e.g., MRI, DNA in forensics)
1, 2, 3	SI-H-B4	Analyze the conclusion from an investigation by using data to determine its validity
4	LS-H-B4 LS-H-B1	Identify possible positive and negative effects of advances in biotechnology
3	LS-H-F1 LS-H-E3	Analyze the interrelationships of organs in major systems
3	LS-H-G2 LS-H-G4	Discuss mechanisms of disease transmission and processes of infection
Louisiana Grade-Level Expectations: Mathematics – Grades 9 & 10		
Grade 9		
Lesson	GLE	Descriptor
1	N-2-H	Evaluate and write numerical expressions involving integer exponents
1	N-2-H	Apply scientific notation to perform computations, solve problems, and write representations of numbers
1	N-5-H	Demonstrate computational fluency with all rational numbers (e.g., estimation, mental math, technology, paper/pencil)

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1, 2	M-1-H	Distinguish between precision and accuracy
1, 2	M-1-H	Demonstrate and explain how the scale of a measuring instrument determines the precision of that instrument
1, 2	M-2-H M-3-H M-1-H	Determine appropriate units and scales to use when solving measurement problems
Grade 10		
2	D-7-H	Interpret and summarize a set of experimental data presented in a table, bar graph, line graph, scatter plot, matrix, or circle graph
1, 2	P-1-H	Generalize and represent patterns symbolically, with and without technology
1, 2	P-2-H P-3-H A-3-H	Translate among tabular, graphical, and symbolic representations of patterns in real-life situations, with and without technology
Louisiana Grade-Level Expectations: English Language Arts – Grades 9 & 10		
Lesson	GLE	Descriptor
2, 3, 4	ELA-1-H1	Extend basic and technical vocabulary using a variety of strategies, including: use of context clues, use of knowledge of Greek and Latin roots and affixes, use of denotative and connotative meanings, and tracing etymology
2, 3, 4	ELA-1-H3	Draw conclusions and make inferences in oral and written responses about ideas and information in texts, including: nonfiction works, film/visual texts, consumer/instructional materials, and public documents
2, 3, 4	ELA-1-H4	Explain ways in which ideas and information in a variety of texts (e.g., scientific reports, technical guidelines, business memos, literary texts) connect to real-life situations and other texts (9) Analyze ways in which ideas and information in texts, such as almanacs, microfiche, news sources, technical documents, Internet sources, and literary texts, connect to real-life situations and other texts or represent a view or comment on life (10)
2, 3, 4	ELA-7-H1	Demonstrate understanding of information in grade-appropriate texts using a variety of strategies, including: summarizing and paraphrasing information and story elements, comparing and contrasting information in texts, including televised news, news magazines, documentaries, and online information, comparing and contrasting complex literary elements, devices, and ideas within and across texts, examining the sequence of information and procedures in order to critique the logic or development of ideas in texts, making inferences and drawing conclusions, and making predictions and generalizations
2, 3, 4	ELA-7-H2	Solve problems using reasoning skills, including: using supporting evidence to verify solutions, analyzing the relationships between prior knowledge and life experiences and information in texts, and using technical information in specialized software programs, manuals, interviews, surveys, and access guides to Web sites
2, 3, 4	ELA-7-H4	Analyze information within and across grade-appropriate texts using various reasoning skills, including: identifying cause-effect relationships, raising questions, reasoning inductively and deductively, and generating a theory or hypothesis distinguishing facts from opinions and probability

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3, 4	ELA-2-H1	Develop organized, coherent paragraphs that include the following: topic sentences, logical sequence, transitional words and phrases, appropriate closing sentences, and parallel construction where appropriate
3, 4	ELA-2-H1	Develop multiparagraph compositions organized with the following: a clearly stated central idea or thesis statement, a clear, overall structure that includes an introduction, a body, and an appropriate conclusion, and supporting paragraphs appropriate to the topic organized in a logical sequence (e.g., spatial order, order of importance, ascending/descending order, chronological order, parallel construction)
3, 4	ELA-2-H4	Develop paragraphs and complex, multiparagraph compositions using all modes of writing (description, narration, exposition, and persuasion) emphasizing exposition and persuasion
3, 4	ELA-3-H3	Use correct spelling conventions when writing and editing
All lessons	ELA-4-H1	Use standard English grammar, diction, and syntax when responding to questions, participating in informal group discussions, and making presentations
All lessons	ELA-4-H1	Select language appropriate to specific purposes and audiences when speaking, including: delivering informational/book reports in class, conducting interviews/surveys of classmates or the general public, and participating in class discussions
All lessons	ELA-4-H2	Listen to oral instructions and presentations, speeches, discussions, and carry out procedures, including: taking accurate notes, writing summaries or responses, and forming groups
All lessons	ELA-4-H2	Organize and use precise language to deliver oral directions and instructions about general, technical, or scientific topics
All lessons	ELA-4-H4	Use active listening strategies, including: monitoring messages for clarity, selecting and organizing essential information, noting cues such as changes in pace, and generating and asking questions concerning a speaker's content, delivery, and attitude toward the subject
3, 4	ELA-4-H4	Deliver clear, coherent, and concise oral presentations about information and ideas in texts
2, 3, 4	ELA-5-H2	Locate, analyze, and synthesize information from a variety of grade-appropriate resources, including: multiple printed texts (e.g., encyclopedias, atlases, library catalogs, specialized dictionaries, almanacs, technical encyclopedias, and periodicals), electronic sources (e.g., Web sites, databases), and other media sources (e.g., community and government data, television and radio resources, and other audio and visual materials)
2, 3, 4	ELA-5-H6	Analyze information found in a variety of complex graphic organizers, including detailed maps, comparative charts, extended tables, graphs, diagrams, cutaways, overlays, and sidebars to determine usefulness for research

Louisiana Health Education Content Standards: Grades 9 – 12

Lesson	Benchmark	Descriptor
3	1-H-2	Identify the causes, symptoms, treatment and prevention of various diseases and disorders (e.g., cardiovascular diseases, STDs, eating disorders)
All lessons	5-H-1	Demonstrate effective communication skills and identify the impact of communication on relationships with family, peers, and others