

**USING TECHNOLOGY TO STUDY CELLULAR AND MOLECULAR BIOLOGY**

**Pennsylvania Academic Standards for Science and Technology – Grades 10 & 12**

<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
2, 3	3.1.12.B	Apply concepts of models as a method to predict and understand science and technology.
1, 2	3.1.12.D	Analyze scale as a way of relating concepts and ideas to one another by some measure.
2, 3	3.2.12.C	Apply the elements of scientific inquiry to solve multi-step problems.
1, 3, 4	3.8.12.A.2	Evaluate technological developments that have changed the way humans do work and discuss their impacts (e.g., genetically engineered crops).
3, 4	3.8.12.A.3	Evaluate socially proposed limitations of scientific research and technological application.
3, 4	3.8.12.C.2	Analyze scientific and technological solutions through the use of risk/benefit analysis.
3, 4	3.8.12.C.3	Analyze and communicate the positive or negative impacts that a recent technological invention had on society.
3, 4	3.8.12.C.4	Evaluate and describe potential impacts from emerging technologies and the consequences of not keeping abreast of technological advancements (e.g., assessment alternatives, risks, benefits, costs, economic impacts, constraints).

**Pennsylvania Academic Standards for Reading, Writing, Speaking, and Listening – Grade 11**

<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
1, 2, 3, 4	1.1.11.D	Identify, describe, evaluate and synthesize the essential ideas in text. Assess those reading strategies that were most effective in learning from a variety of texts.
1, 2, 3	1.1.11.F	Understand the meaning of and apply key vocabulary across the various subject areas.
1, 2, 3, 4	1.1.11.G.3	Make extensions to related ideas, topics or information.
All lessons	1.2.11.A	Read and understand essential content of informational texts and documents in all academic areas.
3, 4	1.5.11.B	Write using well-developed content appropriate for the topic.
3, 4	1.5.11.C.1	Sustain a logical order throughout the piece.
All lessons	1.6.11.A	Listen to others.

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<b>All lessons</b>	<b>1.6.11.D</b>	Contribute to discussions.
<b>2, 3, 4</b>	<b>1.6.11.E.5</b>	Organize and participate in informal debate around a specific topic.
<b>3, 4</b>	<b>1.6.11.F.1</b>	Use various forms of media to elicit information, to make a student presentation and to complete class assignments and projects.
<b>3, 4</b>	<b>1.8.11.B</b>	Locate information using appropriate sources and strategies.
<b>3, 4</b>	<b>1.8.11.C</b>	Organize, summarize and present the main ideas from research.
<b>Pennsylvania Academic Standards for Mathematics – Grade 11</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
<b>1</b>	<b>2.2.11.A</b>	Develop and use computation concepts, operations and procedures with real numbers in problem-solving situations.
<b>1</b>	<b>2.2.11.A</b>	Develop and use computation concepts, operations and procedures with real numbers in problem-solving situations.
<b>1, 2</b>	<b>2.2.11.E</b>	Recognize that the degree of precisions needed in calculating a number depends on how the results will be used and the instruments used to generate the measure.
<b>2</b>	<b>2.3.11.A</b>	Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.
<b>1</b>	<b>2.5.11.B</b>	Use symbols, mathematical terminology, standard notation, mathematical rules, graphing and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas and results.
<b>1</b>	<b>2.5.11.C</b>	Present mathematical procedures and results clearly, systematically, succinctly and correctly.
	<b>2.7.11.B</b>	Apply probability and statistics to perform an experiment involving a sample and generalize its results to the entire population.
<b>1, 2</b>	<b>2.8.11.Q</b>	Represent functional relationships in tables, charts and graphs.