

Pacing Guide for 9th Curriculum

Course Title: BIO103 Honors

Length of Course: \_\_\_\_\_

Week Number	Chapter & Lesson	COS	Objectives	Strategies / Materials Needed
Week 1	<ul style="list-style-type: none"> <li>- Syllabus</li> <li>- Textbook Scavenger Hunt</li> </ul>		<i>SWBAT</i> 1. Understand the basics of the classroom rules & of their textbooks.	Textbook Scavenger Hunt
Weeks 2	Chapter 1 – Introduction to Biology	1. Select appropriate laboratory glassware, balances, time measuring equipment, and optical instruments to conduct an experiment.	Describe the steps of the scientific method Compare controls, dependent variables, and independent variables Identify safe laboratory procedures when handling chemicals and using Bunsen burners and laboratory glassware Use appropriate SI units for measuring length, volume, and mass	Metric Metric Measurements Lab
Week 3	Chapter 1 – Introduction to Biology	1. Select appropriate laboratory glassware, balances, time measuring equipment, and optical instruments to conduct an experiment.	Describe the steps of the scientific method Compare controls, dependent variables, and independent variables Identify safe laboratory procedures when handling chemicals and using Bunsen burners and laboratory glassware Use appropriate SI units for measuring length, volume, and mass	Properties of Life Activity
Weeks 4	Chapters 2 & 3 – Chemimstry & Water	2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.	1. Identify functions of carbohydrates, lipids, proteins, and nucleic acids in cellular activities 2. Compare the reaction of plant and animal cells in isotonic, hypotonic, and hypertonic solutions 3. Explain how surface area, cell size, temperature, light, and pH affect cellular activities 4. Apply the concept of fluid pressure to biological systems	Properties of Water Activity

Week 5	Chapters 2 & 3 – Chemimstry & Water	2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.	1. Identify functions of carbohydrates, lipids, proteins, and nucleic acids in cellular activities 2. Compare the reaction of plant and animal cells in isotonic, hypotonic, and hypertonic solutions 3. Explain how surface area, cell size, temperature, light, and pH affect cellular activities 4. Apply the concept of fluid pressure	Lab: pH
Week 6	Chapters 2 & 3 – Chemimstry & Water	2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.	1. Identify functions of carbohydrates, lipids, proteins, and nucleic acids in cellular activities 2. Compare the reaction of plant and animal cells in isotonic, hypotonic, and hypertonic solutions 3. Explain how surface area, cell size, temperature, light, and pH affect cellular activities 4. Apply the concept of fluid pressure	Osmosis Activity
Week 7	Chapters 2 & 3 – Chemimstry & Water	2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.	1. Identify functions of carbohydrates, lipids, proteins, and nucleic acids in cellular activities 2. Compare the reaction of plant and animal cells in isotonic, hypotonic, and hypertonic solutions 3. Explain how surface area, cell size, temperature, light, and pH affect cellular activities 4. Apply the concept of fluid pressure	Supersize Me Video & Project
Week 8	Chapters 4 & 5 – Molecules of Cells	4. Describe similarities and differences of cell organelles, using diagrams and tables.	1. Identify scientists who contributed to the cell theory 2. Distinguish between prokaryotic and eukaryotic cells 3. Identify various technologies used to observe cells	Supersize Me Project
Weeks 9	Chapters 4 & 5 – Molecules of Cells	4. Describe similarities and differences of cell organelles, using diagrams and tables.	1. Identify scientists who contributed to the cell theory 2. Distinguish between prokaryotic and eukaryotic cells 3. Identify various technologies used to observe cells	Food Label Activity

Week 10	Chapters 4 & 5 – Molecules of Cells	4. Describe similarities and differences of cell organelles, using diagrams and tables.	<ol style="list-style-type: none"> <li>1. Identify scientists who contributed to the cell theory</li> <li>2. Distinguish between prokaryotic and eukaryotic cells</li> <li>3. Identify various technologies used to observe cells</li> </ol>	Macromolecule Crossword
Week 11	Chapters 4 & 5 – Molecules of Cells	4. Describe similarities and differences of cell organelles, using diagrams and tables.	<ol style="list-style-type: none"> <li>1. Identify scientists who contributed to the cell theory</li> <li>2. Distinguish between prokaryotic and eukaryotic cells</li> <li>3. Identify various technologies used to observe cells</li> </ol>	Taste Test
Week 12	Chapters 6 & 7 – Tour of the Cell	<ol style="list-style-type: none"> <li>2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.</li> <li>5. Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.</li> </ol>	<ol style="list-style-type: none"> <li>1. Distinguish between osmosis &amp; diffusion.</li> <li>2. Distinguish between plant &amp; animal cells.</li> <li>3. Recognize that cells differentiate to perform specific functions.</li> </ol>	Cell Coloring Page
Week 13	Chapters 6 & 7 – Tour of the Cell	<ol style="list-style-type: none"> <li>2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.</li> <li>5. Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.</li> </ol>	<ol style="list-style-type: none"> <li>1. Distinguish between osmosis &amp; diffusion.</li> <li>2. Distinguish between plant &amp; animal cells.</li> <li>3. Recognize that cells differentiate to perform specific functions.</li> </ol>	Cell Labeling

Weeks 14	Chapters 6 & 7 – Tour of the Cell	<p>2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.</p> <p>5. Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.</p>	<ol style="list-style-type: none"> <li>1. Distinguish between osmosis &amp; diffusion.</li> <li>2. Distinguish between plant &amp; animal cells.</li> <li>3. Recognize that cells differentiate to perform specific functions.</li> </ol>	Cell Lab
Week 15	Chapters 6 & 7 – Tour of the Cell	<p>2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.</p> <p>5. Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.</p>	<ol style="list-style-type: none"> <li>1. Distinguish between osmosis &amp; diffusion.</li> <li>2. Distinguish between plant &amp; animal cells.</li> <li>3. Recognize that cells differentiate to perform specific functions</li> </ol>	Cell Lab II
Week 16	Chapters 6 & 7 – Tour of the Cell	<p>2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis.</p> <p>5. Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.</p>	<ol style="list-style-type: none"> <li>1. Distinguish between osmosis &amp; diffusion.</li> <li>2. Distinguish between plant &amp; animal cells.</li> <li>3. Recognize that cells differentiate to perform specific functions</li> </ol>	Cell Projects

Week 17	Chapters 6 & 7 – Tour of the Cell	2. Describe cell processes necessary for achieving homeostasis, including active and passive transport, osmosis, diffusion, exocytosis, and endocytosis. 5. Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.	<ol style="list-style-type: none"> <li>1. Distinguish between osmosis &amp; diffusion.</li> <li>2. Distinguish between plant &amp; animal cells.</li> <li>3. Recognize that cells differentiate to perform specific functions</li> </ol>	Cell Projects cont.
Weeks 18 19 – 24	Chapters 8– The Working Cell: Cell Respiration	3. Identify reactants and products associated with photosynthesis and cellular respiration and the purposes of these two processes.	<ol style="list-style-type: none"> <li>1. Identify the processes of photosynthesis &amp; respiration.</li> <li>2. Recognize the by-products of both processes.</li> </ol>	Cell Respiration Equation Activity
Week 19	Chapters 8– The Working Cell: Cell Respiration	3. Identify reactants and products associated with photosynthesis and cellular respiration and the purposes of these two processes.	<ol style="list-style-type: none"> <li>1. Identify the processes of photosynthesis &amp; respiration.</li> <li>2. Recognize the by-products of both processes.</li> </ol>	Lab: Cell Respiration I
Week 20	Chapter 8– The Working Cell: Cell Respiration	3. Identify reactants and products associated with photosynthesis and cellular respiration and the purposes of these two processes.	<ol style="list-style-type: none"> <li>1. Identify the processes of photosynthesis &amp; respiration.</li> <li>2. Recognize the by-products of both processes.</li> </ol>	Lab: Cell Respiration II
Week 21	Chapter 9– The Working Cell: Photosynthesis	3. Identify reactants and products associated with photosynthesis and cellular respiration and the purposes of these two processes.	<ol style="list-style-type: none"> <li>1. Identify the processes of photosynthesis &amp; respiration.</li> <li>2. Recognize the by-products of both processes.</li> </ol>	Photosynthesis Activity
Week 22	Chapter 9– The Working Cell:	3. Identify reactants and products associated	<ol style="list-style-type: none"> <li>1. Identify the processes of photosynthesis &amp; respiration.</li> </ol>	Lab: Photosynthesis

	Photosynthesis	with photosynthesis and cellular respiration and the purposes of these two processes.	2. Recognize the by-products of both processes.	I
Week 23	Chapter 9– The Working Cell: Photosynthesis	3. Identify reactants and products associated with photosynthesis and cellular respiration and the purposes of these two processes.	1. Identify the processes of photosynthesis & respiration. 2. Recognize the by-products of both processes.	Lab: Photosynthesis II
Week 24	Chapter 12– Cell Reproduction: Mitosis	3. Identify reactants and products associated with photosynthesis and cellular respiration and the purposes of these two processes.	1. Identify the processes of photosynthesis & respiration. 2. Recognize the by-products of both processes.	Cell Cycle Drawing
Week 25	Chapter 12– Cell Reproduction: Mitosis	6. Describe the roles of mitotic and meiotic divisions during reproduction, growth, and repair of cells.	1. Compare sperm and egg formation in terms of ploidy 2. Compare sexual and asexual reproduction. 3. Distinguish between mitosis & meiosis.	Mitosis Micro-fish Lab
Week 26	Chapters 12– Cell Reproduction: Mitosis	6. Describe the roles of mitotic and meiotic divisions during reproduction, growth, and repair of cells.	1. Compare sperm and egg formation in terms of ploidy 2. Compare sexual and asexual reproduction. 3. Distinguish between mitosis & meiosis.	Lab: Onion Root/Cheek Cell
Week 27	Chapter 13– Cell Reproduction: Meiosis	6. Describe the roles of mitotic and meiotic divisions during reproduction, growth, and repair of cells.	1. Compare sperm and egg formation in terms of ploidy 2. Compare sexual and asexual reproduction. 3. Distinguish between mitosis & meiosis.	Video: Miracle of Life
Week 28	Chapter 13– Cell Reproduction: Meiosis	6. Describe the roles of mitotic and meiotic divisions during	1. Compare sperm and egg formation in terms of ploidy 2. Compare sexual and asexual reproduction.	Activity: Differences between Mitosis & Meiosis

		reproduction, growth, and repair of cells.	3. Distinguish between mitosis & meiosis.	
Week 29	Chapter 13– Cell Reproduction: Meiosis	6. Describe the roles of mitotic and meiotic divisions during reproduction, growth, and repair of cells.	<ol style="list-style-type: none"> <li>1. Compare sperm and egg formation in terms of ploidy</li> <li>2. Compare sexual and asexual reproduction.</li> <li>3. Distinguish between mitosis &amp; meiosis.</li> </ol>	Meiosis Coloring Activity
Week 30	Chapter 14- Intro to Genetics	<ol style="list-style-type: none"> <li>7. Apply Mendel’s law to determine phenotypic and genotypic probabilities of offspring.</li> <li>8. Identify the structure and function of DNA, RNA, and protein.</li> </ol>	<ol style="list-style-type: none"> <li>1. Explain relationships among DNA, genes, and chromosomes</li> <li>2. Relate ways chance, mutagens, and genetic engineering increase diversity.</li> <li>3. Relating genetic disorders and disease to patterns of genetic inheritance.</li> </ol>	Genetics Crossword
Week 31	Chapter 14- Intro to Genetics	<ol style="list-style-type: none"> <li>7. Apply Mendel’s law to determine phenotypic and genotypic probabilities of offspring.</li> <li>8. Identify the structure and function of DNA, RNA, and protein.</li> </ol>	<ol style="list-style-type: none"> <li>1. Explain relationships among DNA, genes, and chromosomes</li> <li>2. Relate ways chance, mutagens, and genetic engineering increase diversity.</li> <li>3. Relating genetic disorders and disease to patterns of genetic inheritance.</li> </ol>	Penny Genetics
Week 32	Chapter 15 – Basis of Inheritance	<ol style="list-style-type: none"> <li>7. Apply Mendel’s law to determine phenotypic and genotypic probabilities of offspring.</li> <li>8. Identify the structure and function of DNA, RNA, and protein.</li> </ol>	<ol style="list-style-type: none"> <li>1. Explain relationships among DNA, genes, and chromosomes</li> <li>2. Relate ways chance, mutagens, and genetic engineering increase diversity.</li> <li>3. Relating genetic disorders and disease to patterns of genetic inheritance.</li> </ol>	Head & Face Variation Activity

Week 33	Chapter 15 – Basis of Inheritance	<p>7. Apply Mendel’s law to determine phenotypic and genotypic probabilities of offspring.</p> <p>8. Identify the structure and function of DNA, RNA, and protein.</p>	<p>1. Explain relationships among DNA, genes, and chromosomes</p> <p>2. Relate ways chance, mutagens, and genetic engineering increase diversity.</p> <p>3. Relating genetic disorders and disease to patterns of genetic inheritance.</p>	Genetics with a Smile Activity
Week 34	Chapter 15 – Basis of Inheritance	<p>7. Apply Mendel’s law to determine phenotypic and genotypic probabilities of offspring.</p> <p>8. Identify the structure and function of DNA, RNA, and protein.</p>	<p>1. Explain relationships among DNA, genes, and chromosomes</p> <p>2. Relate ways chance, mutagens, and genetic engineering increase diversity.</p> <p>3. Relating genetic disorders and disease to patterns of genetic inheritance.</p>	Heredity Simulation Activity
Week 35	Chapter 16 – Molecular Basis of Inheritance	<p>7. Apply Mendel’s law to determine phenotypic and genotypic probabilities of offspring.</p> <p>8. Identify the structure and function of DNA, RNA, and protein.</p>	<p>1. Explain relationships among DNA, genes, and chromosomes</p> <p>2. Relate ways chance, mutagens, and genetic engineering increase diversity.</p> <p>3. Relating genetic disorders and disease to patterns of genetic inheritance.</p>	Karotype Activity
Week 36	Chapter 16 – Molecular Basis of Inheritance	<p>7. Apply Mendel’s law to determine phenotypic and genotypic probabilities of offspring.</p> <p>8. Identify the structure and function of DNA, RNA, and protein.</p>	<p>1. Explain relationships among DNA, genes, and chromosomes</p> <p>2. Relate ways chance, mutagens, and genetic engineering increase diversity.</p> <p>3. Relating genetic disorders and disease to patterns of genetic inheritance.</p>	Recessive Disorders Project