

Inquiry Investigations™
Cellular World MODULE - 1271974
Grades: 7-10

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Delaware Standards and Curricula
Science
Grade 7

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understanding: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	<p>Frame and refine questions that can be investigated scientifically, and generate testable hypotheses.</p> <ul style="list-style-type: none"> • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.2.	<p>Design and conduct investigations with controlled variables to test hypotheses.</p> <ul style="list-style-type: none"> • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and

		<p>Function</p> <ul style="list-style-type: none"> Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.3.</p>	<p>Accurately collect data through the selection and use of tools and techniques appropriate to the investigation. Construct tables, diagrams and graphs, showing relationships between two variables, to display and facilitate analysis of data. Compare and question results with and from other students.</p> <ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase Why Cells Aren't Big: Virtual Lab
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.4.</p>	<p>Form explanations based on accurate and logical analysis of evidence. Revise the explanation using alternative descriptions, predictions, models and knowledge from other sources as well as results of further investigation.</p> <ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell

		<p>Organization</p> <ul style="list-style-type: none"> • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.5.</p>	<p>Communicate scientific procedures, data, and explanations to enable the replication of results. Use computer technology to assist in communicating these results. Critical review is important in the analysis of these results.</p> <ul style="list-style-type: none"> • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth

		<p>Curves</p> <ul style="list-style-type: none"> Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	1.1.6.	<p>Use mathematics, reading, writing, and technology in conducting scientific inquiries.</p> <ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.11.	<p>Calculate the density of various solid materials. Use density to predict whether an object will sink or float in water. Given the density of various solids and liquids, create a density column and explain the arrangement in terms of density.</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	1.1.12.	<p>Use physical properties to distinguish and separate one substance or material from another.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	1.1.13.	<p>Distinguish between homogeneous and heterogeneous mixtures. Using their physical properties, design and conduct an investigation to separate the components of a homogeneous or heterogeneous mixture. Recognize that a homogeneous mixture is a solution.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments

GRADE LEVEL EXPECTATION	1.1.14.	<p>Prepare solutions of different concentrations recognizing that the properties of the solution (color, density, boiling point) depend on the nature and concentration of the solute and solvent.</p> <ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	1.1.17.	<p>Conduct investigations to demonstrate the process of diffusion. Use the particle model to describe the movement of materials from an area of higher concentration to an area of lower concentration.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	1.1.18.	<p>Show that mass is conserved when adding a solute to a solvent (mass of solvent + mass of solute = total mass of solution).</p> <ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	1.1.31.	<p>Classify organisms based on shared characteristics into currently recognized kingdoms and justify their placement. Give examples of organisms from each kingdom.</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	1.1.32.	<p>Observe and sketch cells using microscopes and other appropriate tools. Compare and contrast plant, animal, protist, and bacterial cells by noting the presence or absence of major organelles (i.e., cell membrane, cell wall, nucleus, chloroplasts, mitochondria and vacuoles) using the sketches and other resources. Research external conditions needed by a variety of organisms for survival such as temperature, turbidity, pH, salinity, and amount of dissolved oxygen, phosphates, and nitrates. Predict how organisms may respond to changes in these external conditions based on research findings.</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells

		<ul style="list-style-type: none"> • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.33.</p>	<p>Recognize that reproduction is a process that occurs in all living systems and is essential to the continuation of the species. Use models or diagrams to identify the structures of a flowering plant that produce eggs and sperm and explain that plants as well as animals can reproduce sexually.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cells and Energy: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.34.</p>	<p>Given varied scenarios (including one or two parent reproduction, and having traits identical to or different than the parents), classify offspring as either sexually or asexually produced and justify your response.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves

GRADE LEVEL EXPECTATION	1.1.35.	<p>Compare and contrast asexual and sexual reproduction in terms of potential variation and adaptation to a static or changing environment. Relate advantages and/or disadvantages of each strategy.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	1.1.36.	<p>Make a simple labeled drawing of human reproductive cells. Indicate that the sex cells (sperm and egg) each have half of the chromosomal number (23) as a fertilized egg (46). The fertilized egg has the same number of chromosomes as each of the body cells of the new organism. Recognize that different organisms may have different numbers of chromosomes and that the number of chromosomes does not relate to the complexity of the organism.</p> <ul style="list-style-type: none"> • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	1.1.37.	<p>Make a simple labeled drawing of asexual reproduction as it occurs in sexually produced organisms at the cellular level. Indicate that resulting cells contain an identical copy of genetic information from the parent cell.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	1.1.38.	<p>Describe the relationship between genes, chromosomes, and DNA in terms of location and relative size.</p> <ul style="list-style-type: none"> • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots

		<ul style="list-style-type: none"> Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.3.	Enduring Understanding: Understanding past processes and contributions is essential in building scientific knowledge.
GRADE LEVEL EXPECTATION	1.3.1.	<p>Research the sequence of events that led to the formation of the cell theory and correlate these events with technological advancements (e.g., hand lens, microscopes, and staining techniques).</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD Cell Process: Teacher Resource CD Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase Why Cells Aren't Big: Virtual Lab
CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.1.	Enduring Understanding: The structures of materials determine their properties.
GRADE LEVEL EXPECTATION	2.1.5.	Distinguish between physical properties that are dependent upon mass (size, shape) and those physical properties such as boiling point, melting point, solubility, density, conduction of heat and pH of a substance or material that are not altered when the mass of the material is

		<p>changed.</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	2.1.6.	<p>Calculate the density of various solid materials. Use density to predict whether an object will sink or float in water. Given the density of various solids and liquids, create a density column and explain the arrangement in terms of density.</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	2.1.7.	<p>Use physical properties to distinguish and separate one substance or material from another.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.2.	Enduring Understanding: The properties of the mixture are based on the properties of its components.
GRADE LEVEL EXPECTATION	2.2.1.	<p>Distinguish between homogeneous and heterogeneous mixtures. Using their physical properties, design and conduct an investigation to separate the components of a homogeneous or heterogeneous mixture. Recognize that a homogeneous mixture is a solution.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	2.2.2.	<p>Prepare solutions of different concentrations recognizing that the properties of the solution (color, density, boiling point) depend on the nature and concentration of the solute and solvent.</p> <ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	2.2.6.	<p>Conduct investigations to demonstrate the process of diffusion. Use the particle model to describe the movement of materials from an area of higher concentration to an area of lower concentration.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.3.	Enduring Understanding: When materials interact within a closed system, the total mass of the system remains the same.
GRADE LEVEL EXPECTATION	2.3.1.	<p>Show that mass is conserved when adding a solute to a solvent (mass of solvent + mass of solute = total mass of solution).</p>

		<ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.1.	Enduring Understanding: Living systems, from the organismic to the cellular level, demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	6.1.2.	<p>Classify organisms based on shared characteristics into currently recognized kingdoms and justify their placement. Give examples of organisms from each kingdom.</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	6.1.3.	<p>Explain that individual cells are able to carry out basic life functions that are similar in organisms; however, explain that in multi-cellular organisms, cells become specialized, interdependent upon one another, and unable to survive independently.</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD Cell Process: Teacher Resource CD Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase Why Cells Aren't Big: Virtual Lab

<p>GRADE LEVEL EXPECTATION</p>	<p>6.1.4.</p>	<p>Describe the hierarchical organization of multi-cellular organisms. Recognize that multi-celled organisms are organized as specialized cells within tissues that make up organs within organ systems, which work together to carry out life processes for the entire organism.</p> <ul style="list-style-type: none"> • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
<p>GRADE LEVEL EXPECTATION</p>	<p>6.1.5.</p>	<p>Observe and sketch cells using microscopes and other appropriate tools. Compare and contrast plant, animal, protist, and bacterial cells by noting the presence or absence of major organelles (i.e., cell membrane, cell wall, nucleus, chloroplasts, mitochondria and vacuoles) using the sketches and other resources.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Process: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
<p>GRADE LEVEL EXPECTATION</p>	<p>6.1.6.</p>	<p>Research the sequence of events that led to the formation of the cell theory and correlate these events with technological advancements (e.g., hand lens, microscopes, and staining techniques).</p>

		<ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Process: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cells and Energy: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.2.	Enduring Understanding: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	6.2.1.	<p>Recognize that the process of photosynthesis occurs in the chloroplasts of producers. Summarize the basic process in which energy from sunlight is used to make sugars from carbon dioxide and water (photosynthesis). Indicate that this food can be used immediately, stored for later use, or used by other organisms.</p> <ul style="list-style-type: none"> • Cells and Energy: Teacher Resource CD • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	6.2.2.	<p>Recognize that the process of cellular respiration in the mitochondria of both plants and animals releases energy from food. Indicate that this food provides the energy and materials for repair and growth of cells. Explain the complementary nature between photosynthesis and cellular respiration.</p>

		<ul style="list-style-type: none"> • Cell Structure and Function: Teacher Resource CD • Cells and Energy: Teacher Resource CD • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.3.	Enduring Understanding: Organisms respond to internal and external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	6.3.1.	<p>Research external conditions needed by a variety of organisms for survival such as temperature, turbidity, pH, salinity, and amount of dissolved oxygen, phosphates, and nitrates. Predict how organisms may respond to changes in these external conditions based on research findings.</p> <ul style="list-style-type: none"> • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.1.	Enduring Understanding: Organisms reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	7.1.1.	<p>Recognize that reproduction is a process that occurs in all living systems and is essential to the continuation of the species. Use models or diagrams to identify the structures of a flowering plant that produce eggs and sperm and explain that plants, as well as, animals can reproduce sexually.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cells and Energy: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.1.2.	<p>Given varied scenarios (including one or two parent reproduction, and having traits identical to or different than the parents), classify offspring as either sexually or asexually produced and justify your response.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD

		<ul style="list-style-type: none"> Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.1.3.	<p>Compare and contrast asexual and sexual reproduction in terms of potential variation and adaptation to a static or changing environment. Relate advantages and/or disadvantages of each strategy.</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.1.4.	<p>Make a simple labeled drawing of human reproductive cells. Indicate that the sex cells (sperm and egg) each have half of the chromosomal number (23) as a fertilized egg (46). The fertilized egg has the same number of chromosomes as each of the body cells of the new organism. Recognize that different organisms may have different numbers of chromosomes and that the number of chromosomes does not relate to the complexity of the organism.</p> <ul style="list-style-type: none"> Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	7.1.5.	<p>Make a simple labeled drawing of asexual reproduction as it occurs in sexually produced organisms at the cellular level. Indicate that resulting cells contain an identical copy of genetic information from the parent cell.</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.1.6.	<p>Describe the relationship between genes, chromosomes, and DNA in terms of location and relative size.</p> <ul style="list-style-type: none"> Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell

		<p>Organization</p> <ul style="list-style-type: none"> Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	7.1.7.	<p>Explain how the sex chromosomes inherited from each parent determines the gender of the offspring.</p> <ul style="list-style-type: none"> Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understanding: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with adaptive traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	7.2.1.	<p>Explain through the use of models or diagrams, why sexually-produced offspring are not identical to their parents.</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves

Grade 8

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understanding: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	<p>Frame and refine questions that can be investigated scientifically, and generate testable hypotheses.</p> <ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA

		<p>in Plant Cells</p> <ul style="list-style-type: none"> Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase Why Cells Aren't Big: Virtual Lab
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.2.</p>	<p>Design and conduct investigations with controlled variables to test hypotheses.</p> <ul style="list-style-type: none"> Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.3.</p>	<p>Accurately collect data through the selection and use of tools and techniques appropriate to the investigation. Construct tables, diagrams and graphs, showing relationships between two variables, to display and facilitate analysis of data. Compare and question results with and from other students.</p> <ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and

		<p>Function</p> <ul style="list-style-type: none"> • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.4.</p>	<p>Form explanations based on accurate and logical analysis of evidence. Revise the explanation using alternative descriptions, predictions, models and knowledge from other sources as well as results of further investigation.</p> <ul style="list-style-type: none"> • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase

		<ul style="list-style-type: none"> • Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.5.	<p>Communicate scientific procedures, data, and explanations to enable the replication of results. Use computer technology to assist in communicating these results. Critical review is important in the analysis of these results.</p> <ul style="list-style-type: none"> • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	1.1.6.	<p>Use mathematics, reading, writing, and technology in conducting scientific inquiries.</p> <ul style="list-style-type: none"> • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots

		<ul style="list-style-type: none"> • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.37.	<p>Use models to describe how the relative positions of the Sun, Moon, and Earth account for Moon phases, eclipses, and tides.</p> <ul style="list-style-type: none"> • Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	1.1.51.	<p>Research and report on reproductive strategies of different organisms (i.e., broadcast spawning versus nurturing parenting) that allow them to be successful.</p> <ul style="list-style-type: none"> • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	1.1.53.	<p>Conduct a natural selection simulation to demonstrate how physical adaptations (i.e., protective camouflage, long neck for food gathering, muscular legs for running, heavy beak for nut cracking, etc...) have selective advantages for an organism. Research and report on beneficial physical adaptations of a variety of organisms.</p> <ul style="list-style-type: none"> • Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	1.1.55.	<p>Conduct simulations to investigate how organisms fulfill basic needs (i.e., food, shelter, air, space light/dark, and water) in a competitive environment. Relate how competition for resources can determine survival.</p> <ul style="list-style-type: none"> • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	1.1.56.	<p>Examine an assortment of plants and animals and use simple classification keys, based on observable features, to sort and group the organisms.</p> <ul style="list-style-type: none"> • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	1.1.58.	<p>Survey the diversity of organisms in a local or model ecosystem. Recognizing that a population consists of all individuals of a species that occur together at a given place and time, describe how to estimate and then calculate the size of a large population of a variety of organisms. Chart the diversity of the organisms in the ecosystem.</p> <ul style="list-style-type: none"> • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth

		Curves
GRADE LEVEL EXPECTATION	1.1.61.	Construct a data table or line graph to show population changes of a selected species over time. Describe the population changes portrayed by the graph. <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	1.1.62.	Observe graphs or data tables showing both the population growth of a species and the consequences of resource depletion on the population. Analyze the data and explain the effect that may occur from exponential growth of a population (given finite resources). <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understanding: The development of technology and advancement in science influence and drive each other forward.
GRADE LEVEL EXPECTATION	1.2.8.	Record and interpret daily weather measurements over an extended period of time using a variety of instruments (i.e., barometer, anemometer, sling psychrometer, rain gauge, and thermometer) in order to predict and to identify weather patterns. <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.3.	Enduring Understanding: Understanding past processes and contributions is essential in building scientific knowledge.
GRADE LEVEL EXPECTATION	1.3.2.	Describe how scientists have acquired knowledge about components of our Solar System. Recognize the importance of people and technologies that have led to our current understanding of space. <ul style="list-style-type: none"> Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
CONTENT STANDARD	DE.4.	Earth in Space
PERFORMANCE INDICATOR / GLE	4.1.	Enduring Understanding: Observable, predictable patterns of movement in the Sun, Earth, Moon system occur because of gravitational interaction and energy from the Sun.
GRADE LEVEL EXPECTATION	4.1.4.	Use models to describe how the relative positions of the Sun, Moon, and Earth account for Moon phases, eclipses, and tides. <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
CONTENT STANDARD	DE.4.	Earth in Space
PERFORMANCE INDICATOR / GLE	4.3.	Enduring Understanding: Technology expands our knowledge of the Solar System.
GRADE LEVEL EXPECTATION	4.3.1.	Describe how scientists have acquired knowledge about components of our Solar System. Recognize the importance of people and technologies that have led to our current understanding of space. <ul style="list-style-type: none"> Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test

		for Catalase
CONTENT STANDARD	DE.5.	Earth's Dynamic Systems
PERFORMANCE INDICATOR / GLE	5.3.	Enduring Understanding: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	5.3.2.	Record and interpret daily weather measurements over an extended period of time using a variety of instruments (i.e., barometer, anemometer, sling psychrometer, rain gauge, and thermometer) in order to predict and to identify weather patterns. <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.1.	Enduring Understanding: Organisms reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	7.1.1.	Relate the advantages and disadvantages of different reproductive strategies in terms of energy expenditure per offspring and survival rates of that offspring. <ul style="list-style-type: none"> Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.1.2.	Research and report on reproductive strategies of different organisms (i.e., broadcast spawning versus nurturing parenting) that allow them to be successful. <ul style="list-style-type: none"> Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understanding: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with adaptive traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	7.2.1.	Recognize that species acquire many of their unique characteristics through biological adaptations, which involve the selection of naturally occurring variations in populations. <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	7.2.4.	Conduct a natural selection simulation to demonstrate how physical adaptations (i.e., protective camouflage, long neck for food gathering, muscular legs for running, heavy beak for nut cracking, etc.) have selective advantages for an organism. Research and report on beneficial physical adaptations of a variety of organisms. <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
GRADE LEVEL	7.2.6.	Conduct simulations to investigate how organisms fulfill basic needs (i.e., food, shelter, air,

EXPECTATION		space light/dark, and water) in a competitive environment. Relate how competition for resources can determine survival. <ul style="list-style-type: none"> Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.2.7.	Examine an assortment of plants and animals and use simple classification keys, based on observable features, to sort and group the organisms. <ul style="list-style-type: none"> Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
CONTENT STANDARD	DE.8.	Ecology
PERFORMANCE INDICATOR / GLE	8.1.	Enduring Understanding: Organisms and their environments are interconnected. Changes in one part of the system will affect other parts of the system.
GRADE LEVEL EXPECTATION	8.1.1.	Survey the diversity of organisms in a local or model ecosystem. Recognizing that a population consists of all individuals of a species that occur together at a given place and time, describe how to estimate and then calculate the size of a large population of a variety of organisms. Chart the diversity of the organisms in the ecosystem. <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	8.1.2.	Categorize populations of organisms according to the roles (producers, consumers, and decomposers) they play in an ecosystem. <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	8.1.4.	Construct a data table or line graph to show population changes of a selected species over time. Describe the population changes portrayed by the graph. <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	8.1.5.	Observe graphs or data tables showing both the population growth of a species and the consequences of resource depletion on the population. Analyze the data and explain the effect that may occur from exponential growth of a population (given finite resources). <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.8.	Ecology
PERFORMANCE INDICATOR / GLE	8.2.	Enduring Understanding: Matter needed to sustain life is continually recycled among and between organisms and the environment. Energy from the sun flows irreversibly through ecosystems and is conserved as organisms use and transform it.
GRADE LEVEL EXPECTATION	8.2.1.	Construct food webs and identify the relationships among producers, consumers, and decomposers. <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understanding: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	<p>Identify and form questions that generate a specific testable hypothesis that guide the design and breadth of the scientific investigation.</p> <ul style="list-style-type: none"> • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.2.	<p>Design and conduct valid scientific investigations to control all but the testable variable in order to test a specific hypothesis.</p> <ul style="list-style-type: none"> • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test

		for Catalase
GRADE LEVEL EXPECTATION	1.1.3.	<p>Collect accurate and precise data through the selection and use of tools and technologies appropriate to the investigations. Display and organize data through the use of tables, diagrams, graphs, and other organizers that allow analysis and comparison with known information and allow for replication of results.</p> <ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.4.	<p>Construct logical scientific explanations and present arguments which defend proposed explanations through the use of closely examined evidence.</p> <ul style="list-style-type: none"> Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function
GRADE LEVEL EXPECTATION	1.1.6.	<p>Use mathematics, reading, writing and technology when conducting scientific inquiries.</p> <ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles

		<ul style="list-style-type: none"> Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.8.	<p>Classify matter as mixtures (which are either homogeneous or heterogeneous) or pure substances (which are either compounds or elements.)</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	1.1.9.	<p>Classify various common materials as an element, compound or mixture.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	1.1.18.	<p>Separate mixtures into their component parts according to their physical properties such as melting point, boiling point, magnetism, solubility and particle size.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	1.1.19.	<p>Explain how the properties of the components of the mixture determine the physical separation techniques used.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	1.1.20.	<p>Describe how the process of diffusion or the movement of molecules from an area of high concentration to an area of low concentration (down the concentration gradient) occurs because of molecular collisions.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD

		<ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	1.1.22.	<p>Measure the pH of a solution using chemical indicators to determine the relative acidity or alkalinity of the solution. Identify the physical properties of acids and bases.</p> <ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	1.1.35.	<p>Use examples to illustrate that near the surface of a planet or moon, the gravitational force acting on an object remains nearly constant. Recognize that on Earth, the object would have to be moved several hundred miles above the surface before the decrease in the force of gravity would become detectable.</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.1.	Enduring Understanding: The structures of materials determine their properties.
GRADE LEVEL EXPECTATION	2.1.1.	<p>Explain that matter is composed of tiny particles called atoms that are unique to each element, and that atoms are composed of subatomic particles called protons, neutrons, and electrons.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	2.1.3.	<p>Classify matter as mixtures (which are either homogeneous or heterogeneous) or pure substances (which are either compounds or elements.)</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	2.1.5.	<p>Classify various common materials as an element, compound or mixture.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.2.	Enduring Understanding: The properties of the mixture are based on the properties of its components.
GRADE LEVEL EXPECTATION	2.2.1.	<p>Recognize that mixtures can be separated by physical means into pure substances.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	2.2.3.	<p>Separate mixtures into their component parts according to their physical properties such as melting point, boiling point, magnetism, solubility and particle size. Explain how the properties of the components of the mixture determine the physical separation techniques</p>

		used. <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	2.2.4.	Describe how the process of diffusion or the movement of molecules from an area of high concentration to an area of low concentration (down the concentration gradient) occurs because of molecular collisions. <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	2.2.6.	Measure the pH of a solution using chemical indicators to determine the relative acidity or alkalinity of the solution. Identify the physical properties of acids and bases. <ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.4.	Enduring Understanding: There are several ways in which elements and/or compounds react to form new substances and each reaction involves energy.
GRADE LEVEL EXPECTATION	2.4.1.	Recognize that chemical changes alter the chemical composition of a substance forming one or more new substances. The new substance may be a solid, liquid, or gas. <ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase
CONTENT STANDARD	DE.3.	Energy and Its Effects
PERFORMANCE INDICATOR / GLE	3.2.	Enduring Understanding: Changes take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the different forms of energy.
GRADE LEVEL EXPECTATION	3.2.6.	Explain that as objects move away from the surface of a planet or moon, the gravitational pull on the object will decrease. <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	3.2.8.	Recognize that on Earth, the object would have to be moved several hundred miles above the surface before the decrease in the force of gravity would become detectable. <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves

Grade 10

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE	1.1.	Enduring Understanding: Scientific inquiry involves asking scientifically-oriented

INDICATOR / GLE		questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	<p>Identify and form questions that generate a specific testable hypothesis that guide the design and breadth of the scientific investigation.</p> <ul style="list-style-type: none"> • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.2.	<p>Design and conduct valid scientific investigations to control all but the testable variable in order to test a specific hypothesis.</p> <ul style="list-style-type: none"> • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL	1.1.3.	Collect accurate and precise data through the selection and use of tools and technologies

<p>EXPECTATION</p>		<p>appropriate to the investigations. Display and organize data through the use of tables, diagrams, graphs, and other organizers that allow analysis and comparison with known information and allow for replication of results.</p> <ul style="list-style-type: none"> • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.4.</p>	<p>Construct logical scientific explanations and present arguments which defend proposed explanations through the use of closely examined evidence.</p> <ul style="list-style-type: none"> • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.6.</p>	<p>Use mathematics, reading, writing and technology when conducting scientific inquiries.</p> <ul style="list-style-type: none"> • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria

		<ul style="list-style-type: none"> • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.7.</p>	<p>Use microscopes to identify similarities and differences among a variety of cells (e.g., muscle, nerve, epithelial, blood, adipose), and explain how structural variations relate to the function that each of the cells performs.</p> <ul style="list-style-type: none"> • Cell Process: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
<p>GRADE LEVEL EXPECTATION</p>	<p>1.1.8.</p>	<p>Use fluid mosaic models of the plasma membrane to explain how its structure regulates the movement of materials across the membrane.</p> <ul style="list-style-type: none"> • Cell Process: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell

		<p>Organization</p> <ul style="list-style-type: none"> Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	1.1.9.	<p>Show how water moves in and out of cells down a concentration gradient. Recognize that this process, known as osmosis, requires no input of energy.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells
GRADE LEVEL EXPECTATION	1.1.10.	<p>Design a controlled experiment to investigate the capacity of the cell membrane to regulate how materials enter and leave the cell.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	1.1.11.	<p>Construct cell models (e.g., phenolphthalein-agar cubes, potato-iodine cubes) to investigate the relationship among cell size, surface area to volume ratio and the rates of diffusion into and out of the cell. Explain why large organisms have developed from many cells rather than one large cell.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	1.1.14.	<p>Observe and recognize that unicellular organisms take in food from their environment and chemically digest it (if needed) within their cell body.</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell

		<p>Organization</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	1.1.16.	<p>Explain the processes used by autotrophs to transform light energy into chemical energy in the form of simple sugars. Give examples of how these compounds are used by living things as sources of matter and energy.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	1.1.18.	<p>Describe photosynthesis as an energy storing process and explain how environmental factors such as temperature, light intensity, and the amount of water available can affect photosynthesis.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	1.1.19.	<p>Investigate and describe the complementary relationship (cycling of matter and the flow of energy) between photosynthesis and cellular respiration.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	1.1.20.	<p>Compare the amount of chemical potential energy stored in chemical bonds of a variety of foods (calorimetry). Recognize that equal amounts of different types of food contain different amounts of energy.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
GRADE LEVEL EXPECTATION	1.1.21.	<p>Investigate the role of enzymes (e.g., protease, amylase and lipase) in the rate of chemical breakdown of a variety of foods.</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	1.1.22.	<p>Investigate how various factors (temperature, pH, enzyme/substrate concentration) affect the rate of enzyme activity.</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	1.1.25.	<p>Describe how environmental factors (e.g., UV light or the presence of carcinogens or pathogens) alter cellular functions.</p>

		<ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Process: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
GRADE LEVEL EXPECTATION	1.1.26.	<p>Describe the relationship between DNA, genes, chromosomes and proteins.</p> <ul style="list-style-type: none"> • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	1.1.27.	<p>Trace how a DNA sequence, through transcription and translation, results in a sequence of amino acids.</p> <ul style="list-style-type: none"> • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	1.1.28.	<p>Demonstrate that when DNA replicates, the complementary strands separate and the old strands serve as a template for the new complementary strands.</p> <ul style="list-style-type: none"> • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	1.1.29.	<p>Recognize that this results in two identical strands of DNA that are exact copies of the</p>

		<p>original.</p> <ul style="list-style-type: none"> • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	1.1.34.	<p>Describe the cell cycle as an orderly process that results in new somatic cells that contain an exact copy of the DNA that make up the genes and chromosomes found in the parent somatic cells.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resoruce CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	1.1.35.	<p>Compare and contrast the processes of growth (cell division) and development (differentiation).</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resoruce CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.5.	Earth's Dynamic Systems
PERFORMANCE INDICATOR / GLE	5.3.	Enduring Understanding: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	6.1.1.	<p>Enduring Understanding: Living systems, from the organismic to the cellular level, demonstrate the complementary nature of structure and function.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resoruce CD • Cell Process: Teacher Resource CD

		<ul style="list-style-type: none"> • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cells and Energy: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function • Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • Cellular World Unit 5 Lab 5 Activity 1 Growth and Preparation of Onion Roots • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase • Why Cells Aren't Big: Virtual Lab
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	5.3.	Enduring Understanding: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	6.1.2.	<p>Use microscopes to identify similarities and differences among a variety of cells (e.g., muscle, nerve, epithelial, blood, adipose), and explain how structural variations relate to the function that each of the cells performs.</p> <ul style="list-style-type: none"> • Cell Process: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria • Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and

		<p>Function</p> <ul style="list-style-type: none"> Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	6.1.3.	<p>Differentiate between prokaryotic cells and eukaryotic cells in terms of their general structures (cell membrane & genetic material) and degree of complexity. Give examples of prokaryotic organisms and organisms with eukaryotic cells.</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	6.1.4.	<p>Explain how organelles of single-celled organisms function as a system to perform the same basic life processes as are performed in multi-cellular organisms (e.g., acquisition of energy, elimination of waste, reproduction, gas exchange, growth, repair, and protein synthesis).</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 2 Lab 2 Activity 4 Plant Cell Structure and Function Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	6.1.5.	<p>Use fluid mosaic models of the plasma membrane to explain how its structure regulates the movement of materials across the membrane.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization

		<ul style="list-style-type: none"> Cellular World Unit 2 Lab 2 Activity 1 Comparison of Plant and Animal Cell Organelles Cellular World Unit 2 Lab 2 Activity 3 Identification of Mitochondria Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	6.1.6.	<p>Show how water moves in and out of cells down a concentration gradient. Recognize that this process, known as osmosis, requires no input of energy.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells
GRADE LEVEL EXPECTATION	6.1.7.	<p>Explain the role of cell membranes as highly selective barriers (e.g., diffusion, osmosis, active transport).</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	6.1.8.	<p>Distinguish between active and passive transport. Recognize that active transport requires energy input to move molecules from an area of low concentration to an area of high concentration (against the concentration gradient).</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	6.1.9.	<p>Design a controlled experiment to investigate the capacity of the cell membrane to regulate how materials enter and leave the cell.</p> <ul style="list-style-type: none"> Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big

GRADE LEVEL EXPECTATION	6.1.10.	<p>Construct cell models (e.g., phenolphthalein-agar cubes, potato-iodine cubes) to investigate the relationship among cell size, surface area to volume ratio and the rates of diffusion into and out of the cell. Explain why large organisms have developed from many cells rather than one large cell.</p> <ul style="list-style-type: none"> • Cell Process: Teacher Resource CD • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	6.1.12.	<p>Explain how the cells of a multi-cellular organisms work together for the benefit of the colonial or singular organism.</p> <ul style="list-style-type: none"> • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.2.	Enduring Understanding: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	6.2.4.	<p>Observe and recognize that unicellular organisms take in food from their environment and chemically digest it (if needed) within their cell body.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resoruce CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	6.2.6.	<p>Explain the processes used by autotrophs to transform light energy into chemical energy in the form of simple sugars. Give examples of how these compounds are used by living things as sources of matter and energy.</p> <ul style="list-style-type: none"> • Cells and Energy: Teacher Resource CD • Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	6.2.7.	<p>Describe the process by which water is removed from sugar molecules (dehydration synthesis) to form carbohydrates and is added to break them down (hydrolysis).</p> <ul style="list-style-type: none"> • Cell Structure and Function: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD

		<ul style="list-style-type: none"> Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells
GRADE LEVEL EXPECTATION	6.2.8.	<p>Describe photosynthesis as an energy storing process and explain how environmental factors such as temperature, light intensity, and the amount of water available can affect photosynthesis.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	6.2.9.	<p>Identify the reactants and the products in equations that represent photosynthesis and cellular respiration. Explain how the equations demonstrate the Law of Conservation of Matter and Energy in terms of balanced equations.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	6.2.10.	<p>Investigate and describe the complementary relationship (cycling of matter and the flow of energy) between photosynthesis and cellular respiration.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	6.2.11.	<p>Recognize that during photosynthesis, plants use energy from the sun and elements from the atmosphere and the soil to make specific compounds. Recognize that these compounds are used by living things as sources of matter and energy.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	6.2.12.	<p>Compare the amount of chemical potential energy stored in chemical bonds of a variety of foods (calorimetry). Recognize that equal amounts of different types of food contain different amounts of energy.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.3.	Enduring Understanding: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism (cont'd).
GRADE LEVEL EXPECTATION	6.3.1.	<p>Recognize that during cellular respiration, chemical bonds between food molecules are broken (hydrolysis), and energy is transferred to ADP to create ATP (the energy storage molecule that fuels cellular processes). Acknowledge that all organisms must break the high energy chemical bonds in food molecules during cellular respiration to obtain the energy needed for life processes.</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling

		<ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase
GRADE LEVEL EXPECTATION	6.3.2.	<p>Recognize that in general, synthesis reactions (i.e. photosynthesis) require energy while decomposition reactions (i.e. cellular respiration) usually release energy.</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 1 Investigating Carbon Cycling Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments
GRADE LEVEL EXPECTATION	6.3.3.	<p>Investigate the role of enzymes (e.g., protease, amylase and lipase) in the rate of chemical breakdown of a variety of foods.</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	6.3.4.	<p>Explain how enzymes permit low temperature chemical reactions to occur in cells.</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	6.3.5.	<p>Investigate how various factors (temperature, pH, enzyme/substrate concentration) affect the rate of enzyme activity.</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD Cells and Energy: Teacher Resource CD Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.5.	Enduring Understanding: The health of humans and other organisms is affected by their interactions with each other and their environment, and may be altered by human manipulation.
GRADE LEVEL EXPECTATION	6.5.3.	<p>Explain how antibiotics (e.g., penicillin, tetracycline) kill bacterial cells without harming human cells due to differences between prokaryotic and eukaryotic cell structure.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	6.5.4.	<p>Describe how environmental factors (e.g., UV light or the presence of carcinogens or pathogens) alter cellular functions.</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD Cell Process: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cellular World Unit 3 Lab 3 Activity 1 Osmoregulation in Cells Cellular World Unit 3 Lab 3 Activity 2 Osmosis and Diffusion in Model Cells

		<ul style="list-style-type: none"> Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase Why Cells Aren't Big: Virtual Lab
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.1.	Enduring Understanding: Organisms reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	7.1.1.	<p>Describe the relationship between DNA, genes, chromosomes and proteins.</p> <ul style="list-style-type: none"> Cell Reproduction and the Cell Cycle: Teacher Resource CD Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	7.1.3.	<p>Trace how a DNA sequence, through transcription and translation, results in a sequence of amino acids.</p> <ul style="list-style-type: none"> Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	7.1.4.	<p>Demonstrate that when DNA replicates, the complementary strands separate and the old strands serve as a template for the new complementary strands. Recognize that this results in two identical strands of DNA that are exact copies of the original.</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD Cell Types and Organization: Teacher Resource CD Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	7.1.8.	<p>Explain how crossing over and Mendel's Laws of Segregation and Independent Assortment contribute to genetic variation in sexually reproducing organisms.</p> <ul style="list-style-type: none"> Cell Growth: Teacher Resource CD

		<ul style="list-style-type: none"> • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.1.13.	<p>Describe the cell cycle as an orderly process that results in new somatic cells that contain an exact copy of the DNA that make up the genes and chromosomes found in the parent somatic cells.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.1.14.	<p>Explain how the cell cycle contributes to reproduction and maintenance of the cell and/or organism.</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in Onion Roots • Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization • Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.1.15.	<p>Recognize that during the formation of gametes, or sex cells (meiosis), the number of chromosomes is reduced by one half, so that when fertilization occurs the diploid number is restored.</p> <ul style="list-style-type: none"> • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization
GRADE LEVEL EXPECTATION	7.1.17.	<p>Compare and contrast the processes of growth (cell division) and development (differentiation).</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD • Cell Types and Organization: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 2 Learning About Cell Organization • Cellular World Unit 2 Lab 2 Activity 2 Identification of DNA and RNA in Plant Cells • Cellular World Unit 5 Lab 5 Activity 2 Observing the Cell Cycle in

		<p>Onion Roots</p> <ul style="list-style-type: none"> Cellular World Unit 5 Lab 5 Activity 3 Modeling Mitosis Cellular World Unit 5 Lab 5 Activity 4 Modeling Meiosis and Fertilization Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understanding: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with advantageous traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	7.2.8.	<p>Relate a population's survival to the reproductive success of adapted individuals in that population.</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.2.11.	<p>Explain why homogeneous populations may be more vulnerable to environmental changes than heterogeneous populations.</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
GRADE LEVEL EXPECTATION	7.2.13.	<p>Explain how antibiotic resistance populations evolve from common bacterial populations.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD

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