

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

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Colorado Academic Standards
Science
Grade 7

STANDARD	CO.1. Students apply the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.
STRAND/BENCHMARK	1.1. Ask questions and state hypotheses that lead to different types of scientific investigations (for example: experimentation, collecting specimens, constructing models, researching scientific literature) <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
STRAND/BENCHMARK	1.2. Use appropriate tools, technologies and metric measurements to gather and organize data and report results <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

		<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
STRAND/BENCHMARK	1.3.	<p>Interpret and evaluate data in order to formulate logical conclusions</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

		<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 Why Cells Aren't Big: Virtual Lab
STRAND/BENCHMARK	1.6.	<p>Communicate results of their investigations in appropriate ways (for example: written reports, graphic displays, oral presentations)</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
STANDARD	CO.2.	Physical Science: Students know and understand common properties, forms, and changes in matter and energy. (Focus: Physics and Chemistry)
STRAND/BENCHMARK	2.2.	<p>Mixtures of substances can be separated based on their properties (for example: solubilities, boiling points, magnetic properties, densities and specific heat)</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
STANDARD	CO.3.	Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment. (Focus: Biology-- Anatomy, Physiology, Botany, Zoology, Ecology)
STRAND/BENCHMARK	3.3.	<p>There is a differentiation among levels of organization (cells, tissues, and organs) and their roles within the whole organism</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD 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
STRAND/BENCHMARK	3.5.	<p>Photosynthesis and cellular respiration are basic processes of life (for example, set up a terrarium or aquarium and make changes such as blocking out light)</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
STRAND/BENCHMARK	3.6.	<p>Different types of cells have basic structures, components and functions (for example: cell membrane, nucleus, cytoplasm, chloroplast, single-celled organisms in pond water, Elodea, onion cell, human cheek cell)</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
STRAND/BENCHMARK	3.9.	<p>Asexual and sexual cell reproduction/division can be differentiated</p> <ul style="list-style-type: none"> • Cell Growth: Teacher Resource CD • Cell Reproduction and the Cell Cycle: Teacher Resource CD

		<ul style="list-style-type: none"> 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
STRAND/BENCHMARK	3.10.	<p>Chromosomes and genes play a role in heredity (for example, genes control traits, while chromosomes are made up of many genes)</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
STANDARD	CO.5.	Students understand that the nature of science involves a particular way of building knowledge and making meaning of the natural world.
STRAND/BENCHMARK	5.2.	<p>Scientific knowledge changes as new knowledge is acquired and previous ideas are modified (for example: through space exploration)</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
STRAND/BENCHMARK	5.3.	<p>Contributions to the advancement of science have been made by people in different cultures and at different times in history</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
STRAND/BENCHMARK	5.4.	<p>Models can be used to predict change (for example: computer simulation, video sequence, stream table)</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 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

Grade 8

STANDARD	CO.1.	Students apply the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.
STRAND/BENCHMARK	1.1.	<p>Ask questions and state hypotheses that lead to different types of scientific investigations (for example: experimentation, collecting specimens, constructing models, researching scientific literature)</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
STRAND/BENCHMARK	1.2.	<p>Use appropriate tools, technologies and metric measurements to gather and organize data and report 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

		<ul style="list-style-type: none"> 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
STRAND/BENCHMARK	1.3.	<p>Interpret and evaluate data in order to formulate logical conclusions</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
STRAND/BENCHMARK	1.6.	<p>Communicate results of their investigations in appropriate ways (for example: written reports, graphic displays, oral presentations)</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

		<ul style="list-style-type: none"> 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
STANDARD	CO.2.	Physical Science: Students know and understand common properties, forms, and changes in matter and energy. (Focus: Physics and Chemistry)
STRAND/BENCHMARK	2.2.	<p>Mixtures of substances can be separated based on their properties (for example: solubilities, boiling points, magnetic properties, densities and specific heat)</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
STANDARD	CO.3.	Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment. (Focus: Biology-- Anatomy, Physiology, Botany, Zoology, Ecology)
STRAND/BENCHMARK	3.3.	<p>There is a differentiation among levels of organization (cells, tissues, and organs) and their roles within the whole organism</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD 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
STRAND/BENCHMARK	3.5.	<p>Photosynthesis and cellular respiration are basic processes of life (for example, set up a terrarium or aquarium and make changes such as blocking out light)</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
STRAND/BENCHMARK	3.6.	<p>Different types of cells have basic structures, components and functions (for example: cell membrane, nucleus, cytoplasm, chloroplast, single-celled organisms in pond water, Elodea, onion cell, human cheek cell)</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

		<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 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
STRAND/BENCHMARK	3.9.	<p>Asexual and sexual cell reproduction/division can be differentiated</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
STRAND/BENCHMARK	3.10.	<p>Chromosomes and genes play a role in heredity (for example, genes control traits, while chromosomes are made up of many genes)</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

STANDARD	CO.5.	Students understand that the nature of science involves a particular way of building knowledge and making meaning of the natural world.
STRAND/BENCHMARK	5.2.	<p>Scientific knowledge changes as new knowledge is acquired and previous ideas are modified (for example: through space exploration)</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
STRAND/BENCHMARK	5.3.	<p>Contributions to the advancement of science have been made by people in different cultures and at different times in history</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
STRAND/BENCHMARK	5.4.	<p>Models can be used to predict change (for example: computer simulation, video sequence, stream table)</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 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

Grade 9

STANDARD	CO.1.	Students apply the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.
STRAND/BENCHMARK	1.1.	<p>Ask questions and state hypotheses using prior scientific knowledge to help design and guide development and implementation of a 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

		<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 Why Cells Aren't Big: Virtual Lab
STRAND/BENCHMARK	1.2.	<p>Select and use appropriate technologies to gather, process, and analyze data and to report information related to an 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
STRAND/BENCHMARK	1.5.	<p>Construct and revise scientific explanations and models, using evidence, logic, and experiments that include identifying and controlling variables</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 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
STRAND/BENCHMARK	1.6.	<p>Communicate and evaluate scientific thinking that leads to particular conclusions</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
STANDARD	CO.2.	Physical Science: Students know and understand common properties, forms, and changes in matter and energy. (Focus: Physics and Chemistry)
STRAND/BENCHMARK	2.3.	<p>There are observable and measurable physical and chemical properties that allow one to compare, contrast, and separate substances (for example: pH, melting point, conductivity, magnetic attraction)</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
STRAND/BENCHMARK	2.4.	<p>Word and chemical equations are used to relate observed changes in matter to its composition and structure (for example: conservation of matter)</p> <ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase
STANDARD	CO.3.	Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment. (Focus: Biology-- Anatomy, Physiology, Botany, Zoology, Ecology)
STRAND/BENCHMARK	3.1.	<p>The pattern/process of reproduction and development is specific to different organisms</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
STRAND/BENCHMARK	3.2.	<p>There is a relationship between the processes of photosynthesis and cellular respiration (for example: in terms of energy and products)</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
STRAND/BENCHMARK	3.4.	<p>Energy is used in the maintenance, repair, growth, and production of tissues</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
STRAND/BENCHMARK	3.9.	<p>Cellular organelles have specific functions (for example: the relationship of ribosomes to protein, and the relationship of mitochondria to energy transformation)</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
STRAND/BENCHMARK	3.10.	<p>Cell reproduction/division has various processes and purposes (mitosis, meiosis, binary fission)</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

STRAND/BENCHMARK	3.11.	<p>DNA has a general structure and function and a role in heredity and protein synthesis (for example: replication of DNA and the role of RNA in protein synthesis)</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
STANDARD	CO.5.	<p>Students understand that the nature of science involves a particular way of building knowledge and making meaning of the natural world.</p>
STRAND/BENCHMARK	5.2.	<p>The scientific way of knowing uses a critique and consensus process (for example: peer review, openness to criticism, logical arguments, skepticism)</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 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
STRAND/BENCHMARK	5.3.	<p>Graphs, equations or other models are used to analyze systems involving change and constancy (for example: comparing the geologic time scale to shorter time frame, exponential growth, a mathematical expression for gas behavior; constructing a closed ecosystem such as an aquarium)</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 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • 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
STRAND/BENCHMARK	5.5.	<p>Scientific knowledge changes and accumulates over time; usually the changes that take place are small modifications of prior knowledge but major shifts in the scientific view of how the world works do occur</p> <ul style="list-style-type: none"> • Cell Types and Organization: Teacher Resource CD
STRAND/BENCHMARK	5.7.	<p>There is a difference between a scientific theory and a scientific hypothesis</p> <ul style="list-style-type: none"> • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test

		for Catalase
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Grade 10

STANDARD	CO.1.	Students apply the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.
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STRAND/BENCHMARK	1.1.	<p>Ask questions and state hypotheses using prior scientific knowledge to help design and guide development and implementation of a 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
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STRAND/BENCHMARK	1.2.	<p>Select and use appropriate technologies to gather, process, and analyze data and to report information related to an 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
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		<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 • 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
STRAND/BENCHMARK	1.5.	<p>Construct and revise scientific explanations and models, using evidence, logic, and experiments that include identifying and controlling variables</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 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
STRAND/BENCHMARK	1.6.	<p>Communicate and evaluate scientific thinking that leads to particular conclusions</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

		<p>Fertilization</p> <ul style="list-style-type: none"> 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
STANDARD	CO.2.	Physical Science: Students know and understand common properties, forms, and changes in matter and energy. (Focus: Physics and Chemistry)
STRAND/BENCHMARK	2.3.	<p>There are observable and measurable physical and chemical properties that allow one to compare, contrast, and separate substances (for example: pH, melting point, conductivity, magnetic attraction)</p> <ul style="list-style-type: none"> Cells and Energy: Teacher Resource CD
STRAND/BENCHMARK	2.4.	<p>Word and chemical equations are used to relate observed changes in matter to its composition and structure (for example: conservation of matter)</p> <ul style="list-style-type: none"> Cellular World Unit 4 Lab 4 Activity 2 A Closer Look at Catalase
STANDARD	CO.3.	Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment. (Focus: Biology-- Anatomy, Physiology, Botany, Zoology, Ecology)
STRAND/BENCHMARK	3.1.	<p>The pattern/process of reproduction and development is specific to different organisms</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
STRAND/BENCHMARK	3.2.	<p>There is a relationship between the processes of photosynthesis and cellular respiration (for example: in terms of energy and products)</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
STRAND/BENCHMARK	3.4.	<p>Energy is used in the maintenance, repair, growth, and production of tissues</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
STRAND/BENCHMARK	3.9.	<p>Cellular organelles have specific functions (for example: the relationship of ribosomes to protein, and the relationship of mitochondria to energy transformation)</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
STRAND/BENCHMARK	3.10.	<p>Cell reproduction/division has various processes and purposes (mitosis, meiosis, binary fission)</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
STRAND/BENCHMARK	3.11.	<p>DNA has a general structure and function and a role in heredity and protein synthesis (for example: replication of DNA and the role of RNA in protein synthesis)</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
STANDARD	CO.5.	<p>Students understand that the nature of science involves a particular way of building knowledge and making meaning of the natural world.</p>
STRAND/BENCHMARK	5.2.	<p>The scientific way of knowing uses a critique and consensus process (for example: peer review, openness to criticism, logical arguments, skepticism)</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 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase

STRAND/BENCHMARK	5.3.	<p>Graphs, equations or other models are used to analyze systems involving change and constancy (for example: comparing the geologic time scale to shorter time frame, exponential growth, a mathematical expression for gas behavior; constructing a closed ecosystem such as an aquarium)</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 2 A Closer Look at Catalase • Cellular World Unit 4 Lab 4 Activity 3 Investigating Plant Pigments • 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
STRAND/BENCHMARK	5.5.	<p>Scientific knowledge changes and accumulates over time; usually the changes that take place are small modifications of prior knowledge but major shifts in the scientific view of how the world works do occur</p> <ul style="list-style-type: none"> • Cell Types and Organization: Teacher Resource CD
STRAND/BENCHMARK	5.7.	<p>There is a difference between a scientific theory and a scientific hypothesis</p> <ul style="list-style-type: none"> • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase