

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

Frey Scientific
 80 Northwest Boulevard
 Nashua, NH 03063-4067
 1-800-225-3739
 www.freyscientific.com
 www.freyscientific.com/inquiryinvestigations

Alaska Content Standards
Science
Grade 7

PERFORMANCE / CONTENT STANDARD	AK.A1.	Science as Inquiry and Process (SA1, SA2, SA3)
GRADE LEVEL EXPECTATION	[7] SA1.1.	<p>The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating.</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	[7] SA1.2.	<p>The student demonstrates an understanding of the processes of science by collaborating to design and conduct simple repeatable investigations, in order to record, analyze (i.e., range, mean, median, mode), interpret data, and present findings. (L)</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
PERFORMANCE / CONTENT STANDARD	AK.B1.	Concepts of Physical Science (SB1, SB2, SB3, SB4)
GRADE LEVEL EXPECTATION	[7] SB1.1.	<p>The student demonstrates understanding of the structure and properties of matter by using physical properties (i.e., density, boiling point, freezing point, conductivity) to differentiate among and/or separate materials (i.e., elements, compounds, and mixtures).</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
PERFORMANCE / CONTENT STANDARD	AK.C1.	Concepts of Life Science (SC1, SC2, SC3)
GRADE LEVEL EXPECTATION	[7] SC1.1.	<p>The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution by comparing and contrasting sexual and asexual reproduction.</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] SC2.1.	<p>The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by describing the basic structure and function of plant and animal cells.</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
GRADE LEVEL EXPECTATION	[7] SC2.3.	<p>The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by identifying and describing the functions of human organs (i.e., heart, lungs, brain).</p> <ul style="list-style-type: none"> • Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	[7] SC3.1.	<p>The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by recognizing and explaining that organisms can cause physical and chemical changes (e.g., digestion, growth, respiration, photosynthesis) to matter and recognizing and explaining the importance of</p>

		<p>energy transfer in these changes.</p> <ul style="list-style-type: none"> • Cells and Energy: Teacher Resource CD • Cellular World Unit 1 Lab 1 Activity 1 Learning About Cell Types • 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	[7] SC3.2.	<p>The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by classifying organisms within a food web as producers, consumers, or decomposers.</p> <ul style="list-style-type: none"> • Cells and Energy: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.E1.	Science and Technology (SE1, SE2, SE3)
GRADE LEVEL EXPECTATION	[7] SE2.1.	<p>The student demonstrates an understanding that solving problems involves different ways of thinking by identifying, designing, testing, and revising solutions to a local problem. (L)</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
PERFORMANCE / CONTENT STANDARD	AK.SA.	Science as Inquiry and Process: A student should understand and be able to apply the processes and applications of scientific inquiry. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SA1.	<p>Develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.</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

		<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 Why Cells Aren't Big: Virtual Lab
PERFORMANCE / CONTENT STANDARD	AK.SB.	Concepts of Physical Science: A student should understand and be able to apply the concepts, models, theories, universal principles, and facts that explain the physical world. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SB3.	<p>Develop an understanding of the interactions between matter and energy, including physical, chemical, and nuclear changes, and the effects of these interactions on physical systems.</p> <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
PERFORMANCE / CONTENT STANDARD	AK.SC.	Concepts of Life Science: A student should understand and be able to apply the concepts, models, theories, facts, evidence, systems, and processes of life science. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SC2.	<p>Develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.</p> <ul style="list-style-type: none"> Cell Growth: 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 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
PERFORMANCE /	AK.SE.	Science and Technology: A student should understand the relationships among

CONTENT STANDARD		science, technology, and society. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SE2.	Develop an understanding that solving problems involves different ways of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits. <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SF.	Cultural, Social, Personal Perspectives and Science: A student should understand the dynamic relationships among scientific, cultural, social, and personal perspectives. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SF1.	Develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology. <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SG.	History and Nature of Science: A student should understand the history and nature of science. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SG1.	Develop an understanding that historical perspectives of scientific explanations demonstrate that scientific knowledge changes over time, building on prior knowledge. <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG2.	Develop an understanding that the advancement of scientific knowledge embraces innovation and requires empirical evidence, repeatable investigations, logical arguments, and critical review in striving for the best possible explanations of the natural world. <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG3.	Develop an understanding that scientific knowledge is ongoing and subject to change as new evidence becomes available through experimental and/or observational confirmation(s). <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG4.	Develop an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base. <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD

Grade 8

PERFORMANCE / CONTENT STANDARD	AK.A1.	Science as Inquiry and Process (SA1, SA2, SA3)
GRADE LEVEL EXPECTATION	[8] SA1.1.	The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating. <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

		<p>Animal Cell Organelles</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 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>[8] SA1.2.</p>	<p>The student demonstrates an understanding of the processes of science by collaborating to design and conduct repeatable investigations, in order to record, analyze (i.e., range, mean, median, mode), interpret data, and present findings. (L)</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

		<ul style="list-style-type: none"> 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	[8] SA2.1.	<p>The student demonstrates an understanding of the attitudes and approaches to scientific inquiry by recognizing and analyzing differing scientific explanations and models.</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
PERFORMANCE / CONTENT STANDARD	AK.B1.	Concepts of Physical Science (SB1, SB2, SB3, SB4)
GRADE LEVEL EXPECTATION	[8] SB1.1.	<p>The student demonstrates an understanding of the structure and properties of matter by using physical and chemical properties (i.e., density, boiling point, freezing point, conductivity, flammability) to differentiate among materials (i.e., elements, compounds, and mixtures).</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 2 Investigating Cell Growth Curves
PERFORMANCE / CONTENT STANDARD	AK.C1.	Concepts of Life Science (SC1, SC2, SC3)

GRADE LEVEL EXPECTATION	[8] SC2.2.	<p>The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by explaining that most organisms utilize inherited and learned behaviors to meet the basic requirements of life.</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
PERFORMANCE / CONTENT STANDARD	AK.E1.	Science and Technology (SE1, SE2, SE3)
GRADE LEVEL EXPECTATION	[8] SE2.1.	<p>The student demonstrates an understanding that solving problems involves different ways of thinking by identifying, designing, testing, and revising solutions to a local problem. (L)</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
PERFORMANCE / CONTENT STANDARD	AK.SA.	Science as Inquiry and Process: A student should understand and be able to apply the processes and applications of scientific inquiry. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SA1.	<p>Develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.</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

		<p>Animal Cell Organelles</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 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
PERFORMANCE / CONTENT STANDARD	AK.SB.	Concepts of Physical Science: A student should understand and be able to apply the concepts, models, theories, universal principles, and facts that explain the physical world. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SB3.	<p>Develop an understanding of the interactions between matter and energy, including physical, chemical, and nuclear changes, and the effects of these interactions on physical systems.</p> <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
PERFORMANCE / CONTENT STANDARD	AK.SC.	Concepts of Life Science: A student should understand and be able to apply the concepts, models, theories, facts, evidence, systems, and processes of life science. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SC2.	<p>Develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.</p> <ul style="list-style-type: none"> Cell Growth: 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 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

		<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 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
PERFORMANCE / CONTENT STANDARD	AK.SE.	Science and Technology: A student should understand the relationships among science, technology, and society. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SE2.	<p>Develop an understanding that solving problems involves different ways of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SF.	Cultural, Social, Personal Perspectives and Science: A student should understand the dynamic relationships among scientific, cultural, social, and personal perspectives. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SF1.	<p>Develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SG.	History and Nature of Science: A student should understand the history and nature of science. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SG1.	<p>Develop an understanding that historical perspectives of scientific explanations demonstrate that scientific knowledge changes over time, building on prior knowledge.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG2.	<p>Develop an understanding that the advancement of scientific knowledge embraces innovation and requires empirical evidence, repeatable investigations, logical arguments, and critical review in striving for the best possible explanations of the natural world.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG3.	<p>Develop an understanding that scientific knowledge is ongoing and subject to change as new evidence becomes available through experimental and/or observational confirmation(s).</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG4.	<p>Develop an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD

PERFORMANCE / CONTENT STANDARD	AK.A1.	Science as Inquiry and Process (SA1, SA2, SA3)
GRADE LEVEL EXPECTATION	[9] SA1.1.	<p>The student develops an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating.</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	[9] SA1.2.	<p>The student develops an understanding of the processes of science by hypothesizing, designing a controlled experiment, making qualitative and quantitative observations, interpreting data, and using this information to communicate 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

		<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
GRADE LEVEL EXPECTATION	[9] SA2.1.	<p>The student will demonstrate an understanding of the attitudes and approaches to scientific inquiry by formulating conclusions that are logical and supported by evidence.</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
PERFORMANCE / CONTENT STANDARD	AK.B1.	Concepts of Physical Science (SB1, SB2, SB3, SB4)

GRADE LEVEL EXPECTATION	[9] SB3.1.	<p>The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by recognizing that a chemical reaction has taken place.</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 2 A Closer Look at Catalase • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
GRADE LEVEL EXPECTATION	[9] SB3.2.	<p>The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by explaining that in chemical and nuclear reactions, energy (e.g., heat, light, mechanical, and electrical) is transferred into and out of a system.</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 2 A Closer Look at Catalase • Cellular World Unit 7 Lab 7 Activity 1 Developing a Biochemical Test for Catalase
PERFORMANCE / CONTENT STANDARD	AK.C1.	Concepts of Life Science (SC1, SC2, SC3)
GRADE LEVEL EXPECTATION	[9] SC1.1.	<p>The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution by recognizing that all organisms have chromosomes made of DNA and that DNA determines traits.</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
PERFORMANCE / CONTENT STANDARD	AK.E1.	Science and Technology (SE1, SE2, SE3)
GRADE LEVEL EXPECTATION	[9] SE2.1.	<p>The student demonstrates an understanding that solving problems involves different ways of thinking, by questioning, researching, modeling, simulating, and testing a solution to a problem. (L)</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

		<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
PERFORMANCE / CONTENT STANDARD	AK.G1.	History and Nature of Science (SG1, SG2,SG3, SG4)
GRADE LEVEL EXPECTATION	[9] SG2.1.	<p>The student demonstrates an understanding of the bases of the advancement of scientific knowledge by explaining the importance of innovations (i.e., microscope, immunization, computer).</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	[9] SG3.1.	<p>The student demonstrates an understanding that scientific knowledge is ongoing and subject to change by describing the role of serendipity in scientific discoveries.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SA.	Science as Inquiry and Process: A student should understand and be able to apply the processes and applications of scientific inquiry. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SA1.	<p>Develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.</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
PERFORMANCE / CONTENT STANDARD	AK.SB.	Concepts of Physical Science: A student should understand and be able to apply the concepts, models, theories, universal principles, and facts that explain the physical world. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SB3.	<p>Develop an understanding of the interactions between matter and energy, including physical, chemical, and nuclear changes, and the effects of these interactions on physical systems.</p> <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
PERFORMANCE / CONTENT STANDARD	AK.SC.	Concepts of Life Science: A student should understand and be able to apply the concepts, models, theories, facts, evidence, systems, and processes of life science. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SC2.	<p>Develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.</p> <ul style="list-style-type: none"> Cell Growth: 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 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
PERFORMANCE / CONTENT STANDARD	AK.SE.	Science and Technology: A student should understand the relationships among science, technology, and society. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SE2.	<p>Develop an understanding that solving problems involves different ways of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SF.	Cultural, Social, Personal Perspectives and Science: A student should understand the dynamic relationships among scientific, cultural, social, and personal perspectives. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SF1.	<p>Develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SG.	History and Nature of Science: A student should understand the history and nature of science. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SG1.	<p>Develop an understanding that historical perspectives of scientific explanations demonstrate that scientific knowledge changes over time, building on prior knowledge.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG2.	<p>Develop an understanding that the advancement of scientific knowledge embraces innovation and requires empirical evidence, repeatable investigations, logical arguments, and critical review in striving for the best possible explanations of the natural world.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG3.	<p>Develop an understanding that scientific knowledge is ongoing and subject to change as new evidence becomes available through experimental and/or observational confirmation(s).</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG4.	<p>Develop an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD

Grade 10

PERFORMANCE / CONTENT STANDARD	AK.A1.	Science as Inquiry and Process (SA1, SA2, SA3)
GRADE LEVEL EXPECTATION	[10] SA1.1.	The student develops an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making

		<p>generalizations, analyzing data, developing models, inferring and communicating.</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>[10] SA1.2.</p>	<p>The student develops an understanding of the processes of science by reviewing pertinent literature, hypothesizing, making qualitative and quantitative observations, controlling experimental variables, analyzing data statistically (i.e., mean, median, mode), and using this information to draw conclusions, compare results to others, suggest further experimentation, and apply their conclusions to other problems. (L)</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

		<ul style="list-style-type: none"> 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	[10] SA2.1.	<p>The student will demonstrate an understanding of the attitudes and approaches to scientific inquiry by examining methodology and conclusions to identify bias and determining if evidence logically supports the 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
PERFORMANCE / CONTENT STANDARD	AK.C1.	Concepts of Life Science (SC1, SC2, SC3)
GRADE LEVEL EXPECTATION	[10] SC2.1.	The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by describing the

		<p>structure-function relationship (e.g., joints, lungs).</p> <ul style="list-style-type: none"> Cellular World Unit 6 Lab 6 Activity 1 Understanding Why Cells Aren't Big
GRADE LEVEL EXPECTATION	[10] SC2.2.	<p>The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by explaining that cells have specialized structures in which chemical reactions occur.</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 Cells and Energy: 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 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	[10] SC2.3.	<p>The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by explaining the functions of organs of major systems (i.e., respiratory, digestive, circulatory, reproductive, nervous, musculoskeletal, and excretory).</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	[10] SC3.2.	<p>The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by exploring ecological relationships (e.g., competition, niche, feeding relationships, symbiosis). (L)</p> <ul style="list-style-type: none"> Cell Structure and Function: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.E1.	Science and Technology (SE1, SE2, SE3)
GRADE LEVEL EXPECTATION	[10] SE2.1.	The student demonstrates an understanding that solving problems involves different ways of thinking by questioning, researching, modeling, simulating, and

		<p>testing multiple solutions to a problem. (L)</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
PERFORMANCE / CONTENT STANDARD	AK.G1.	History and Nature of Science (SG1, SG2,SG3, SG4)
GRADE LEVEL EXPECTATION	[10] SG2.1.	<p>The student demonstrates an understanding of the bases of the advancement of scientific knowledge by using an account of an event to recognize the processes of science used by historically significant scientists (e.g., Goodall, Watson & Crick, Newton).</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	[10] SG4.1.	<p>The student will demonstrate an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base by recognizing the role of these factors on scientific advancements.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SA.	Science as Inquiry and Process: A student should understand and be able to apply the processes and applications of scientific inquiry. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SA1.	Develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.

		<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
PERFORMANCE / CONTENT STANDARD	AK.SB.	Concepts of Physical Science: A student should understand and be able to apply the concepts, models, theories, universal principles, and facts that explain the physical world. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SB3.	<p>Develop an understanding of the interactions between matter and energy, including physical, chemical, and nuclear changes, and the effects of these interactions on physical systems.</p> <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
PERFORMANCE / CONTENT STANDARD	AK.SC.	Concepts of Life Science: A student should understand and be able to apply the concepts, models, theories, facts, evidence, systems, and processes of life science. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SC2.	<p>Develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.</p> <ul style="list-style-type: none"> Cell Growth: 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 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

		<p>Onion Roots</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 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
PERFORMANCE / CONTENT STANDARD	AK.SE.	Science and Technology: A student should understand the relationships among science, technology, and society. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SE2.	<p>Develop an understanding that solving problems involves different ways of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SF.	Cultural, Social, Personal Perspectives and Science: A student should understand the dynamic relationships among scientific, cultural, social, and personal perspectives. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SF1.	<p>Develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
PERFORMANCE / CONTENT STANDARD	AK.SG.	History and Nature of Science: A student should understand the history and nature of science. A student who meets the content standard should:
GRADE LEVEL EXPECTATION	SG1.	<p>Develop an understanding that historical perspectives of scientific explanations demonstrate that scientific knowledge changes over time, building on prior knowledge.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG2.	<p>Develop an understanding that the advancement of scientific knowledge embraces innovation and requires empirical evidence, repeatable investigations, logical arguments, and critical review in striving for the best possible explanations of the natural world.</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG3.	<p>Develop an understanding that scientific knowledge is ongoing and subject to change as new evidence becomes available through experimental and/or observational confirmation(s).</p> <ul style="list-style-type: none"> Cell Types and Organization: Teacher Resource CD
GRADE LEVEL EXPECTATION	SG4.	<p>Develop an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base.</p>

- | | | |
|--|--|--|
| | | <ul style="list-style-type: none">• Cell Types and Organization: Teacher Resource CD |
|--|--|--|

© 2008, EdGate Correlation Services, LLC. All Rights reserved.