

**Inquiry Investigations™**  
**Genetics and Inheritance MODULE - 1282831**  
**Grades: 7-10**

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**Oregon Content Standards**  
**Science**  
**Grade 7**

<b>STANDARD</b>	<b>OR.2.</b>	<b>Life Science: Understand structure, functions, and interactions of living organisms and the environment.</b>
<b>CONTENT STANDARD</b>	<b>2.1.</b>	<b>Organisms: Describe the characteristics, structure, and functions of organisms.</b>
<b>BENCHMARK</b>	<b>2.1.2.</b>	<b>Describe and explain the structure and functions of an organism in terms of cells, tissues, and organs.</b>
<b>GRADE LEVEL EXAMPLE</b>	<b>2.1.2.b.</b>	<p>Recognize how structural differences among organisms at the cellular, tissue, and organ level are related to their habitat and life requirements.</p> <ul style="list-style-type: none"> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>GRADE LEVEL EXAMPLE</b>	<b>2.1.2.d.</b>	<p>Explain how our understanding of cells and microbes has changed over time.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>
<b>STANDARD</b>	<b>OR.2.</b>	<b>Life Science: Understand structure, functions, and interactions of living organisms and the environment.</b>
<b>CONTENT STANDARD</b>	<b>2.2.</b>	<b>Heredity: Understand the transmission of traits in living things.</b>
<b>BENCHMARK</b>	<b>2.2.1.</b>	<b>Describe how the traits of an organism are passed from generation to generation.</b>
<b>GRADE LEVEL EXAMPLE</b>	<b>2.2.1.b.</b>	<p>Identify traits inherited through genes and those resulting from interactions with the environment.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating</li> </ul>

		<p>Meiosis and Fertilization</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Teacher Resource CD: Genetics and Heredity</li> <li>• Teacher Resource CD: Genetics and Inheritance</li> <li>• Teacher Resource CD: The DNA Connection</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<p>GRADE LEVEL EXAMPLE</p>	<p>2.2.1.c.</p>	<p>Use simple laws of probability to predict patterns of heredity with the use of Punnett squares.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and</li> </ul>

		<p>the Hardy-Weinberg Principle</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Teacher Resource CD: Genetics and Heredity</li> <li>• Teacher Resource CD: Genetics and Inheritance</li> <li>• Teacher Resource CD: The DNA Connection</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<p>GRADE LEVEL EXAMPLE</p>	<p>2.2.1.d.</p>	<p>Explain how our understanding of heredity has changed over time.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett</li> </ul>

		<p>Squares to Determine Genotypes and Phenotypes</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>Teacher Resource CD: Genetics and Heredity</li> <li>Teacher Resource CD: Genetics and Inheritance</li> <li>Teacher Resource CD: The DNA Connection</li> <li>Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>STANDARD</b>	<b>OR.2.</b>	<b>Life Science: Understand structure, functions, and interactions of living organisms and the environment.</b>
<b>CONTENT STANDARD</b>	<b>2.4.</b>	<b>Diversity/Interdependence: Describe and analyze diversity of species, natural selection, and adaptations.</b>
<b>BENCHMARK</b>	<b>2.4.1.</b>	<b>Describe and explain the theory of natural selection as a mechanism for evolution.</b>
<b>GRADE LEVEL EXAMPLE</b>	<b>2.4.1.a.</b>	<p>Identify and explain how random variations in species can be preserved through natural selection.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Teacher Resource CD: Genetics and Inheritance</li> </ul>
<b>STANDARD</b>	<b>OR.4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.1.</b>	<b>Forming the Question/Hypothesis: Make observations. Formulate and express scientific questions or hypotheses to be investigated based on the observations.</b>
<b>BENCHMARK</b>	<b>4.1.1.</b>	<p>Based on observations and scientific concepts, ask questions or form hypotheses that can be explored through scientific investigations.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> </ul>

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<b>STANDARD</b>	<b>OR.4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.2.</b>	<b>Designing the Investigation: Design scientific investigations to address and explain questions or hypotheses.</b>
<b>BENCHMARK</b>	<b>4.2.1.</b>	<p>Design a scientific investigation to answer questions or test hypotheses.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> </ul>

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<b>STANDARD</b>	<b>OR. 4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.3.</b>	<b>Collecting and Presenting Data: Collect, organize, and display scientific data.</b>
<b>BENCHMARK</b>	<b>4.3.1.</b>	<p>Collect, organize, and display sufficient data to support analysis.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating</li> </ul>

		<p>Meiosis and Fertilization</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Teacher Resource CD: Genetics and Heredity</li> <li>• Teacher Resource CD: The DNA Connection</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>STANDARD</b>	<b>OR.4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.4.</b>	<b>Analyzing and Interpreting Results: Analyze scientific information to develop and present conclusions.</b>
<b>BENCHMARK</b>	<b>4.4.1.</b>	<p>Summarize and analyze data including possible sources of error. Explain results and offer reasonable and accurate interpretations and implications.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>

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### Oregon Content Standards

#### Science

#### Grade 8

<b>STANDARD</b>	<b>OR.2.</b>	<b>Life Science: Understand structure, functions, and interactions of living organisms and the environment.</b>
<b>CONTENT STANDARD</b>	<b>2.1.</b>	<b>Organisms: Describe the characteristics, structure, and functions of organisms.</b>
<b>BENCHMARK</b>	<b>2.1.2.</b>	<b>Describe and explain the structure and functions of an organism in terms of cells, tissues, and organs.</b>
<b>GRADE LEVEL EXAMPLE</b>	<b>2.1.2.b.</b>	<p>Recognize how structural differences among organisms at the cellular, tissue, and organ level are related to their habitat and life requirements.</p> <ul style="list-style-type: none"> <li>Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>GRADE LEVEL EXAMPLE</b>	<b>2.1.2.d.</b>	<p>Explain how our understanding of cells and microbes has changed over time.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>
<b>STANDARD</b>	<b>OR.2.</b>	<b>Life Science: Understand structure, functions, and interactions of living organisms and the environment.</b>
<b>CONTENT STANDARD</b>	<b>2.2.</b>	<b>Heredity: Understand the transmission of traits in living things.</b>
<b>BENCHMARK</b>	<b>2.2.1.</b>	<b>Describe how the traits of an organism are passed from generation to generation.</b>

<p>GRADE LEVEL EXAMPLE</p>	<p>2.2.1.b.</p>	<p>Identify traits inherited through genes and those resulting from interactions with the environment.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Teacher Resource CD: Genetics and Heredity</li> <li>• Teacher Resource CD: Genetics and Inheritance</li> <li>• Teacher Resource CD: The DNA Connection</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<p>GRADE LEVEL EXAMPLE</p>	<p>2.2.1.c.</p>	<p>Use simple laws of probability to predict patterns of heredity with the use of Punnett squares.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About</li> </ul>

		<p>Base Pairs</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Teacher Resource CD: Genetics and Heredity</li> <li>• Teacher Resource CD: Genetics and Inheritance</li> <li>• Teacher Resource CD: The DNA Connection</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<p>GRADE LEVEL EXAMPLE</p>	<p>2.2.1.d.</p>	<p>Explain how our understanding of heredity has changed over time.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's</li> </ul>

		<p>Structure - the Double Helix</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>Teacher Resource CD: Genetics and Heredity</li> <li>Teacher Resource CD: Genetics and Inheritance</li> <li>Teacher Resource CD: The DNA Connection</li> <li>Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>STANDARD</b>	OR.2.	Life Science: Understand structure, functions, and interactions of living organisms and the environment.
<b>CONTENT STANDARD</b>	2.4.	Diversity/Interdependence: Describe and analyze diversity of species, natural selection, and adaptations.
<b>BENCHMARK</b>	2.4.1.	Describe and explain the theory of natural selection as a mechanism for evolution.
<b>GRADE LEVEL EXAMPLE</b>	2.4.1.a.	<p>Identify and explain how random variations in species can be preserved through natural selection.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> </ul>

		<ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Teacher Resource CD: Genetics and Inheritance</li> </ul>
<b>STANDARD</b>	OR. 4.	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	4.1.	<b>Forming the Question/Hypothesis: Make observations. Formulate and express scientific questions or hypotheses to be investigated based on the observations.</b>
<b>BENCHMARK</b>	4.1.1.	<p>Based on observations and scientific concepts, ask questions or form hypotheses that can be explored through scientific investigations.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>Virtual Laboratory: Mendelian Genetics Law of Independent</li> </ul>

		Assortment
STANDARD	OR. 4.	Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.
CONTENT STANDARD	4.2.	Designing the Investigation: Design scientific investigations to address and explain questions or hypotheses.
BENCHMARK	4.2.1.	<p>Design a scientific investigation to answer questions or test hypotheses.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
STANDARD	OR. 4.	Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.

CONTENT STANDARD	4.3.	Collecting and Presenting Data: Collect, organize, and display scientific data.
BENCHMARK	4.3.1.	<p>Collect, organize, and display sufficient data to support analysis.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Teacher Resource CD: Genetics and Heredity</li> <li>• Teacher Resource CD: The DNA Connection</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
STANDARD	OR. 4.	Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.
CONTENT STANDARD	4.4.	Analyzing and Interpreting Results: Analyze scientific information to develop and present conclusions.

BENCHMARK	4.4.1.	<p>Summarize and analyze data including possible sources of error. Explain results and offer reasonable and accurate interpretations and implications.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
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Oregon Content Standards  
Science  
Grade 9

STANDARD	OR.1.	Physical Science: Understand structures and properties of matter and changes that occur in the physical world.
CONTENT STANDARD	1.1.	Matter: Understand structure and properties of matter.

BENCHMARK	1.1.1.	Describe properties of elements and their relationship to the periodic table.
GRADE LEVEL EXAMPLE	1.1.1.a.	<p>Explain atoms and their base components (protons, neutrons, and electrons) as a basis for all matter.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> </ul>
STANDARD	OR.2.	Life Science: Understand structure, functions, and interactions of living organisms and the environment.
CONTENT STANDARD	2.1.	Organisms: Describe the characteristics, structure, and functions of organisms.
BENCHMARK	2.1.1.	Describe, explain, and compare the structure and functions of cells in organisms.
GRADE LEVEL EXAMPLE	2.1.1.b.	<p>Identify unique structures in cells from plants, animals, and prokaryotes.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Teacher Resource CD: The DNA Connection</li> </ul>
GRADE LEVEL EXAMPLE	2.1.1.c.	<p>Identify cell organelles and state how their activities contribute to a particular type of cell carrying out its functions.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>
GRADE LEVEL EXAMPLE	2.1.1.d.	<p>Explain the role of the cell membrane in cell transport.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>
GRADE LEVEL EXAMPLE	2.1.1.g.	<p>Explain how the development of tools and technology, including microscopes, has aided in the understanding of cells and microbes.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>

		<ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>STANDARD</b>	OR.2.	Life Science: Understand structure, functions, and interactions of living organisms and the environment.
<b>CONTENT STANDARD</b>	2.2.	Heredity: Understand the transmission of traits in living things.
<b>BENCHMARK</b>	2.2.1.	Explain laws of heredity and their relationship to the structure and function of DNA.
<b>GRADE LEVEL EXAMPLE</b>	2.2.1.a.	<p>Describe the structure of DNA and the way that DNA functions to control protein synthesis.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>Teacher Resource CD: Genetics and Heredity</li> <li>Teacher Resource CD: The DNA Connection</li> </ul>
<b>GRADE LEVEL EXAMPLE</b>	2.2.1.b.	Recognize and understand the differences between meiosis and mitosis in cellular

		<p>reproduction.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>
GRADE LEVEL EXAMPLE	2.2.1.c.	<p>Recognize that changes in DNA (mutations) and anomalies in chromosomes create changes in organisms.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Teacher Resource CD: Genetics and Heredity</li> <li>Teacher Resource CD: Genetics and Inheritance</li> <li>Teacher Resource CD: The DNA Connection</li> </ul>
GRADE LEVEL EXAMPLE	2.2.1.d.	<p>Apply concepts of inheritance of traits, including Mendel's laws, Punnett squares, and pedigrees, to determine the characteristics of offspring.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>Teacher Resource CD: Genetics and Heredity</li> <li>Teacher Resource CD: Genetics and Inheritance</li> <li>Teacher Resource CD: The DNA Connection</li> <li>Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
GRADE LEVEL EXAMPLE	2.2.1.e.	<p>Recognize the existence of technology that can alter and/or determine inherited traits.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> </ul>

		<ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>Teacher Resource CD: Genetics and Heredity</li> </ul>
<b>STANDARD</b>	<b>OR.2.</b>	<b>Life Science: Understand structure, functions, and interactions of living organisms and the environment.</b>
<b>CONTENT STANDARD</b>	<b>2.4.</b>	<b>Diversity/Interdependence: Describe and analyze diversity of species, natural selection, and adaptations.</b>
<b>BENCHMARK</b>	<b>2.4.1.</b>	<b>Analyze how living things have changed over geological time, using fossils and other scientific evidence.</b>
<b>GRADE LEVEL EXAMPLE</b>	<b>2.4.1.d.</b>	<p>Explain the relationship between genetics, mutations, and biological evolution.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Teacher Resource CD: Genetics and Inheritance</li> </ul>
<b>STANDARD</b>	<b>OR.4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.1.</b>	<b>Forming the Question/Hypothesis: Make observations. Formulate and express scientific questions or hypotheses to be investigated based on the observations.</b>
<b>BENCHMARK</b>	<b>4.1.1.</b>	<p>Based on observations and scientific concepts, ask questions or form hypotheses that can be answered or tested through scientific investigations.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic</li> </ul>

		<p>Origins through DNA Sequencing</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>STANDARD</b>	<b>OR. 4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.2.</b>	<b>Designing the Investigation: Design scientific investigations to address and explain questions or hypotheses.</b>
<b>BENCHMARK</b>	<b>4.2.1.</b>	<p>Design a scientific investigation that provides sufficient data to answer a question or test a hypothesis.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> </ul>

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<b>STANDARD</b>	<b>OR.4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.3.</b>	<b>Collecting and Presenting Data: Collect, organize, and display scientific data.</b>
<b>BENCHMARK</b>	<b>4.3.1.</b>	<p>Collect, organize, and display sufficient data to facilitate scientific analysis and interpretation.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting</li> </ul>

		<p>Genetic Disease</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Teacher Resource CD: Genetics and Heredity</li> <li>• Teacher Resource CD: The DNA Connection</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>STANDARD</b>	<b>OR.4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.4.</b>	<b>Analyzing and Interpreting Results: Analyze scientific information to develop and present conclusions.</b>
<b>BENCHMARK</b>	<b>4.4.1.</b>	<p>Summarize and analyze data, evaluating sources of error or bias. Propose explanations that are supported by data and knowledge of scientific terminology.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> </ul>

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## Oregon Content Standards

### Science

#### Grade 10

<b>STANDARD</b>	<b>OR.1.</b>	<b>Physical Science: Understand structures and properties of matter and changes that occur in the physical world.</b>
<b>CONTENT STANDARD</b>	1.1.	Matter: Understand structure and properties of matter.
<b>BENCHMARK</b>	1.1.1.	Describe properties of elements and their relationship to the periodic table.
<b>GRADE LEVEL EXAMPLE</b>	1.1.1.a.	<p>Explain atoms and their base components (protons, neutrons, and electrons) as a basis for all matter.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> </ul>
<b>STANDARD</b>	<b>OR.2.</b>	<b>Life Science: Understand structure, functions, and interactions of living organisms and the environment.</b>
<b>CONTENT STANDARD</b>	2.1.	Organisms: Describe the characteristics, structure, and functions of organisms.
<b>BENCHMARK</b>	2.1.1.	Describe, explain, and compare the structure and functions of cells in organisms.
<b>GRADE LEVEL EXAMPLE</b>	2.1.1.b.	<p>Identify unique structures in cells from plants, animals, and prokaryotes.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Teacher Resource CD: The DNA Connection</li> </ul>
<b>GRADE LEVEL EXAMPLE</b>	2.1.1.c.	<p>Identify cell organelles and state how their activities contribute to a particular type of cell carrying out its functions.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>
<b>GRADE LEVEL EXAMPLE</b>	2.1.1.d.	<p>Explain the role of the cell membrane in cell transport.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>
<b>GRADE LEVEL EXAMPLE</b>	2.1.1.g.	<p>Explain how the development of tools and technology, including microscopes, has aided in the understanding of cells and microbes.</p>

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<b>STANDARD</b>	OR.2.	Life Science: Understand structure, functions, and interactions of living organisms and the environment.
<b>CONTENT STANDARD</b>	2.2.	Heredity: Understand the transmission of traits in living things.
<b>BENCHMARK</b>	2.2.1.	Explain laws of heredity and their relationship to the structure and function of DNA.
<b>GRADE LEVEL EXAMPLE</b>	2.2.1.a.	Describe the structure of DNA and the way that DNA functions to control protein synthesis. <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> </ul>

		<ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>Teacher Resource CD: Genetics and Heredity</li> <li>Teacher Resource CD: The DNA Connection</li> </ul>
GRADE LEVEL EXAMPLE	2.2.1.b.	<p>Recognize and understand the differences between meiosis and mitosis in cellular reproduction.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>
GRADE LEVEL EXAMPLE	2.2.1.c.	<p>Recognize that changes in DNA (mutations) and anomalies in chromosomes create changes in organisms.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Teacher Resource CD: Genetics and Heredity</li> <li>Teacher Resource CD: Genetics and Inheritance</li> <li>Teacher Resource CD: The DNA Connection</li> </ul>
GRADE LEVEL EXAMPLE	2.2.1.d.	<p>Apply concepts of inheritance of traits, including Mendel's laws, Punnett squares, and pedigrees, to determine the characteristics of offspring.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> </ul>

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GRADE LEVEL EXAMPLE	2.2.1.e.	<p>Recognize the existence of technology that can alter and/or determine inherited traits.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>Teacher Resource CD: Genetics and Heredity</li> </ul>
STANDARD	OR.2.	Life Science: Understand structure, functions, and interactions of living organisms and the environment.
CONTENT STANDARD	2.4.	Diversity/Interdependence: Describe and analyze diversity of species, natural selection, and adaptations.
BENCHMARK	2.4.1.	Analyze how living things have changed over geological time, using fossils and other scientific evidence.
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		<p>Genetic Cross to Demonstrate the Law of Incomplete Dominance</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
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<b>CONTENT STANDARD</b>	<b>4.2.</b>	<b>Designing the Investigation: Design scientific investigations to address and explain questions or hypotheses.</b>
<b>BENCHMARK</b>	<b>4.2.1.</b>	<p>Design a scientific investigation that provides sufficient data to answer a question or test a hypothesis.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> </ul>

		<p>Assortment</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>STANDARD</b>	<b>OR. 4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.3.</b>	<b>Collecting and Presenting Data: Collect, organize, and display scientific data.</b>
<b>BENCHMARK</b>	<b>4.3.1.</b>	<p>Collect, organize, and display sufficient data to facilitate scientific analysis and interpretation.</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>• Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>• Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>• Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> </ul>

		<ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the Frequency of Common Human Traits in a Population</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>Teacher Resource CD: Genetics and Heredity</li> <li>Teacher Resource CD: The DNA Connection</li> <li>Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
<b>STANDARD</b>	<b>OR.4.</b>	<b>Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.</b>
<b>CONTENT STANDARD</b>	<b>4.4.</b>	<b>Analyzing and Interpreting Results: Analyze scientific information to develop and present conclusions.</b>
<b>BENCHMARK</b>	<b>4.4.1.</b>	<p>Summarize and analyze data, evaluating sources of error or bias. Propose explanations that are supported by data and knowledge of scientific terminology.</p> <ul style="list-style-type: none"> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 1: Learning About Base Pairs</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 2: Modeling DNA Replication</li> <li>Genetics and Inheritance: Unit 1 Lab 1 Activity 3: Exploring DNA's Structure - the Double Helix</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 1: Applying the Laws of Chance to Genetics</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 2: Modeling a Genetic Cross to Demonstrate the Law of Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 3: Modeling a Genetic Cross to Demonstrate the Law of Incomplete Dominance</li> <li>Genetics and Inheritance: Unit 2 Lab 2 Activity 4: Modeling a Dihybrid Cross to Demonstrate the Law of Independent Assortment</li> <li>Genetics and Inheritance: Unit 2 Lab 3 Activity 1: Simulating Meiosis and Fertilization</li> <li>Genetics and Inheritance: Unit 3 Lab 4 Activity 1: Determine the</li> </ul>

		<p>Frequency of Common Human Traits in a Population</p> <ul style="list-style-type: none"> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 2: Taste Tests and the Hardy-Weinberg Principle</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 3: Constructing a Family Pedigree</li> <li>• Genetics and Inheritance: Unit 3 Lab 4 Activity 4: Using Punnett Squares to Determine Genotypes and Phenotypes</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 1: Analyze Genetic Origins through DNA Fingerprinting</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 2: Analyze Genetic Origins through DNA Sequencing</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 3: Understanding the Human Genome</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 4: Diagnosing Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 5 Activity 5: Predicting Genetic Disease</li> <li>• Genetics and Inheritance: Unit 3 Lab 6 Activity 1: Examining Human Variation in Blood</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 1: Case of the Royal Mystery</li> <li>• Genetics and Inheritance: Unit 4 Lab 7 Activity 2: Calculating the Frequency of Human Traits in a Population</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Dominance</li> <li>• Virtual Laboratory: Mendelian Genetics Law of Independent Assortment</li> </ul>
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