

## Grade 10 Biology Scope & Sequence

<u>First Unit</u>	<b>Textbook &amp; Materials</b>	<b>Supplements</b>	<b>Assessment Options</b>
Ecology	Prentice-Hall Biology Chapter 3 pgs 60-85 Chapter 4 pgs 86-117 Chapter 5 pgs 118-137 Chapter 6 pgs 138-165	<ul style="list-style-type: none"> <li>• Readings/Articles                             <ul style="list-style-type: none"> <li>– Let’s Eat</li> <li>– Bursting at the Seams</li> <li>– Deer Carrying Capacity</li> <li>– Easter’s End</li> <li>– Tipping Point</li> <li>– Turning Point</li> <li>– Crossing the Threshold</li> <li>– Global Warming</li> </ul> </li> </ul>	<p><b><u>Formative</u></b></p> <ul style="list-style-type: none"> <li>• Nature’s Food Web</li> </ul> <p><b><u>Summative</u></b></p> <ul style="list-style-type: none"> <li>• Unit test</li> </ul>
<b>Days/Weeks</b>			
Minimum: 11 days			
Maximum: 13 days		(See division chair for all supplements)	(See division chair)

### **Oregon Science Standards:**

#### **H.1 Structure and Function**

**H.2L.1**-Explain how energy and chemical elements pass through systems. Describe how chemical elements are combined and recombined in different ways as they cycle through various levels of organization in biological systems.

**H.2L.2**-Explain how ecosystems change in response to disturbances and interactions. Analyze the relationships among biotic and abiotic factors in ecosystems.

#### **H.2 Interaction and Change**

**H.2E.1**-Identify and predict the effect of energy sources, physical forces, and transfer processes that occur in the earth system. Describe how matter and energy are cycled between system components over time.

**H.2E.2** -Explain how Earth’s atmosphere, geosphere, and hydrosphere change over time and at varying rates. Explain techniques used to elucidate the history of events on Earth.

### **Common Core Standards for Literacy in Science-Reading:**

**RST.9-10.1**-Cite specific evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

**RST.9-10.2**-Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex, process, phenomenon, or concept; provide an accurate summary of the text.

**RST.9-10.5**-Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., Force, friction, reaction force, energy).

**RST.9-10.5**-Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

**RST.9-10.8**-Assess the extent to which the reasoning and evidence in a text support the author’s claim or a recommendation for solving a scientific or technical problem.

**RST.9-10.9**- Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

**RST.9-10.10**-By the end of grade 10 read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.

### **Common Core Standards for Literacy in Science-Writing:**

**WHST.9-10.1**-Write arguments focused on discipline-specific content

**WHST.9-10.2**-Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments or technical processes.

**WHST.9-10.5**-Develop and strengthen writing as needed by planning, revising, editing, rewriting or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

### **Vocabulary:**

Ecology	Heterotroph
Organism	Autotroph
Species	Trophic levels
Population	Symbiotic relationships
Community	Limiting factor
Biome	Carrying capacity
Biosphere	Ozone
Niche	Global climate change
Habitat	Predation
Herbivore	Abiotic
Omnivore	Biotic
Carnivore	Decomposer

**Common Core Reading Vocabulary:** textual evidence, explicit, precise details, central idea, conclusion, depiction, process, phenomenon, concept, summary, structure, relationships, quantitative information, equation, formats, credibility, compare, contrast, contradict, reading strategy, comprehension

### **Critical Content Learning Targets:**

- I can define the levels of organization in an ecosystem.
- I can analyze the relationships among biotic and abiotic factors in ecosystems.
- I can explain how energy cycles through an ecosystem.
- I can compare and contrast different symbiotic relationships.
- I can identify various factors that lead to climate change.

### **Common Core Reading Learning Targets:**

- I can define textual evidence (“word for word” support).
- I can read closely and find explicit (right there) information in science and technical texts.
- I can define central idea (main point in a piece of writing).
- I can analyze a text and determine how an author’s use of information conveys (makes known) the central ideas or conclusions.
- I can trace (follow) a text’s explanation or depiction of a complex, process, phenomenon, or concept.
- I can define summary (a shortened version of the text that states its key points).
- I can compose an accurate summary stating the key information, central idea or conclusion of the text).

**Common Core Writing Vocabulary:** debate, argument, claim, counterclaim, evidence, credible sources, transition, organizational structure, formatting structure, domain-specific vocabulary, transition, cohesion, revision strategy, edit, purpose, audience

- I can identify key terms and concepts in a text.
- I can analyze the structure of the relationships among key terms and concepts in a text.
- I can explain the relationship among key terms in a text.
- I can identify quantitative or technical information in a text when expressed visually (e.g., tables, charts, graphs), mathematically (e.g., in an equation), or in words.
- I can translate quantitative or technical information expressed in words into visual forms.
- I can translate information into words that is expressed visually or mathematically in a text.
- I can use all informational formats available to develop a deeper understanding of the content or concepts presented.
- I can identify the claim (e.g., argument, conclusion) or recommendation for solving a scientific problem an author presents in a text.
- I can identify claims or recommendations that are supported by fact(s) and those that are opinions.
- I can recognize when an author introduces irrelevant evidence (unrelated or unnecessary evidence) to his/her argument.
- I can explain that information can be gained from my own experiments, simulations, or multimedia sources with that gained from reading a text on the same topic.
- I can compare (analyze similarities) information gained from my own experiments, simulations, or multimedia sources with that gained from reading a text on the same topic.
- I can contrast (analyze differences) information gained from my own experiments, simulations, or multimedia sources with that gained from reading a text on the same topic.
- I can recognize when the text I am reading is too easy or too difficult for me.
- I can choose reading strategies (e.g., ask questions, make connections, take notes, make inferences, visualize, re-read) that will help me comprehend difficult texts.

**Common Core Writing Learning Targets:**

- I can support my claims and counterclaims in a discipline-appropriate form by pointing out the strengths and limitations of both using data and textual evidence (“word for word” support) found in credible sources.
- I can select a historical event, scientific procedure/experiment, or technical process and identify and gather relevant and appropriate information (e.g., well-chosen facts, definitions, details, quotations, examples) to share with my audience.
- I can use prewriting strategies to formulate ideas (e.g., graphic organizers, brainstorming, lists).
- I can apply revision strategies (e.g., reading aloud, checking for misunderstandings, adding and deleting details).
- I can edit my writing to determine if what is most significant for a specific purpose and audience is addressed and revise when necessary.

## Grade 10 Biology Scope & Sequence

<u>Second Unit</u>	<b>Textbook &amp; Materials</b>	<b>Supplements</b>	<b>Assessment Options</b>
Biochemistry	Prentice Hall Biology Chapter 2 pgs 44-48 Chapter 17 pgs 424-428	<ul style="list-style-type: none"> <li>• “Origins” video</li> <li>• “Formation of the Universe” A&amp;E Video</li> <li>• Bears and Hibernation reading</li> <li>• The Skinny on Overweight and Obesity</li> <li>• How stuff works, food energy</li> <li>• Macronutrient Reading Sheets</li> <li>• “The Missing Ingredients”</li> <li>• “Madelyn’s Story”</li> </ul>	<p><b><u>Formative</u></b></p> <ul style="list-style-type: none"> <li>• Food Energy Lab</li> <li>• Macronutrients in Foods Lab</li> </ul> <p><b><u>Summative</u></b></p> <ul style="list-style-type: none"> <li>• Unit Test</li> </ul>
<b>Days/Weeks</b>			
Minimum: 11 days			
Maximum: 13 days		(See division chair for all supplements)	(See division chair)

### **Oregon Science Standards:**

#### **H.1 Structure and Function**

**H.1L.1**-Compare and contrast the four types of organic macromolecules. Explain how they compose cellular structures of organisms and are involved in critical cellular processes.

### **Common Core Standards for Literacy in Science-Reading:**

**RST.9-10.1**-Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations and descriptions.

**RST.9-10.2**-Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

**RST.9-10.3**-Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

**RST.9-10.6**-Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.

### **Common Core Standards for Literacy in Science-Writing:**

**WHST.9-10.1**-Write arguments focused on discipline-specific content

**WHST.9-10.2**-Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments or technical processes.

**WHST.9-10.5**-Develop and strengthen writing as needed by planning, revising, editing, rewriting or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

**WHST.9-10.5**-Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

**Vocabulary:**

Covalent bond	Amino acid
Ionic bond	Protein
Element	Carbohydrate
Compound	Nucleic acid
Molecule	Lipid
Enzyme	Fatty acid
Macromolecule	Food Energy
Organic	Miller-Urey Experiment
Biomolecule	

**Common Core Reading Vocabulary:** textual evidence, explicit, precise details, central idea, conclusion, depiction, process, phenomenon, concept, summary, multistep procedure, experiment, technical task, purpose

**Common Core Writing Vocabulary:** debate, argument, claim, counterclaim, evidence, credible sources, transition, organizational structure, formatting structure, domain-specific vocabulary, transition, cohesion, revision strategy, edit, purpose, audience, writing format, writing style, task, purpose, audience

**Learning Targets:**

- I can compare and contrast the four types of organic macromolecules.
- I can explain how macromolecules provide food energy.
- I can explain the Miller-Urey experiment.

**Common Core Reading Learning Targets:**

- I can define textual evidence (“word for word” support).
- I can read closely and find explicit (right there) information in science and technical texts.
- I can analyze a text and determine how an author’s use of information conveys (makes known) the central ideas or conclusions.
- I can trace (follow) a text’s explanation or depiction of a complex process, phenomenon, or concept.
- I can define summary (a shortened version of the text that states key points).
- I can compose an accurate summary stating the key information, central idea, or conclusions of the text.
- I can identify the steps necessary when carrying out experiments, taking measurements, or performing technical tasks.
- I can precisely follow a complex multistep procedure when carrying out experiments, taking measurements or performing technical tasks.
- I can attend (pay attention to) to special cases or exceptions defined in the text when carrying out experiments, taking measurements, or performing technical tasks.
- I can define purpose as why an author chooses to include an explanation, procedure or discussion in a text.

**Common Core Writing Learning Targets:**

- I can support my claims and counterclaims in a discipline-appropriate form by pointing out the strengths and limitations of both using data and textual evidence (“word for word” support) found in credible sources.
- I can select a historical event, scientific procedure/experiment, or technical process and identify and gather relevant and appropriate information (e.g., well-chosen facts, definitions, details, quotations, examples) to share with my audience.
- I can use prewriting strategies to formulate ideas (e.g., graphic organizers, brainstorming, lists).
- I can apply revision strategies (e.g., reading aloud, checking for misunderstandings, adding and deleting details).
- I can edit my writing to determine if what is most significant for a specific purpose and audience is addressed and revise when necessary.
- I can recognize the different writing tasks (e.g., journal, reflection, research) require varied time frames to complete.

## Grade 10 Biology Scope & Sequence

<b>Third Unit</b>	<b>Textbook &amp; Materials</b>	<b>Supplements</b>	<b>Assessment Options</b>
Cells	Prentice Hall Biology: Chapter 7 pgs 167-199	<ul style="list-style-type: none"> <li>• “Where Did Life Come From” Origins Video</li> <li>• Cell formation video clips (YouTube) <a href="http://www.youtube.com/watch?v=4ARVDXcyu8A">http://www.youtube.com/watch?v=4ARVDXcyu8A</a></li> </ul>	<p><b><u>Formative:</u></b></p> <ul style="list-style-type: none"> <li>• Cell formation comic strip</li> <li>• Cell Analogy Project</li> <li>• Baggie Lab</li> <li>• Egg Lab</li> <li>• Photosynthesis &amp; Cellular Respiration observation lab</li> </ul> <p><b><u>Summative:</u></b></p> <ul style="list-style-type: none"> <li>• Unit Test (See division chair)</li> </ul>
<b>Days/Weeks</b>			
Minimum: 9 days			
Maximum: 11 days		(See division chair for supplements)	

### **Oregon Science Standards:**

#### **H.1 Structure and Function**

**H.1L.1**-Compare and contrast the four types of organic macromolecules. Explain how they compose the cellular structures of organisms and are in critical cellular structures

**H.1L.4**-Explain how cellular processes and cellular differentiation are regulated both internally and externally in response to the environments in which they exist.

### **Common Core Standards for Literacy in Science-Reading:**

**RST.9-10.2**-Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

**RST.9-10.5**-Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understating of the information or ideas.

**RST/9-10.7**-Integrate and evaluate multiple sources of information presented in diverse formats and media in order to address a question or solve a problem.

### **Common Core Standards for Literacy in Science-Writing:**

**WHST.9-10.40**-Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.



**Vocabulary:**

Nucleus  
 Endoplasmic Reticulum  
 Chloroplast  
 Mitochondria  
 Flagella  
 Ribosome  
 Golgi Apparatus  
 Cell Membrane  
 Lysosome  
 Cell wall  
 Cytoplasm  
 Cilia  
 Vacuole  
 Prokaryote

Osmosis  
 Hypertonic  
 Hypotonic  
 Isotonic  
 Plasmolysis  
 Transport proteins  
 Homeostasis  
 Diffusion  
 Passive transport  
 Facilitated transport  
 Active transport  
 Phospholipid  
 Semi-permeable  
 Eukaryote

**Common Core Reading Vocabulary:** central idea, conclusion, summary, paraphrasing, structure, hierarchy, facilitate, integrate

**Common Core Writing Vocabulary:** writing style, purpose, task, audience

**Critical Content Learning Targets:**

- I can explain how the four organic macromolecules compose cellular structure of organisms and are involved in critical cellular processes.
- I can identify the principles of the cell theory.
- I can compare and contrast various cell types.
- I can describe the structure and functions of cell organelles.
- I can compare and contrast membrane transport systems.
- I can compare and contrast cellular respiration and photosynthesis.

**Common Core Reading Learning Targets:**

- I can define a central idea (main point in a piece of writing)
- I can trace (follow) a text's explanation or depiction of a complex process, phenomenon, or concept.
- I can analyze how a text structures information or ideas into categories or hierarchies
- I can identify multiple sources of information presented in diverse media or formats to assist me in addressing a question or solving a problem

**Common Core Writing Learning Targets:**

- I can use organizational/formatting structures (graphic organizers) to develop my writing ideas.

## Grade 10 Biology Scope & Sequence

<b><u>Fourth Unit</u></b>	<b>Textbook &amp; Materials</b>	<b>Supplements</b>	<b>Assessment Options</b>
Cell Division	Prentice Hall Biology: Chapter 10 pgs 240-253	<ul style="list-style-type: none"> <li>• “Life’s Greatest Miracle” Video</li> <li>• Cell division flipbook</li> </ul>	<p><b><u>Formative:</u></b></p> <ul style="list-style-type: none"> <li>• Flip Book</li> </ul> <p><b><u>Summative:</u></b></p> <ul style="list-style-type: none"> <li>• Unit Test</li> </ul>
<b>Days/Weeks</b>			
Minimum: 4 days			
Maximum: 6 days		(See division chair for all supplements)	(See division chair)

**Oregon Science Standards:**

**H.1 Structure and Function**

**H.1L.4**-Explain how cellular processes and cellular differentiation are regulated both internally and externally in response the environments in which they exist.

**H.2L.3**-Describe how asexual and sexual reproduction affect genetic diversity.

**Common Core Standards for Literacy in Science-Reading:**

**RST.9-10.2**-Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

**RST.9-10.5**-Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understating of the information or ideas

**Common Core Standards for Literacy in Science-Writing:**

**WHST.9-10.2**-Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

**WHST.9-10.40**-Produce clear and coherent writing in which the development, organization and style are appropriate to task, purpose, and audience.

**Vocabulary:**

Mitosis	Gamete
Meiosis	Somatic cell
Interphase	Chromosomes
Prophase	Diploid
Metaphase	Haploid
Anaphase	Homologous
Telophase	Replication
Cytokinesis	Non-disjunction
Independent Assortment	Crossing over

**Common Core Reading Vocabulary:**

Central idea, conclusion, summary, paraphrasing, structure, hierarchy

**Common Core Writing Vocabulary:**

Organizational structure, domain-specific vocabulary, textual evidence, analysis, reflection, research

**Critical Content Learning Targets:**

- I can compare and contrast mitosis and meiosis.
- I can compare and contrast asexual and sexual reproduction.

**Common Core Reading Learning Targets:**

- I can define summary
- I can compose an accurate summary by paraphrasing complex concepts, processes, or information presented in a text
- I can demonstrate understanding of the information or ideas presented in a text

**Common Core Writing Learning Targets:**

- I can select a historical event, scientific procedure/ experiment, or technical process and identify and gather relevant information to share with my audience.
- I can define textual evidence (“word for word” support).
- I can compose written responses and include textual evidence to strengthen my analysis, reflection, and/or research.

## Grade 10 Biology Scope & Sequence

<b><u>Fifth Unit</u></b>	<b>Textbook &amp; Materials</b>	<b>Supplements</b>	<b>Assessment Options</b>
Molecular Genetics	Prentice Hall Biology Text Chapter 12 pgs 286 - 217	<ul style="list-style-type: none"> <li>• Breaking the Code Activity</li> <li>• Cracking the Code video</li> <li>• “GATTACA” video</li> <li>• “Lorenzo’s Oil” video</li> <li>• “DNA-The Secret of Life” video</li> <li>• DNA Extraction Lab</li> <li>• Lizard DNA</li> </ul>	<p><b><u>Formative:</u></b></p> <ul style="list-style-type: none"> <li>• Protein Synthesis Sentences</li> </ul> <p><b><u>Summative:</u></b></p> <ul style="list-style-type: none"> <li>• Unit Test</li> </ul>
<b><u>Days/Weeks</u></b>			
Minimum: 12 days			
Maximum: 14 days		(See division chair for supplements)	(See division chair)

**Oregon Science Standards:**

**H.1 Structure and Function**

**H.1L.2-**Describe the chemical structure of DNA and its relationship to chromosomes. Explain the role of DNA in protein synthesis.

**Common Core Standards for Literacy in Science - Reading:**

**RST.9-10.2-**Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

**RST.9-10.5-**Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understating of the information or ideas.

**Common Core Standards for Literacy in Science - Writing:**

**WHST.9-10.2-**Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

**WHST.9-10.40-**Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

**Critical Content Vocabulary:**

Protein synthesis	Thymine	Watson
Replication	Cytocine	Crick
Transcription	Uracil	Franklin
Translation	DNA	Double helix
Nitrogen bases	RNA	Anticodon
Base Pairs	mRNA	Codon
Nucleotide	tRNA	Adenine
Guanine		

**Common Core Reading Vocabulary**

Central idea, conclusion, summary, paraphrasing,

**Common Core Writing Vocabulary**

Organizational structure, domain-specific vocabulary, textual evidence, analysis, reflection

**Critical Content Learning Targets:**

- I can describe the chemical structure of DNA and its relationship to chromosomes.
- I can explain the role of DNA in protein synthesis.
- I can identify the process of protein synthesis.

**Common Core Reading Learning Targets:**

- I can analyze a text and determine how an author's use of information conveys (makes known).
- I can identify information or ideas in a text.

**Common Core Writing Learning Targets:**

- I can define textual evidence ("word for word" support).
- I can compose written responses and include textual evidence to strengthen my analysis, reflection, and/or research.

## Grade 10 Biology Scope & Sequence

<u>Sixth Unit</u>	Textbook & Materials	Supplements	Assessment Options
Mendelian Genetics	Prentice Hall Biology Chapter 11 pgs 260-274	<ul style="list-style-type: none"> <li>• Multiple alleles lab</li> <li>• “Blame it on your family” activity</li> <li>• Create-a-Kid</li> <li>• “Growing Body Parts” video</li> <li>• Reebops</li> <li>• “Clone” Video</li> <li>• “Blue People of Troublesome Creek” Reading</li> <li>• “Am I A Carrier and What Does That Mean” Reading</li> <li>• Karyotype activity Build-a-GMO</li> <li>• “Chances Choices”</li> </ul>	<p><b><u>Formative:</u></b></p> <ul style="list-style-type: none"> <li>• Karyotyping and Genetic Disorders</li> <li>• Build-a-GMO</li> </ul> <p><b><u>Summative:</u></b></p> <ul style="list-style-type: none"> <li>• Unit Test</li> </ul>
<b>Days/Weeks</b>			
Minimum: 10 days			
Maximum: 12 days		(See division chair for supplements)	(See division chair)

### **Oregon Science Standards:**

#### **H.1 Structure and Function**

**H.1L.3-**Explain and apply laws of heredity and their relationship to the structure and function of DNA.

**H.2L.3-**Describe how asexual and sexual reproduction affect genetic diversity.

### **Common Core Standards for Literacy in Science - Reading:**

**RST.9-10.1-**Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions

**RST.9-10.2-** Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

**RST.9-10.5-**Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).

**RST.9-10.7-** Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

**RST.9-10.8-** Assess the extent to which the reasoning and evidence in a text support the author’s claim or a recommendations for solving a scientific or technical problem.

**RST.9-10.9-** Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

**RST.9-10.10-** By the end of grade 10 read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.

## Common Core Standards for Literacy in Science – Writing:

WHST.9-10.1- Write arguments focused on discipline-specific content.

WHST.9-10.2- Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

WHST 9-10.9- Draw evidence from informational texts to support analysis, reflection, and research.

### Critical Content Vocabulary:

Gregor Mendel	Trait
Carrier	Punnett Square
Genetic expression	Homozygous
Generation	Heterozygous
Karyotype	Phenotype
Mutation	Genotype
Polygenic	Pedigree
Sex-Linked	Incomplete dominance
Autosomal	Complete dominance
Dominant	Codominance
Recessive	Reproductive cloning
Allele	Therapeutic cloning
Gene	Stem cells
Variation	Clone
	GMO

**Common Core Reading Vocabulary:** textual evidence, explicit, precise details, central idea, conclusion, depiction, process, phenomenon, concept, summary, quantitative information, equation, formats, compare contrast, contradict reading strategy, comprehension

**Common Core Writing Vocabulary:** debate, argument, claim, counterclaim, evidence, credible sources, transitions, organizational structure, formatting structure, domain-specific vocabulary, transition, cohesion, textual evidence, analysis, reflection, research

### Critical Content Learning Targets:

- I can explain and apply the laws of heredity.
- I can explain the relationship between DNA and heredity.
- I can define and explain the difference between gene, allele and trait.
- I can compare and contrast dominant and recessive.
- I can compare and contrast and homozygous and heterozygous.
- I can compare and contrast genotype and phenotype.
- I can identify and give examples of various forms of dominance.
- I can use a Punnett Square to predict the outcomes of genetic crosses.
- I can use a pedigree to determine heredity.
- I can compare and contrast reproductive and therapeutic cloning.

### Common Core Reading Learning Targets:

- I can define textual evidence (“word for word” support).
- I can read closely and find explicit (right there) information in science and technical texts.
- I can analyze an author’s words and cite explicit textual evidence and precise details of explanations or descriptions to support analysis of science and technical texts.
- I can trace (follow) a text’s explanations or depiction of a complex process, phenomenon, or concept.
- I can compose an accurate summary starting the key information, central idea, or conclusions of the text.
- I can identify key terms and concepts in a text.
- I can analyze the structure of the relationships among key terms and concepts in a text.
- I can translate quantitative or technical information expressed in words into visual form.
- I can use all informational formats available to develop a deeper

understanding of the content or concepts presents.

- I can determine the credibility of the author and his/her purpose.
- I can identify claims or recommendations that are supported by fact(s) and those that are opinion(s).
- I can compare (analyze the similarities) information gained from my own experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
- I can contrast (analyze the similarities) information gained from my own experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
- I can recognize when a text I am reading is too easy or too difficult for me.
- I can choose reading strategies (e.g., ask questions, make connections, take notes, make inferences, visualize, re-read) that will help me comprehend difficult texts.

### **Common Core Writing Learning Targets:**

- I can identify a discipline-specific topic that causes or has caused a debate in society.
- I can determine the credibility of a source and the accuracy of the details presented in the source.
- I can select a historical event, scientific procedure/experiment, or technical process and identify and gather relevant and appropriate information (e.g., well-chosen facts, definitions, details, quotations, examples) to share with my audience.
- I can define textual evidence (“word for word” support).
- I can determine textual evidence that supports my analysis, reflection, and/or research.
- I can compose written responses and include textual evidence to strengthen my analysis, reflection and/or research.



## Grade 10 Biology Scope & Sequence

<u>Seventh Unit</u>	Textbook & Materials	Supplements	Assessment Options
Evolution	Prentice Hall Biology Chapter 5 pgs 366-467	<ul style="list-style-type: none"> <li>• “Evolution Series” Videos from PBS</li> <li>• “Voyage to the Galapagos” video</li> <li>• “Journey of Man” video</li> <li>• Comparing fossil evidence activity</li> <li>• Clipbird activity</li> <li>• Evidence of Evolution activity</li> <li>• Anolis Lizards</li> <li>• Rat Island</li> </ul>	<p><b><u>Formative:</u></b></p> <ul style="list-style-type: none"> <li>• Anolis Lizard</li> <li>• Rat Island</li> </ul> <p><b><u>Formative:</u></b></p> <ul style="list-style-type: none"> <li>• Unit Test</li> </ul>
<b>Days/Weeks</b>			
Minimum: 18 days			
Maximum: 22 days		(See division chair for supplements)	(See division chair)

### **Oregon Science Standards:**

#### **H.2 Interaction and Change**

**H.2L.4**-Explain how biological evolution is the consequence of the interactions of genetic variation, reproduction and inheritance, natural selection, and time.

**H.2L.5**-Explain how multiple lines of scientific evidence support biological evolution.

#### **Common Core Reading Learning Targets:**

**RST.9-10.1**-Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

**RST.9-10.2**-Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

**RST.9-10.5**-Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).

**RST.9-10.7**-Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

**RST.9-10.8**-Assess the extent to which the reasoning and evidence in a text support the author’s claim or a recommendation for solving a scientific or technical problem.

**RST.9-10.9**-Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

**RST.9-10.10**-By the end of grade 10 read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.

**Common Core Writing Learning Targets:****WHST.9-10.1**-Write arguments focused on discipline-specific content.**WHST.9-10.2**-Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.**WHST 9-10.9**-Draw evidence from informational texts to support analysis, reflection, and research.**Critical Content Vocabulary:**

Selection	Biogeography	Diversity
Interbreeding	Natural selection	Phylogeny
Fossil	Variation	Speciation
Selection pressure	Homologous	
Co-evolution	Analagous	
Convergent evolution	Vestigial	
Divergent evolution	Mitochondrial DNA	
Charles Darwin	Embryology	
Adaptation	Isolation barriers	
Acclimation	Artificial selection	
Sexual selection	Habitat selection	
Absolute dating	relative dating	

**Common Core Reading Vocabulary:** textual evidence, explicit, precise details, central idea, conclusion, depiction, process, phenomenon, concept, summary, quantitative information, equation, formats, compare contrast, contradict reading strategy and comprehension

**Common Core Writing Vocabulary:** debate, argument, claim, counterclaim, evidence, credible sources, transitions, organizational structure, formatting structure, domain-specific vocabulary, transition, cohesion, textual evidence, analysis, reflection and research

**Critical Content Learning Targets:**

- I can compare and contrast artificial and natural selection.
- I can use the four principles of natural selection to define evolution.
- I can explain how multiple lines of scientific evidence support biological evolution.
- I can explain why individuals do not evolve, but populations do.
- I can compare and contrast co-evolution, convergent evolution and divergent evolution.
- I can identify and distinguish the different forms of isolation barriers.

**Common Core Reading Learning Targets:**

- I can define textual evidence (“word for word” support).
- I can read closely and find explicit (right there) information in science and technical texts.
- I can analyze an author’s words and cite explicit textual evidence and precise details of explanations or descriptions to support analysis of science and technical texts.
- I can trace (follow) a text’s explanations or depiction of a complex process, phenomenon, or concept.
- I can compose an accurate summary starting the key information, central idea, or conclusions of the text.
- I can identify key terms and concepts in a text.
- I can analyze the structure of the relationships among key terms and concepts in a text.
- I can translate quantitative or technical information expressed in words into visual form.
- I can use all informational formats available to develop a deeper understanding of the content or concepts presents.

- I can determine the credibility of the author and his/her purpose.
- I can identify claims or recommendations that are supported by fact(s) and those that are opinion(s).
- I can compare (analyze the similarities) information gained from my own experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
- I can contrast (analyze the similarities) information gained from my own experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
- I can recognize when a text I am reading is too easy or too difficult for me.
- I can choose reading strategies (e.g., ask questions, make connections, take notes, make inferences, visualize, re-read) that will help me comprehend difficult texts.

**Common Core Writing Learning Targets:**

- I can identify a discipline-specific topic that causes or has caused a debate in society.
- I can determine the credibility of a source and the accuracy of the details presented in the source.
- I can select a historical event, scientific procedure/experiment, or technical process and identify and gather relevant and appropriate information (e.g., well-chosen facts, definitions, details, quotations, examples) to share with my audience.
- I can define textual evidence (“word for word” support).
- I can determine textual evidence that supports my analysis, reflection, and/or research.
- I can compose written responses and include textual evidence to strengthen my analysis, reflection and/or research.