

# Green Township School District Grade 7 Science Curriculum - Revised 2017

Pacing: 4 weeks		Unit 1: Classifying and Exploring Life
Standards and Suggested Activities		Skills and Knowledge
<p>MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.</p> <p>MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.</p> <p>MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.</p> <p>MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.</p> <p>MS-LS4-3. Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy</p>	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● Intro to Microscope lab</li> <li>● Pond water lab</li> <li>● “Living Candle” demo</li> <li>● Lab safety demo and activity</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● identify the steps of the scientific method.</li> <li>● use the scientific method to design an investigation for possible solutions to a problem.</li> <li>● properly use a compound microscope.</li> <li>● distinguish between a scientific theory and a law.</li> <li>● identify and describe the characteristics of living things.</li> <li>● compare and contrast the theories of Spontaneous Generation and Biogenesis.</li> <li>● describe how living things are classified and use classification models.</li> <li>● explain the purpose and use of binomial nomenclature.</li> </ul>

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District/School Formative Assessment Plan	District/School Summative Assessment Plan
<ul style="list-style-type: none"> <li>Class discussions in which student share prior knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-created quizzes</li> <li>Teacher-created unit assessments</li> <li>Labs</li> </ul>
Core Instructional Materials	District/School Supplementary Resources
<ul style="list-style-type: none"> <li><i>Glencoe iScience Life Science Series</i> (Mcgraw-Hill Companies, Inc. 2012)</li> </ul>	<ul style="list-style-type: none"> <li>Discovery Education videos</li> <li>Glencoe ConnectEd online resources</li> </ul>

Interdisciplinary Connections throughout the K-12 Curriculum
<p><b><u>Mathematics</u></b></p> <p><b>6.EE.C.9</b> Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (MS-LS1-1),(MS-LS1-2),(MS-LS1-3),(MS-LS1-6)</p> <p><b>6.SP.A.2</b> Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. (MS-LS1-4)</p> <p><b>6.EE.B.6</b> Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-LS4-1),(MS-LS4-2)</p> <p><b><u>English-Language Arts:</u></b></p> <p><b>RI.7.4.</b> Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.</p> <p><b>RI.7.8.</b> Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.</p> <p><b>W.7.2.</b> Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>A. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia).</p> <p>B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</p> <p>C. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>D. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>E. Establish and maintain a formal style academic style, approach, and form.</p> <p>F. Provide a concluding statement or section that follows from and supports the information or explanation presented.</p> <p><b>SL.7.1.</b> Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p> <p>A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or</p>

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*issue to probe and reflect on ideas under discussion.*

*B. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.*

*C. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.*

*D. Acknowledge new information expressed by others and, when warranted, modify their own views.*

**SL.7.2.** *Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.*

**SL.7.3.** *Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.*

**SL.7.4.** *Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.*

**SL.7.5.** *Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.*

**SL.7.6.** *Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.*

### Integration of 21st Century Themes and Skills

#### 21st Century Skills/ Career Ready Practices:

- CRP1. Act as a responsible and contributing citizen and employee.**
- CRP2. Apply appropriate academic and technical skills.**
- CRP3. Attend to personal health and financial well-being.**
- CRP4. Communicate clearly and effectively and with reason.**
- CRP5. Consider the environmental, social and economic impacts of decisions.**
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- CRP10. Plan education and career paths aligned to personal goals.**
- CRP11. Use technology to enhance productivity.**
- CRP12. Work productively in teams while using cultural global competence.**

### 2014 Technology Standards

#### 2014 NJ Technology Standards:

##### **8.1 Educational Technology** ([Word](#) | [PDF](#))

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.

##### **8.2 Technology Education, Engineering, Design and Computational Thinking - Programming**

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All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Please see relevant projects for technology standards [8.1](#) and [8.2](#):

**Differentiation / Accommodations / Modifications**

**Gifted and Talented:**

**Extension Activities** (*content, process, product and learning environment*)

- Conduct research and provide presentation of various topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest / cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Exploration of art and/or artists to understand society and history.
- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

**Anchor Activities**

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

**English Language Learners:**

**Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

**Modifications for Homework/Assignments**

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

**Students with Disabilities:**

*Appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.*

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- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

**Modifications for Homework and Assignments**

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

**Modifications for Assessments**

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
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- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

**Students at Risk of School Failure:**

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Pacing: 4 weeks		<b>Unit 2: Cells: Structure and Function</b>
<b>Standards and Suggested Activities</b>		<b>Skills and Knowledge</b>
<p>MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p> <p>MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p> <p>MS-LS1-7. Develop a model to describe how food is rearranged</p>	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● Cheek cell and plant cell lab</li> <li>● Cell model activity</li> <li>● Diffusion activity</li> <li>● active vs. passive transport activity</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● explain the tenets of cell theory</li> <li>● identify and describe the function of the macromolecules that make up cells.</li> <li>● distinguish between eukaryotic and prokaryotic cells.</li> <li>● explain differences between bacteria, plant, and animal cells.</li> <li>● diagram and describe the parts of a typical cell</li> <li>● describe the function of each type of organelle within a eukaryotic cell.</li> <li>● explain how material is processed, transported, and stored within a cell.</li> <li>● describe how a cell stores and releases energy to carry out cell functions.</li> <li>● detail the methods by which material moves across a cell membrane.</li> <li>● describe the reverse energy processes of cellular respiration and photosynthesis.</li> </ul>

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through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism			
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Pacing: 3 weeks		<b>Unit 3: From a Cell to an Organism</b>
Standards and Suggested Activities		Skills and Knowledge
<p>MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p> <p>MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells</p>	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● steps of mitosis activity</li> <li>● mitosis group activity</li> <li>● nervous system -stimulus/ response memory storage</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● describe the cycle of growth, development, and division of a cell.</li> <li>● identify and describe the steps of the mitotic phase of the cell cycle.</li> <li>● explain the importance of cell division to an organism's survival.</li> <li>● identify the purpose of stem cells in the process of cell differentiation.</li> <li>● describe current stem cell research and use in medicine.</li> <li>● detail the organization of an organism from individual cells through body systems.</li> <li>● identify how the nervous system uses the five senses to enable stimulus and</li> </ul>

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<p>contribute to the function.</p> <p>MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells</p> <p>MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.</p>	<p>lab</p>	<p>response and generate memories.</p>
<b>District/School Formative Assessment Plan</b>		<b>District/School Summative Assessment Plan</b>
<ul style="list-style-type: none"> <li>● Class discussions in which student share prior knowledge</li> </ul>		<ul style="list-style-type: none"> <li>● Teacher-created quizzes</li> <li>● Teacher-created unit assessments</li> <li>● Labs</li> </ul>
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- C. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.*
- D. Use precise language and domain-specific vocabulary to inform about or explain the topic.*
- E. Establish and maintain a formal style academic style, approach, and form.*
- F. Provide a concluding statement or section that follows from and supports the information or explanation presented.*
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### Integration of 21st Century Themes and Skills

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- CRP1.** Act as a responsible and contributing citizen and employee.
- CRP2.** Apply appropriate academic and technical skills.
- CRP3.** Attend to personal health and financial well-being.
- CRP4.** Communicate clearly and effectively and with reason.
- CRP5.** Consider the environmental, social and economic impacts of decisions.
- CRP6.** Demonstrate creativity and innovation.
- CRP7.** Employ valid and reliable research strategies.
- CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP9.** Model integrity, ethical leadership and effective management.
- CRP10.** Plan education and career paths aligned to personal goals.
- CRP11.** Use technology to enhance productivity.
- CRP12.** Work productively in teams while using cultural global competence.

### 2014 Technology Standards

#### 2014 NJ Technology Standards:

- 8.1 Educational Technology** ([Word](#) | [PDF](#))  
All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
- 8.2 Technology Education, Engineering, Design and Computational Thinking - Programming**  
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All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Please see relevant projects for technology standards [8.1](#) and [8.2](#):

## Differentiation / Accommodations / Modifications

### Gifted and Talented:

#### **Extension Activities** (*content, process, product and learning environment*)

- Conduct research and provide presentation of various topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest / cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Exploration of art and/or artists to understand society and history.
- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

#### **Anchor Activities**

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

### English Language Learners:

#### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

#### **Modifications for Homework/Assignments**

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

### **Students with Disabilities:**

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- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

#### **Modifications for Homework and Assignments**

- Extended time to complete assignments.
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#### **Modifications for Assessments**

- Extended time on classroom tests and quizzes.
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### **Students at Risk of School Failure:**

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## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

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<b>Pacing: 4 weeks</b>		<b>Unit 4: Reproduction of Organisms and Genetics</b>
<b>Standards and Suggested Activities</b>		<b>Skills and Knowledge</b>
MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● Mendel Pea-pod lab</li> <li>● Meiosis group activity</li> </ul>	Students will be able to: <ul style="list-style-type: none"> <li>● distinguish between sexual and asexual reproduction.</li> <li>● describe how haploid sex cells are formed.</li> <li>● identify and describe the steps of meiosis in the formation of sex cells.</li> </ul>



## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

<p>neutral effects to the structure and function of the organism.</p> <p>MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p> <p>MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment</p> <p>MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.</p> <p>MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.</p> <p>MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>	<ul style="list-style-type: none"> <li>● Critter lab</li> </ul>	<ul style="list-style-type: none"> <li>● explain the significance of sexual reproduction in the survival of a species.</li> <li>● describe the significance of Gregor Mendel's research regarding heredity and genetics.</li> <li>● explain how two or more alleles combine to determine the appearance of traits.</li> <li>● describe how environmental factors can affect the inheritance of traits.</li> <li>● use a Punnett Square to make predictions about simple inheritance of traits.</li> <li>● distinguish between chromosomes, genes, and alleles.</li> <li>● describe how DNA replicates.</li> <li>● detail how genes can mutate and their effect on organisms.</li> <li>● describe developments in the field of genetic engineering</li> </ul>	
<b>District/School Formative Assessment Plan</b>		<b>District/School Summative Assessment Plan</b>	
<ul style="list-style-type: none"> <li>● Class discussions in which student share prior knowledge</li> </ul>		<ul style="list-style-type: none"> <li>● Teacher-created quizzes</li> <li>● Teacher-created unit assessments</li> <li>● Labs</li> </ul>	
<b>Core Instructional Materials</b>		<b>District/School Supplementary Resources</b>	
<ul style="list-style-type: none"> <li>● <i>Glencoe iScience Life Science Series</i></li> </ul>		<ul style="list-style-type: none"> <li>● Discovery Education videos</li> </ul>	

(Mcgraw-Hill Companies, Inc. 2012)

- Glencoe ConnectEd online resources

## Interdisciplinary Connections throughout the K-12 Curriculum

### **Mathematics –**

**MP.4** Model with mathematics. (MS-LS3-2) (MS-LS4-6)

**6.SP.B.5** Summarize numerical data sets in relation to their context. (MS-LS3-2) (MS-LS4-4),(MS-LS4-6)(MS-LS1-5)

**6.RP.A.1** Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-LS4-4),(MS-LS4-6)

**7.RP.A.2** Recognize and represent proportional relationships between quantities. (MS-LS4-4),(MS-LS4-6)

**6.SP.A.2** Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. (MS-LS1-5)

### **English-Language Arts:**

**RI.7.4.** Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.

**RI.7.8.** Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.

**W.7.2.** Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

A. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia).

B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.

C. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.

D. Use precise language and domain-specific vocabulary to inform about or explain the topic.

E. Establish and maintain a formal style academic style, approach, and form.

F. Provide a concluding statement or section that follows from and supports the information or explanation presented.

**SL.7.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

B. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.

C. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.

D. Acknowledge new information expressed by others and, when warranted, modify their own views.

**SL.7.2.** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

**SL.7.3.** Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.

**SL.7.4.** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

**SL.7.5.** Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.

**SL.7.6.** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

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**Integration of 21st Century Themes and Skills**

<u>21st Century Skills/ Career Ready Practices:</u>	<p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP3. Attend to personal health and financial well-being.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9. Model integrity, ethical leadership and effective management.</p> <p>CRP10. Plan education and career paths aligned to personal goals.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p>
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**2014 Technology Standards**

<u>2014 NJ Technology Standards:</u>	<p><b>8.1 Educational Technology</b> (<a href="#">Word</a>   <a href="#">PDF</a>)                  All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.</p> <p><b>8.2 Technology Education, Engineering, Design and Computational Thinking - Programming</b>                  (<a href="#">Word</a>   <a href="#">PDF</a>)                  All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.</p> <p>Please see relevant projects for technology standards <a href="#">8.1</a> and <a href="#">8.2</a>:</p>
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**Differentiation / Accommodations / Modifications**

<p><b><u>Gifted and Talented:</u></b></p> <p><b>Extension Activities</b> (<i>content, process, product and learning environment</i>)</p> <ul style="list-style-type: none"> <li>● Conduct research and provide presentation of various topics.</li> <li>● Design surveys to generate and analyze data to be used in discussion.</li> <li>● Debate topics of interest / cultural importance.</li> </ul>
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## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
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### **Anchor Activities**

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

### **English Language Learners:**

#### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
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## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

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<b>Pacing: 5 weeks</b>		<b>Unit 5: Animal Diversity</b>
<b>Standards and Suggested Activities</b>		<b>Skills and Knowledge</b>
<p>MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p> <p>MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.</p> <p>MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil</p>	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● protist lab</li> <li>● cladogram activity</li> <li>● Hydra lab</li> <li>● planaria lab</li> <li>● earthworm dissection</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● describe how organisms are classified based on Linnaean taxonomy.</li> <li>● use a cladogram to describe evolutionary relationships among organisms.</li> <li>● identify various methods of asexual reproduction.</li> <li>● name and describe the characteristics of animal-like protists.</li> <li>● explain the characteristics of Kingdom Animalia.</li> <li>● identify and describe differences among the various animal phyla.</li> <li>● describe the different classes of chordates.</li> </ul>

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

organisms to infer evolutionary relationships			
<b>District/School Formative Assessment Plan</b>		<b>District/School Summative Assessment Plan</b>	
<ul style="list-style-type: none"> <li>Class discussions in which student share prior knowledge</li> </ul>		<ul style="list-style-type: none"> <li>Teacher-created quizzes</li> <li>Teacher-created unit assessments</li> <li>Labs</li> </ul>	
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Interdisciplinary Connections throughout the K-12 Curriculum
<p><b><u>Mathematics –</u></b></p> <p><b>6.EE.C.9</b> Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (MS-LS1-1)</p> <p><b>6.SP.A.2</b> Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. (MS-LS1-4)</p> <p><b>6.SP.B.4</b> Summarize numerical data sets in relation to their context. (MS-LS1-4)</p> <p><b>6.EE.B.6</b> Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-LS4-2)</p> <p><b><u>English-Language Arts:</u></b></p> <p><b>RI.7.4.</b> Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.</p> <p><b>RI.7.8.</b> Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.</p> <p><b>W.7.2.</b> Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>A. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia).</p> <p>B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</p> <p>C. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>D. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>E. Establish and maintain a formal style academic style, approach, and form.</p> <p>F. Provide a concluding statement or section that follows from and supports the information or explanation presented.</p> <p><b>SL.7.1.</b> Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p> <p>A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</p>

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

- B. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.*
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- D. Acknowledge new information expressed by others and, when warranted, modify their own views.*
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## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

### Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

### Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.
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Pacing: 5 weeks		<b>Unit 6: Animal Structure and Function</b>	
Standards and Suggested Activities		Skills and Knowledge	
<p>MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.</p> <p>MS-LS4-3. Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy</p>	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● Squid virtual dissection lab</li> <li>● Fish dissection lab</li> <li>● Frog dissection lab</li> <li>● reproduction chart activity</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● describe the various methods of support, control, and movement used by animals.</li> <li>● distinguish between open and closed circulatory systems.</li> <li>● identify and describe the function of the three types of hearts.</li> <li>● identify and describe the various methods used by different classes of animals for gas exchange.</li> <li>● differentiate between digestion and absorption of nutrients.</li> <li>● identify and describe the purpose of structures for digestion of various classes of animals.</li> <li>● explain the various processes for waste removal from an organism.</li> <li>● describe the interdependence of the circulatory and respiratory systems.</li> <li>● describe the structure and function of the amniotic egg</li> <li>● trace the ramifications of the increasing embryological complexity across classes of vertebrates.</li> </ul>	
District/School Formative Assessment Plan		District/School Summative Assessment Plan	
<ul style="list-style-type: none"> <li>● Class discussions in which student share prior knowledge</li> </ul>		<ul style="list-style-type: none"> <li>● Teacher-created quizzes</li> </ul>	

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

	<ul style="list-style-type: none"> <li>• Teacher-created unit assessments</li> <li>• Labs</li> </ul>
<b>Core Instructional Materials</b>	<b>District/School Supplementary Resources</b>
<ul style="list-style-type: none"> <li>• <i>Glencoe iScience Life Science Series</i> (Mcgraw-Hill Companies, Inc. 2012)</li> </ul>	<ul style="list-style-type: none"> <li>• Discovery Education videos</li> <li>• Glencoe ConnectEd online resources</li> </ul>

<b>Interdisciplinary Connections throughout the K-12 Curriculum</b>
<p><b><u>English-Language Arts:</u></b></p> <p><b>RI.7.4.</b> Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.</p> <p><b>RI.7.8.</b> Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.</p> <p><b>W.7.2.</b> Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p><i>A. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia).</i></p> <p><i>B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</i></p> <p><i>C. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</i></p> <p><i>D. Use precise language and domain-specific vocabulary to inform about or explain the topic.</i></p> <p><i>E. Establish and maintain a formal style academic style, approach, and form.</i></p> <p><i>F. Provide a concluding statement or section that follows from and supports the information or explanation presented.</i></p> <p><b>SL.7.1.</b> Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p> <p><i>A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</i></p> <p><i>B. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.</i></p> <p><i>C. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.</i></p> <p><i>D. Acknowledge new information expressed by others and, when warranted, modify their own views.</i></p> <p><b>SL.7.2.</b> Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.</p> <p><b>SL.7.3.</b> Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.</p> <p><b>SL.7.4.</b> Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.</p> <p><b>SL.7.5.</b> Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.</p> <p><b>SL.7.6.</b> Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.</p>
<b>Integration of 21st Century Themes and Skills</b>

# Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

<u>21st Century Skills/ Career Ready Practices:</u>	<p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP3. Attend to personal health and financial well-being.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9. Model integrity, ethical leadership and effective management.</p> <p>CRP10. Plan education and career paths aligned to personal goals.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p>
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## 2014 Technology Standards

<u>2014 NJ Technology Standards:</u>	<p><b>8.1 Educational Technology</b> (<a href="#">Word</a>   <a href="#">PDF</a>) All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.</p> <p><b>8.2 Technology Education, Engineering, Design and Computational Thinking - Programming</b> (<a href="#">Word</a>   <a href="#">PDF</a>) All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.</p> <p>Please see relevant projects for technology standards <a href="#">8.1</a> and <a href="#">8.2</a>:</p>
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## Differentiation / Accommodations / Modifications

<p><b><u>Gifted and Talented:</u></b></p> <p><b>Extension Activities</b> (<i>content, process, product and learning environment</i>)</p> <ul style="list-style-type: none"> <li>● Conduct research and provide presentation of various topics.</li> <li>● Design surveys to generate and analyze data to be used in discussion.</li> <li>● Debate topics of interest / cultural importance.</li> <li>● Authentic listening and reading sources that provide data and support for speaking and writing prompts.</li> <li>● Exploration of art and/or artists to understand society and history.</li> <li>● Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).</li> </ul> <p><b>Anchor Activities</b></p>
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- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

### **English Language Learners:**

#### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

#### **Modifications for Homework/Assignments**

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

### **Students with Disabilities:**

*Appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.*

#### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments

- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

### **Modifications for Homework and Assignments**

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

### **Modifications for Assessments**

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

## **Students at Risk of School Failure:**

### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
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### **Modifications for Homework and Assignments**

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- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

<p><b>Modifications for Assessments</b></p> <ul style="list-style-type: none"> <li>● Extended time on classroom tests and quizzes.</li> <li>● Student may take/complete tests in an alternate setting as needed.</li> <li>● Restate, reread, and clarify directions/questions</li> <li>● Distribute study guide for classroom tests.</li> <li>● Establish procedures for accommodations / modifications for assessments.</li> </ul>
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<b>Pacing: 3 weeks</b>		<b>Unit 7: Bacteria and Viruses</b>
<b>Standards and Suggested Activities</b>		<b>Skills and Knowledge</b>
<p>MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p> <p>MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p> <p>MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p> <p>MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p> <p>MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.</p>	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● Bacteria culture lab</li> <li>● Controlling bacteria lab</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● identify the characteristics of bacteria explain how it is classified</li> <li>● explain positive and negative environmental impacts of bacteria</li> <li>● describe beneficial applications of bacteria in industry</li> <li>● describe the development and use of antibiotics</li> <li>● identify the characteristics and structure of viruses.</li> <li>● explain how viruses replicate.</li> <li>● describe how an organism's immune system forms antibodies to protect that organism from future harm from the virus.</li> <li>● name medical advances in the treatment of viruses.</li> </ul>
<b>District/School Formative Assessment Plan</b>		<b>District/School Summative Assessment Plan</b>
<ul style="list-style-type: none"> <li>● Class discussions in which student share prior knowledge</li> </ul>		<ul style="list-style-type: none"> <li>● Teacher-created quizzes</li> <li>● Teacher-created unit assessments</li> <li>● Labs</li> </ul>
<b>Core Instructional Materials</b>		<b>District/School Supplementary Resources</b>



## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

- *Glencoe iScience Life Science Series*  
(Mcgraw-Hill Companies, Inc. 2012)

- Discovery Education videos
- Glencoe ConnectEd online resources

### Interdisciplinary Connections throughout the K-12 Curriculum

#### Mathematics

*MP.4 Model with mathematics. (MS-LS3-2)*

*6.SP.B.5 Summarize numerical data sets in relation to their context. (MS-LS3-2) (MS-LS4-4)*

*6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (MS-LS1-1),(MS-LS1-2)*

*6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. (MS-LS1-5)*

*6.SP.B.4 Summarize numerical data sets in relation to their context. (MS-LS1-5)*

*7.RP.A.2 Recognize and represent proportional relationships between quantities. (MS-LS4-4)*

#### English-Language Arts:

*RI.7.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.*

*RI.7.8. Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.*

*W.7.2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.*

*A. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia).*

*B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.*

*C. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.*

*D. Use precise language and domain-specific vocabulary to inform about or explain the topic.*

*E. Establish and maintain a formal style academic style, approach, and form.*

*F. Provide a concluding statement or section that follows from and supports the information or explanation presented.*

*SL.7.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.*

*A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.*

*B. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.*

*C. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.*

*D. Acknowledge new information expressed by others and, when warranted, modify their own views.*

*SL.7.2. Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.*

*SL.7.3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.*

*SL.7.4. Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.*

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

*SL.7.5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.*

*SL.7.6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.*

### Integration of 21st Century Themes and Skills

#### 21st Century Skills/ Career Ready Practices:

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP3. Attend to personal health and financial well-being.
- CRP4. Communicate clearly and effectively and with reason.
- CRP5. Consider the environmental, social and economic impacts of decisions.
- CRP6. Demonstrate creativity and innovation.
- CRP7. Employ valid and reliable research strategies.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP9. Model integrity, ethical leadership and effective management.
- CRP10. Plan education and career paths aligned to personal goals.
- CRP11. Use technology to enhance productivity.
- CRP12. Work productively in teams while using cultural global competence.

### 2014 Technology Standards

#### 2014 NJ Technology Standards:

##### **8.1 Educational Technology** ([Word](#) | [PDF](#))

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.

##### **8.2 Technology Education, Engineering, Design and Computational Thinking - Programming**

([Word](#) | [PDF](#))

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Please see relevant projects for technology standards [8.1](#) and [8.2](#):

### Differentiation / Accommodations / Modifications

#### Gifted and Talented:

**Extension Activities** (*content, process, product and learning environment*)

- Conduct research and provide presentation of various topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest / cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Exploration of art and/or artists to understand society and history.
- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

### **Anchor Activities**

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

### **English Language Learners:**

#### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

#### **Modifications for Homework/Assignments**

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

### **Students with Disabilities:**

*Appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.*

#### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice

- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

### **Modifications for Homework and Assignments**

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

### **Modifications for Assessments**

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

## **Students at Risk of School Failure:**

### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Provide copy of classnotes
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- Student may request to use a computer to complete assignments.
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- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

### Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
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### Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Pacing: 2 weeks		<b>Unit 8: Protists and Fungi</b>	
<b>Standards and Suggested Activities</b>		<b>Skills and Knowledge</b>	
<p>MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p> <p>MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p> <p>MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.</p> <p>MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p> <p>MS-LS1-6. Construct a scientific explanation based on</p>	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● protist lab</li> <li>● Fungi and lichen lab</li> <li>● Environmental pest control project</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● identify the characteristics and types of protists and explain how they are classified.</li> <li>● detail the positive and negative environmental impacts of various types of protists.</li> <li>● describe the effect of protists on human life.</li> <li>● identify the characteristics and types of fungi and explain how they are classified.</li> <li>● explain the impact fungi have on the environment.</li> <li>● discuss Alexander Fleming’s discovery of penicillin and its importance as an antibiotic. .</li> <li>● describe the importance of fungi to health and medicine.</li> <li>● demonstrate an understanding of the symbiotic relationship in lichen and its environmental importance.</li> <li>● conduct an investigation to mitigate the negative impact of a pest to humans..</li> </ul>	

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

<p>evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p> <p>MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</p> <p>MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations</p> <p>MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p> <p>MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p> <p>MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p> <p>MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.</p> <p>MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.</p>		
<b>District/School Formative Assessment Plan</b>	<b>District/School Summative Assessment Plan</b>	
<ul style="list-style-type: none"> <li>● Class discussions in which student share prior knowledge</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher-created quizzes</li> <li>● Teacher-created unit assessments</li> <li>● Labs</li> </ul>	
<b>Core Instructional Materials</b>	<b>District/School Supplementary Resources</b>	

# Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

- *Glencoe iScience Life Science Series*  
(Mcgraw-Hill Companies, Inc. 2012)

- Discovery Education videos
- Glencoe ConnectEd online resources

## Interdisciplinary Connections throughout the K-12 Curriculum

### Mathematics

**MP.2** Reason abstractly and quantitatively. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4)

**MP.4** Model with mathematics. (MS-LS3-2)

**6.EE.C.9** Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (MS-LS1-1),(MS-LS1-2),(MS-LS1-6)

**6.SP.A.2** Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. (MS-LS1-4),(MS-LS1-5)

**6.SP.B.4** Summarize numerical data sets in relation to their context. (MS-LS1-4),(MS-LS1-5)(MS-LS3-2)

**7.EE.3** Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3)

**7.SP** Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. (MS-ETS1-4)

### English-Language Arts:

**RI.7.4.** Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.

**RI.7.8.** Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.

**W.7.2.** Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

A. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia).

B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.

C. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.

D. Use precise language and domain-specific vocabulary to inform about or explain the topic.

E. Establish and maintain a formal style academic style, approach, and form.

F. Provide a concluding statement or section that follows from and supports the information or explanation presented.

**SL.7.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

B. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.

C. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.

D. Acknowledge new information expressed by others and, when warranted, modify their own views.

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

- SL.7.2. Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.*
- SL.7.3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.*
- SL.7.4. Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.*
- SL.7.5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.*
- SL.7.6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.*

### Integration of 21st Century Themes and Skills

#### 21st Century Skills/ Career Ready Practices:

- CRP1. Act as a responsible and contributing citizen and employee.**
- CRP2. Apply appropriate academic and technical skills.**
- CRP3. Attend to personal health and financial well-being.**
- CRP4. Communicate clearly and effectively and with reason.**
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- CRP6. Demonstrate creativity and innovation.**
- CRP7. Employ valid and reliable research strategies.**
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- CRP11. Use technology to enhance productivity.**
- CRP12. Work productively in teams while using cultural global competence.**

### 2014 Technology Standards

#### 2014 NJ Technology Standards:

- 8.1 Educational Technology ([Word](#) | [PDF](#))**  
All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
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All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
- Please see relevant projects for technology standards [8.1](#) and [8.2](#):

### Differentiation / Accommodations / Modifications



### **Gifted and Talented:**

#### **Extension Activities** (*content, process, product and learning environment*)

- Conduct research and provide presentation of various topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest / cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Exploration of art and/or artists to understand society and history.
- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

#### **Anchor Activities**

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

### **English Language Learners:**

#### **Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

#### **Modifications for Homework/Assignments**

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

### **Students with Disabilities:**

*Appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.*

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- Student may request to use a computer to complete assignments.
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- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

**Modifications for Homework and Assignments**

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

**Modifications for Assessments**

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

**Students at Risk of School Failure:**

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## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

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Pacing: 3 weeks		Unit 9: Plant Diversity	
Standards and Suggested Activities		Skills and Knowledge	
<p>MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p> <p>MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p> <p>MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells</p> <p>MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.</p> <p>MS-LS1-6. Construct a scientific explanation based on evidence for</p>	<ul style="list-style-type: none"> <li>● Kinesthetic activities</li> <li>● Classroom demonstrations</li> <li>● plant classification lab</li> <li>● stomata lab</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● diagram and identify the parts of a plant cell.</li> <li>● describe how plants are classified according to their structure.</li> <li>● detail how various types of plants reproduce.</li> <li>● explain and diagram how photosynthesis occurs in a typical leaf of a plant.</li> <li>● compare and contrast the use of technology in genetically modified plants.</li> </ul>	

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

<p>the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p> <p>MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p> <p>MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.</p> <p>MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.</p>		
<b>District/School Formative Assessment Plan</b>		<b>District/School Summative Assessment Plan</b>
<ul style="list-style-type: none"> <li>● Class discussions in which student share prior knowledge</li> </ul>		<ul style="list-style-type: none"> <li>● Teacher-created quizzes</li> <li>● Teacher-created unit assessments</li> <li>● Labs</li> </ul>
<b>Core Instructional Materials</b>		<b>District/School Supplementary Resources</b>
<ul style="list-style-type: none"> <li>● <i>Glencoe iScience Life Science Series</i> (Mcgraw-Hill Companies, Inc. 2012)</li> </ul>		<ul style="list-style-type: none"> <li>● Discovery Education videos</li> <li>● Glencoe ConnectEd online resources</li> </ul>

<b>Interdisciplinary Connections throughout the K-12 Curriculum</b>
<p><b><u>Mathematics</u></b></p> <p><b>MP.4</b> Model with mathematics. (MS-LS3-2)</p> <p><b>6.SP.B.5</b> Summarize numerical data sets in relation to their context. (MS-LS3-2)</p> <p><b>6.EE.C.9</b> Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (MS-LS1-1),(MS-LS1-2),(MS-LS1-3),(MS-LS1-6)</p> <p><b>6.SP.A.2</b> Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. (MS-LS1-4)</p> <p><b>6.SP.B.4</b> Summarize numerical data sets in relation to their context. (MS-LS1-4)(MS-LS4-4)</p> <p><b>6.RP.A.1</b> Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-LS4-4)</p> <p><b>7.RP.A.2</b> Recognize and represent proportional relationships between quantities. (MS-LS4-4)</p>

## Green Township School District Grade 7 Science Curriculum - Revised 2017 (cont.)

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