Green Township School District

Grade 1 Science Curriculum Unit 5

Revised July 2017

Unit 5: Earth's Patterns		
Lesson 5.1	***NJ Student Learning Science Standards:*** ● **1-ESS1-1**. Use observations of the sun, moon, and stars to describe patterns that can be predicted. [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.]	**Concept(s)**: ● The relationship between Earth and the Sun and Moon **Students will be able to**: ● Model the rotation of Earth to explain day and night ● Represent and explain the daily apparent motion of the sun ● Create models to understand length and direction of shadows in daily patterns ● Identify the cyclical phases of the moon
Lesson 5.2	***NJ Student Learning Science Standards:*** ● **1-ESS1-1**. Use observations of the sun, moon, and stars to describe patterns that can be predicted. [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.] ● **1-ESS1-2**. Make observations at different times of year to relate the amount of daylight to the time of year. [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] [Assessment Boundary: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.]	**Concept(s)**: ● The seasons **Students will be able to**: ● Model how the Earth orbits the Sun ● Describe that the Earth is tilted on its axis ● Understand that Earth's orbit around the sun causes the change in seasons ● Describe some of the differences between the seasons

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Lesson 5.3	***NJ Student Learning Science Standards:*** ● **1-ESS1-1**. Use observations of the sun, moon, and stars to describe patterns that can be predicted. [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.]	**Concept(s)**: ● Star patterns **Students will be able to**: ● Explain why we cannot see stars during the day ● Explain why stars that form constellations seem to change with the seasons

Other Interdisciplinary Connections	
NGSS Appendix for Alignment	***English-Language Arts:*** **RI.1.1.** Ask and answer questions about key details in a text. **RI.1.3.** Describe the connection between two individuals, events, ideas, or pieces of information in a text. **RI.1.4.** Ask and answer questions to help determine or clarify the meaning of words and phrases in a text. **RI.1.5.** Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. **RI.1.6.** Distinguish between information provided by pictures or other illustrations and information provided by the words in a text. **RI.1.10.** With prompting and support, read informational texts at grade level text complexity or above. **RF.1.4.** Read with sufficient accuracy and fluency to support comprehension. A. Read grade-level text with purpose and understanding. B. Read grade-level text orally with accuracy, appropriate rate, and expression. C. Use context to confirm or self-correct word recognition and understanding, rereading as necessary. **W.1.8.** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. **SL.1.1.** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). B. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. C. Ask questions to clear up any confusion about the topics and texts under discussion. **SL.1.2**. Ask and answer questions about key details in a text read aloud or information presented orally or through other media. **SL.1.3**. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood. **SL.1.5.** Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

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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 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:
District/School Primary and Supplementary Resources	
Primary Resource: ***Knowing Science: Second Grade: What's the Matter?*** www.knowingscience.com 2016 Knowing Science, LLC	**BrainPOP** **Pebble Go**
Materials	
Materials for each session activity and lesson are listed in the Knowing Science Teacher's Manual.	

Green Township School District

Grade 1 Science Curriculum Unit 5

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School/ Formative Assessment Plan	School/District Summative Assessment Plan
● Teacher observation of students engaged in group and independent activities. ● Individual and small group conferences/interviews to assess understanding with rubric ● Self-assessment by students with guidance from teacher.	● Teacher created assessments and projects ● Teacher/District created benchmark assessments

Differentiation/Accommodations/Modifications

Gifted and Talented

(content, process, product and learning environment)

Extension Activities

- 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 that need to be mastered.
- Extended time to complete class work

- Visual dictionaries to help build vocabulary
- Provide copy of classnotes
- Pair with a peer for assistance during class

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.
- Extended time to complete class work
- Provide copy of classnotes
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Green Township School District

Grade 1 Science Curriculum Unit 4

Revised July 2017

Unit 4: Measurement		
Lesson 4.1	***NJ Student Learning Science Standards:*** ● **1-LS1-1**. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.* [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.] ● **K-2-ETS1-1**. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	**Concept(s)**: ● Biomimicry **Students will be able to**: ● Identify unique and specialized external structures that help plants and animals meet their basic needs for survival in their own particular habitat ● Understand the concept of biomimicry and give examples of nature-inspired human technology ● Use the engineering design process to create an original product, based on nature, to solve human problems

Other Interdisciplinary Connections	
NGSS Appendix for Alignment	***English-Language Arts:*** **RI.1.1.** Ask and answer questions about key details in a text. **RI.1.3.** Describe the connection between two individuals, events, ideas, or pieces of information in a text. **RI.1.4.** Ask and answer questions to help determine or clarify the meaning of words and phrases in a text. **RI.1.5.** Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. **RI.1.6.** Distinguish between information provided by pictures or other illustrations and information provided by the words in a text. **RI.1.10.** With prompting and support, read informational texts at grade level text complexity or above. **RF.1.4.** Read with sufficient accuracy and fluency to support comprehension. A. Read grade-level text with purpose and understanding. B. Read grade-level text orally with accuracy, appropriate rate, and expression. C. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

	W.1.8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. **SL.1.1.** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). B. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. C. Ask questions to clear up any confusion about the topics and texts under discussion. **SL.1.2**. Ask and answer questions about key details in a text read aloud or information presented orally or through other media. **SL.1.3**. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood. **SL.1.5.** Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
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 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:
District/School Primary and Supplementary Resources	

Green Township School District

Grade 1 Science Curriculum Unit 4

Revised July 2017

Primary Resource: ***Knowing Science: Second Grade: What's the Matter?*** www.knowingscience.com 2016 Knowing Science, LLC	**BrainPOP** **Pebble Go**

Materials
Materials for each session activity and lesson are listed in the Knowing Science Teacher's Manual.

School/ Formative Assessment Plan	**School/District Summative Assessment Plan**
• Teacher observation of students engaged in group and independent activities. • Individual and small group conferences/interviews to assess understanding with rubric • Self-assessment by students with guidance from teacher.	• Teacher created assessments and projects • Teacher/District created benchmark assessments

Differentiation/Accommodations/Modifications

Gifted and Talented

(content, process, product and learning environment)

Extension Activities

- 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 that need to be mastered.
- Extended time to complete class work
- Visual dictionaries to help build vocabulary
- Provide copy of classnotes
- Pair with a peer for assistance during class

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.
- Extended time to complete class work
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- Preferential seating to be mutually determined by the student and teacher
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Modifications for Homework and Assignments

- Extended time to complete assignments.
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- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
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Green Township School District

Grade 1 Science Curriculum Unit 3

Revised July 2017

Unit 3: Parents and Heredity		
Lesson 3.1	***NJ Student Learning Science Standards:*** ● **1-LS1-2**. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).] ● **1-LS3-1**. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. [Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.] [Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.]	**Concept(s)**: ● Animal life cycles **Students will be able to**: ● Identify life cycle stages common to all living things (birth, growth, reproduction, death) ● Describe, sequence, and compare life cycle stages of various animals ● Give examples of animals that grow from eggs or live birth ● Explain the relationship of parents and offspring of various animals
Lesson 3.2	***NJ Student Learning Science Standards:*** ● **1-LS1-2**. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]	**Concept(s)**: ● Animal communities and survival **Students will be able to**: ● Identify general reasons for living in a group ● Describe the basic group structure and function of wolves (pack), elephant (herd), dolphins and other fish (school), and honeybees (colony), including roles, communication, and caring for offspring

Green Township School District

Grade 1 Science Curriculum Unit 3

Revised July 2017

Lesson 3.3	***NJ Student Learning Science Standards:*** ● **1-LS1-2**. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]	**Concept(s)**: ● Animal survival response to Winter **Students will be able to**: ● Associate basic needs with winter behaviors ● Explain what happens to animals that hibernate, migrate, and remain active during winter months ● Give examples of animals that engage in each type of winter behavior

Other Interdisciplinary Connections	
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Materials	

Green Township School District

Grade 1 Science Curriculum Unit 3

Revised July 2017

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Differentiation/Accommodations/Modifications
Gifted and Talented
(content, process, product and learning environment) **Extension Activities** ● 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 that need to be mastered.
- Extended time to complete class work
- Visual dictionaries to help build vocabulary
- Provide copy of classnotes
- Pair with a peer for assistance during class

Modifications for Homework/Assignments

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
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Students with Disabilities

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Modifications for Homework and Assignments

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Students at Risk of School Failure

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Green Township School District

Grade 1 Science Curriculum Unit 1

Revised July 2017

Unit 1: Measurement		
Lesson 1.1	***NJ Student Learning Science Standards:*** ● This Science unit is foundational and based on crucial mathematic standards to be used throughout the rest of the year. ● **See Grade 1 Math Curriculum Unit 3** ***NJ Student Learning Math Standards:*** ● 1.MD.A *Measure lengths indirectly and by iterating length units.* ● 1.MD.A.1: Order three objects by length; compare the lengths of two objects indirectly using a third object. ● 1.MD.A.2: Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.	**Concept(s)**: ● Linear measurement **Students will be able to**: ● Use direct comparison and nonstandard units to measure the length of common objects to build conceptual understanding of length. ● Describe the length of different objects using appropriate vocabulary ● Measure objects using nonstandard units and iterating length units. **Teacher notes regarding book lesson and activities:** *To align the science and math curriculums, modify the book objectives and activities to meet the goal of the grade 1 math measurement standards. First graders should be using non-standard units of measurement (e.g. paper clips, shoes, blocks, etc) not rulers or tape measures, as these are not introduced until grade 2 in the math curriculum. Skip session 5.*
Lesson 1.2	***NJ Student Learning Standards:*** ● This Science unit is foundational and based on crucial mathematic standards to be used throughout the rest of the year. ● **See Grade 1 Math Curriculum Unit 3** ***NJ Student Learning Math Standards:*** ● 1.MD.A *Measure lengths indirectly and by iterating length units.* ● 1.MD.A.1: Order three objects by length;	**Concept(s)**: ● Direct comparison of weight using nonstandard units **Students will be able to**: ● Compare two objects according to their weight and describe them as same or different, heavier or lighter ● Use a balance and nonstandard units to measure the weight of common objects ● Explain the connection between gravity and weight

	compare the lengths of two objects indirectly using a third object. ● 1.MD.A.2: Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.	
Lesson 1.3	***NJ Student Learning Standards:*** ● This Science unit is foundational and based on crucial mathematic standards to be used throughout the rest of the year. ● **See Grade 1 Math Curriculum Unit 5** ***NJ Student Learning Math Standards:*** ● 1.G.A.3: Partition circles and rectangles into two and four equal squares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of.	**Concept(s)**: ● Capacity **Students will be able to**: ● Use nonstandard units to compare and order the relative capacities of various containers ● Describe the capacity of the containers using comparative language as some, more, and most ● Understand and explain the relationship between customary measuring containers* **Teacher notes regarding book lesson and activities:** *To align the science and math curriculums, modify the book objectives and activities to meet the goal of the grade 1 math measurement standards. Note for sessions 3-4: First graders will begin developing the conceptual understanding of fractions in Unit 5 of the math curriculum.*

Other Interdisciplinary Connections	
NGSS Appendix for Alignment	***English-Language Arts:*** **RI.1.1.** Ask and answer questions about key details in a text. **RI.1.3.** Describe the connection between two individuals, events, ideas, or pieces of information in a text. **RI.1.4.** Ask and answer questions to help determine or clarify the meaning of words and phrases in a text. **RI.1.5.** Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. **RI.1.6.** Distinguish between information provided by pictures or other illustrations and information provided by the words in a text. **RI.1.10.** With prompting and support, read informational texts at grade level text complexity or above. **RF.1.4.** Read with sufficient accuracy and fluency to support comprehension. A. Read grade-level text with purpose and understanding. B. Read grade-level text orally with accuracy, appropriate rate, and expression. C. Use context to confirm or self-correct word recognition and understanding, rereading as necessary. **W.1.8.** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. **SL.1.1.** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). B. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. C. Ask questions to clear up any confusion about the topics and texts under discussion. **SL.1.2**. Ask and answer questions about key details in a text read aloud or information presented orally or through other media. **SL.1.3**. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood. **SL.1.5.** Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
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.**

Green Township School District

Grade 1 Science Curriculum Unit 1

Revised July 2017

	CRP12. Work productively in teams while using cultural global competence.
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:
District/School Primary and Supplementary Resources	
Primary Resource: ***Knowing Science: First Grade: Movement*** www.knowingscience.com 2016 Knowing Science, LLC	**BrainPOP** **Pebble Go**
Materials	
Materials for each session activity and lesson are listed in the Knowing Science Teacher's Manual.	
School/ Formative Assessment Plan	**School/District Summative Assessment Plan**
• Teacher observation of students engaged in group and independent activities. • Individual and small group conferences/interviews to assess understanding with rubric • Self-assessment by students with guidance from teacher.	• Teacher created assessments and projects • Teacher/District created benchmark assessments

Differentiation/Accommodations/Modifications

Gifted and Talented

(content, process, product and learning environment)

Extension Activities

- 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 that need to be mastered.
- Extended time to complete class work
- Visual dictionaries to help build vocabulary
- Provide copy of classnotes
- Pair with a peer for assistance during class

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.
- 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 1 Science Curriculum Unit 2

Revised July 2017

Unit 2: Light and Sound		
Lesson 2.1	***NJ Student Learning Standards:*** ● **1-PS4-1**. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. [Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.]	**Concept(s)**: ● Properties of sound and vibration **Students will be able to**: ● Explain that sound is produced when matter vibrates ● Explain how sound waves produced by one object may cause another to vibrate
Lesson 2.2	***NJ Student Learning Standards:*** ● **1-PS4-2**. Make observations to construct an evidence-based account that objects can be seen only when illuminated. [Clarification Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.] ● **1-PS4-3**. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. [Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]	**Concept(s)**: ● Basic properties of light **Students will be able to**: ● Identify light as a form of energy that helps us see objects ● Demonstrate that light travels in a straight line called a ray or beam ● Give examples of objects or materials that are opaque, transparent, or translucent

Green Township School District

Grade 1 Science Curriculum Unit 2

Revised July 2017

Lesson 2.3	***NJ Student Learning Standards:*** ● **1-PS4-1**. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. [Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.] ● **1-PS4-4**. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.* [Clarification Statement: Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of drum beats.] [Assessment Boundary: Assessment does not include technological details for how communication devices work.]	**Concept(s)**: ● Communication engineering challenge (using light and/or sound) **Students will be able to**: ● Give examples of communication technology using light ● Give examples of communication technology using sound ● Understand how communication technology has changed ● Use engineering design process and provided materials to build and test different designs for cup and string phones

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Grade 1 Science Curriculum Unit 2

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