

*Suggested alignment by marking period. (Correlations are cross-referenced with Wonders Units)*

<p style="text-align: center;"><b><u>Marking Period 1</u></b></p> <p style="text-align: center;"><i>*Plants*</i></p>	<p style="text-align: center;"><b>Unit A: Plants and Animals</b> <i>(Wonders Units 1 and 2)</i></p>
<p style="text-align: center;"><b><u>Marking Period 2</u></b></p> <p style="text-align: center;"><i>*Animals*</i></p>	<p style="text-align: center;"><b>Unit A: Plants and Animals</b> <i>(Wonders Units 1 and 2)</i></p>
<p style="text-align: center;"><b><u>Marking Period 3</u></b></p> <p style="text-align: center;"><i>*Ecosystems*</i></p> <p style="text-align: center;"><i>*Earth Science: Land and Water*</i></p>	<p style="text-align: center;"><b>Unit B: Environments and Energy</b> <i>(Wonders Units 4/5)</i></p>
<p style="text-align: center;"><b><u>Marking Period 4</u></b></p> <p style="text-align: center;"><i>*Matter*</i></p>	<p style="text-align: center;"><b>Unit B: Environments and Energy</b> <i>(Wonders Units 4/5)</i></p> <p style="text-align: center;"><b>Unit E: Matter and Energy</b> <i>(Wonders Unit 6)</i></p>

<b>Time Frame</b>	4 weeks
<b>Course</b>	
<b>Life Science</b>	
<b>Title of Unit</b>	
Independent Relationships in Ecosystems	
<b>Essential Questions</b>	
<ol style="list-style-type: none"> <li>1. What do plants need to grow?</li> <li>2. How do plants depend on animals for seed dispersion and pollination?</li> <li>3. How does habitat affect the diversity of living things?</li> </ol>	
<b>Enduring Understandings</b>	
<i>Students will understand that...</i>	
<ul style="list-style-type: none"> <li>→ plants need water and light.</li> <li>→ plants depend on animals for pollination or to move their seeds around.</li> <li>→ a habitat contains basic needs for an organism to survive (examples: water, food, and shelter).</li> <li>→ different habitats have many different kinds of living things in them (biodiversity) .</li> </ul>	
<b>Key Knowledge</b>	
<i>Students will know...</i>	
<ul style="list-style-type: none"> <li>→ plants depend on water and light to grow.</li> <li>→ plants depend on animals for pollination or to move their seeds around.</li> <li>→ there are many different kinds of living things in any area, and they exist in different places on land and in water.</li> </ul>	
<b>Concepts and Skills</b>	
<i>Students will be able to.....</i>	
<ul style="list-style-type: none"> <li>→ make observations to compare the diversity of plants and animals in different habitats.</li> <li>→ develop a simple model that mimics the function of an animal dispersing seeds or pollinating plants.</li> <li>→ plan and conduct an investigation to determine if</li> </ul>	
<b>Learning Activities</b>	
<b><u>Mystery Science:</u></b>	
❖ <a href="#">Plant Adventure</a>	
<b><u>BrainPop Jr:</u></b>	
❖ <a href="#">Parts of a Plant</a>	
❖ <a href="#">Plant Adaptations</a>	
❖ <a href="#">Plant Life Cycle</a>	
❖ <a href="#">Habitats</a>	
<b><u>PebbleGo:</u></b>	
❖ <a href="#">What are Plants</a>	
❖ <a href="#">Parts of a Plant</a>	
❖ <a href="#">Plant Habitats</a>	
❖ <a href="#">Adaptations</a>	

**Video Resources:**

- ❖ [What Do Plants Need-](#)
- ❖ [Seed Dispersal-](#)
- ❖ [Diversity of Different Habitats -](#)
- ❖ [Seedy Side of Plants](#)
- ❖ [Parts of a Plant](#)
- ❖ [Pollination](#)
- ❖ [Adaptations](#)
- ❖ [Bill Nye- Flowers](#)

**Activities**

- ❖ [Celery Experiment](#) All Plants Need Water
- ❖ [Photosynthesis](#) How Plants Make food
- ❖ [Survival of a plant](#)
- ❖ [Dispersing Seeds](#)
- ❖ [Pollinator](#) Activity Book
- ❖ [Pollination Experiment](#)
- ❖ [Pollination](#)
- ❖ [Engineer Your Own Hands on Pollinator](#)
- ❖ [Exploring plants- What seed need to grow and seed dispersal](#)

**Interactive Games:**

**Habitats**

- ❖ <http://pbskids.org/plumlanding/games/>
- ❖ <http://www.sheppardsoftware.com/content/animals/kidscorner/games/producersconsumersgame.htm>
- ❖ <http://www.sheppardsoftware.com/content/animals/kidscorner/games/foodchaingame.swf>
- ❖ <http://switchzoo.com/games/habitatgame.htm>
- ❖ [http://www.iknowthat.com/ScienceIllustrations/foodchains/science\\_desk.swf](http://www.iknowthat.com/ScienceIllustrations/foodchains/science_desk.swf)
- ❖ <http://www.turtlediary.com/game/food-chain.html>

**Sunlight and Water**

- ❖ <http://www.sciencekids.co.nz/gamesactivities/plantsgrow.html>
- ❖ <http://www.firstschoolyears.com/science/living/interactive/growing-plants.swf>
- ❖ [https://www.scholastic.com/magicschoolbus/games/sciencenews/loader\\_2.swf](https://www.scholastic.com/magicschoolbus/games/sciencenews/loader_2.swf)

**Pollination**

- ❖ <http://www.hyperstaffs.info/work/biology/Handford/artifact/start.html>

**Interactive Websites**

- ❖ The Plant Escape
- ❖ How Do Plants Get Pollinated
- ❖ Interactive Plant Biology Multiple sites

**Wonders Connection**

Unit 2- Animal Discoveries

**Literature Connections:**

- ❖ Carle, E. (2009). “The Tiny Seed”
- ❖ Krauss, R. (1945). “The Carrot Seed”
- ❖ Brown, P. (2009). “The Curious Garden”
- ❖ Pallotta, J. (2010). “Who Will Plant a Tree?”
- ❖ Lawrence, E. (2012). “From Bird Poop to Wind: How Seeds Get Around”
- ❖ Anthony, J. (1997). “The Dandelion Seed”
- ❖ Macken, J. (2008). “Flip, Float, Fly! Seeds on the Move”
- ❖ Ward, J. (2009). “The Busy Tree”
- ❖ Fredericks, A. (2001). “Under One Rock: Bugs, Slugs and Other Ughs.”
- ❖ Fleming, D. (1998). “In the Small, Small Pond”
- ❖ Guiberson, B. (1991). “Cactus Hotel”
- ❖ Rebecca Seiling “Plant a Seed of Peace”

**Research Investigations:**

- ❖ [Kiddle](#)
- ❖ [Wonderopolis](#)

**Additional Resources**

- ❖ [Pollinating the Bees Have It](#)
- ❖ [Habitats for Plants and Animals](#) - Slideshow
- ❖ [Habitat Diversity](#)
- ❖ [Quizlet](#) Plants
- ❖ [Quizlet](#) Plants and Animals
- ❖ [Online Books](#) Plants
- ❖ [Google Slideshow](#)- Habitats for Plants and Animals
- ❖ [Plant Life Teacher’s Guide](#)
- ❖ [San Diego Zoo](#)
- ❖ [Pollination Power Lesson](#)
- ❖ [Powerpoint on Seed Dispersal](#)

**Assessments**

1. Parts of a Plant
2. Plant Life Cycle
3. Mystery Science
4. Brain Pop Plants

\*Hard copies of Plant Unit assessments located in resource binder.

**NGSS and NJSLS**

**Standards:** (Note: Include reference to relevant standards in the Core Content Area as well as technology and 21st-century life and careers.)

→ **NGSS:**

- ◆ **2-LS2-1:** Plan and conduct an investigation to determine if plants need sunlight and water to grow.
- ◆ **2-LS2-2:** Develop a simple model that mimics the function of an animal in

dispersing seeds or pollinating plants.

- ◆ **2-LS4.1:** Make observations of plants and animals to compare the diversity of life in different habitats.

→ **NJSLS: ELA**

- ◆ **W.2.7:** Participate in shared research and writing projects(e.g., read a number of books, on a single topic to produce a report; record science observations).
- ◆ **W.2.8:** Recall information from experiences or gather information from provided sources to answer a question.
- ◆ **SL.2.5:** Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.

→ **NJSLS: Math**

- ◆ **MP.2:** Reason abstractly and quantitatively.
- ◆ **MP.4:** Model with mathematics.
- ◆ **MP.5:** Use appropriate tools strategically.
- ◆ **2.MD.D.10:** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

→ **Technology: 8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

- ◆ **8.1.2.A.3:** Compare the common uses of at least two different digital applications and identify the advantages and disadvantages of using each.
- ◆ **8.1.2.A.4:** Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
- ◆ **8.1.5.A.1:** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
- ◆ **8.1.8.A.1:** Demonstrate knowledge of a real world problem using digital tools.

→ ***Strand: Communication and Collaboration:*** Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

- ◆ **8.1.P.C.1:** Collaborate with peers by participating in interactive digital games or activities.
- ◆ **8.1.2.C.1:** Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.

### Modifications

#### Modifications: (ELLs, Special Education, Gifted and Talented)

- Follow all IEP modifications and 504 plans
- Provide differentiated instruction as needed.
- Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).

**GRADE:** 2

**COURSE:** Science Curriculum 2017 NGSS Aligned

- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings.
- Use project-based science learning to connect science with observable phenomena.
- Structure the learning around explaining or solving a social or community-based issue.
- Provide ELL students with multiple literacy strategies.

<b>Time Frame</b>	<b>4-6 weeks</b>
<b>Course</b>	
<b>Physical Science</b>	
<b>Title of Unit</b>	
Structure and Properties of Matter	
<b>Essential Questions</b>	
1. How are different forms of matter similar and different from one another? 2. How do the properties of materials relate to their use? 3. How can materials be assembled or disassembled to change their purpose? 4. How does heating and cooling change matter?	
<b>Enduring Understandings</b>	
<i>Students will understand that...</i>	
→ Matter exists as different substances that have various observable properties. → Properties such as strength, flexibility, hardness, texture, and absorbency determine the purpose of matter. → Objects can be built from smaller parts. → Some materials experience permanent changes when heated or cooled, while others have changes that are reversible	
<b>Key Knowledge</b>	
<i>Students will know...</i>	
→ Matter can exist in various forms, both solid and liquid, depending on the temperature. → Matter can be described and classified by its observable properties. → Properties such as strength, flexibility, hardness, texture, and absorbency determine the purpose of matter. → A great variety of objects can be built up from a small set of pieces	
<b>Concepts and Skills</b>	
<i>Students will be able to...</i>	
→ Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. → Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. → Make observations to construct an evidence based account of how an object made of a small set of pieces can be disassembled → Construct an argument with evidence that some change caused by heating or cooling can be reversed and some cannot.	
<b>Learning Activities</b>	
<b>Mystery Science:</b>	
1. <b>Why are so many toys made out of plastic? (Phases of Matter/Melting Investigation)</b>	

<https://mysteryscience.com/materials/mystery-3/material-changes-phases-of-matter/66?r=9342927>

2. **Why do we wear clothes? (Properties of Matter)** <https://mysteryscience.com/materials/mystery-1/material-properties-engineering/64?r=9342927>
3. **Can you really fry an egg on a hot sidewalk? (Insulation and Conduction)** <https://mysteryscience.com/materials/mystery-2/material-properties-classifying-materials/65?r=9342927>

### **BrainPop Jr:**

- ❖ States of Matter: <https://jr.brainpop.com/science/matter/changingstatesofmatter/>
- ❖ Heating: <https://jr.brainpop.com/science/energy/heat/>
- ❖ Properties of Matter: <https://jr.brainpop.com/science/matter/solidsliquidsandgases/>
- ❖ Physical and Chemical Changes: <https://jr.brainpop.com/science/matter/physicalandchemicalchanges/>

### **PebbleGo:**

- ❖ What is Matter? <https://www.pebblego.com/modules/2/categories/2988/articles/2104>
- ❖ Materials/Properties: <https://www.pebblego.com/modules/2/categories/2959>
- ❖ Properties of Materials: <https://www.pebblego.com/modules/2/categories/2958>
- ❖ Supporting a Scientific Opinion: <https://www.pebblego.com/modules/2/categories/2983/articles/2191>

### **Video Resources:**

- ❖ Introduction to Matter: <https://www.youtube.com/watch?v=8ta4HygRCpk>
- ❖ Structure and Properties of Matter:
  - Classify Matter by Characteristic
    - <https://www.youtube.com/watch?v=wclY8F-UoTE>
  - Properties of Matter/determine which is best
    - <https://www.youtube.com/watch?v=8ta4HygRCpk>
  - Disassemble small pieces to make a larger object.
    - <https://www.youtube.com/watch?v=ImjX7v4zPBE>
  - Heating and Cooling of Water
    - <https://www.youtube.com/watch?v=KCL8zqiXbME>

### **Interactive Games and Activities:**

Matter song to Farmer in the Dell: <https://www.teacherspayteachers.com/Product/States-of-Matter-song-Farmer-in-the-Dell-640669>

- ❖ Matter Game: [http://www.abcya.com/states\\_of\\_matter.htm](http://www.abcya.com/states_of_matter.htm)

### **Properties**

- ❖ [http://www.bbc.co.uk/bitesize/ks1/science/properties\\_of\\_materials/play/popup.shtml](http://www.bbc.co.uk/bitesize/ks1/science/properties_of_materials/play/popup.shtml)
- ❖ [http://www.bgfl.org/bgfl/custom/resources\\_fnp/client\\_fnp/ks3/science/changing\\_matter/changingmatter.swf](http://www.bgfl.org/bgfl/custom/resources_fnp/client_fnp/ks3/science/changing_matter/changingmatter.swf)
- ❖ [http://www.bbc.co.uk/schools/scienceclips/ages/5\\_6/sorting\\_using\\_materials.shtml](http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sorting_using_materials.shtml)

### **Changes in Matter**

- ❖ <http://www.learninggamesforkids.com/changes-in-matter-games/carnival-of-changes.html>
- ❖ <http://archive.fossweb.com/modulesK-2/SolidsandLiquids/activities/changeit.html>
- ❖ [http://www.chem4kids.com/files/matter\\_intro.html](http://www.chem4kids.com/files/matter_intro.html)
- ❖ <http://www.livescience.com/46946-solids.html>

- ❖ [https://www.ucar.edu/learn/1\\_1\\_2\\_3t.htm](https://www.ucar.edu/learn/1_1_2_3t.htm)
- ❖ <http://easyscienceforkids.com/all-about-states-of-matter/>
- ❖ <https://www.khanacademy.org/science/chemistry/states-of-matter-and-intermolecular-forces/states-of-matter/v/states-of-matter://studyjams.scholastic.com/studyjams/jams/science/matter/properties-of-matter.htm>
- ❖ <http://nstacomunities.org/blog/2013/08/02/discovering-science-classifying-and-categorizing-matter-grades-2-3/>
- ❖ <http://www.cpalms.org/Public/PreviewResourceLesson/Preview/46090>

**Research Investigations:**

- ❖ [Wonderopolis](#)
- ❖ [Kiddle](#)

**Literature Connections:**

- ❖ [Change It!: Solids Liquids Gases and You \(Primary Physical Science\)](#) by Adrienne Mason
- ❖ [What's the Matter in Mr. Whiskers' Room?](#) by Michael Elsohn Ross
- ❖ [Solids, Liquids, And Gases \(Rookie Read-About Science\)](#) by Ginger Garrett
- ❖ [What Is the World Made Of? All About Solids, Liquids, and Gases \(Let's-Read-and-Find-Out Science, Stage 2\)](#) by Kathleen Weidner Zoehfeld & Paul Meisel
- ❖ [It Does Matter!: Different States of Matter \(For Kiddie Learners\)](#) by Baby Professor
- ❖ [Changing States: Solids, Liquids, and Gases \(Do It Yourself\)](#) by Will Hurd

**Hands On Activities:**

STEAM experiment:

[http://hookedonscience.org/files/2016\\_Experiment\\_Archive\\_Mystery\\_Matter.pdf](http://hookedonscience.org/files/2016_Experiment_Archive_Mystery_Matter.pdf)

**Cross-Curricular Connections**

*Visual Arts/Kinesthetic Learning- Acting:* In the classroom students should act out each state of matter.

- ❖ **Solid-** students should be close to one another and moving very little
- ❖ **Liquid-** students should hold hands and spread out further filling the container(classroom) show students that if you break a link (their arms) it will reattach when they flow back into one another.
- ❖ **Gas-** students should be moving quickly around the classroom bouncing off one another and the walls.

**Assessments**

1. **Quizlet Interactive Assessment:**
2. **Turtle Diary Assessment:**
3. **Brain Pop Jr: Easy Interactive Quiz**
4. **Mystery Science Assessments:**
5. **Phases of Matter Assessment:**
6. **States of Matter Project/Rubric:**
  - Matter Properties Sample Test
  - Kahoot Matter Review

**NGSS and NJSLS**

**Standards:** (Note: Include reference to relevant standards in the Core Content Area as well as technology and 21st-century life and careers.)

→ **NGSS:**

- ◆ **2-PSI-1:** Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- ◆ **2-PSI-2:** Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. **2-PSI-3:** Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.
- ◆ **2-PSI-4:** Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
- ◆ **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.
- ◆ **K-2-ETS1-2.** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- ◆ **K-2-ETS1-3.** Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
- ◆ **2-PS1-1.** Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

→ **NJSLS: ELA**

- ◆ **RI.2.8** With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (**K-2-ETS1-3**)
- ◆ **W.2.6** Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (**2-PS1-1**), (**2-PS1-2**)
- ◆ **W.2.8** Recall information from experiences or gather information from provided sources to answer a question. (**2-PS1-1**), (**2-PS1-2**), (**K-2-ETS1-3**)

→ **NJSLS: Math**

- ◆ **2.MD.D.10** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories.
- ◆ **2.MD.D.9** Solve simple put-together, take-apart, and compare problems 1 using information presented in a bar graph.

→ **Technology: 8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

- ◆ **8.1.2.A.3:** Compare the common uses of at least two different digital applications and identify the advantages and disadvantages of using each.
- ◆ **8.1.2.A.4:** Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
- ◆ **8.1.5.A.1:** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
- ◆ **8.1.8.A.1:** Demonstrate knowledge of a real world problem using digital tools.

→ **Strand: Communication and Collaboration:** *Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.*

**GRADE:** 2

**COURSE:** Science Curriculum 2017 NGSS Aligned

- ◆ **8.1.P.C.1:** Collaborate with peers by participating in interactive digital games or activities.
- ◆ **8.1.2.C.1:** Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.

### **Modifications**

#### **Modifications: (ELLs, Special Education, Gifted and Talented)**

- Follow all IEP modifications and 504 plans
- Provide differentiated instruction as needed.
- Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings.
- Use project-based science learning to connect science with observable phenomena.
- Structure the learning around explaining or solving a social or community-based issue.
- Provide ELL students with multiple literacy strategies.

<b>Time Frame</b>	<b>3 weeks</b>
<b>Course</b>	
<b>Earth Sciences</b>	
<b>Title of Unit</b>	
Earth Systems and Earth's Place in the Universe	
<b>Essential Questions</b>	
1. What are different kinds of land and bodies of water?	
2. Where is water found?	
3. How and why have humans tried to slow or prevent wind or water from changing the shape of the land?	
<b>Enduring Understandings</b>	
<i>Students will understand that...</i>	
→ some events happen very quickly such as volcanic explosions and earthquakes; others, such as the erosion of rocks, occur very slowly over a time period much longer than one can observe.	
→ wind and water can change the shape of land.	
→ you can map the shapes and kinds of land and water in any area.	
→ humans have designed multiple solutions to slow or prevent wind or water from changing the shape of the land, such as dikes, windbreaks, and using shrubs, grass, and trees	

## Key Knowledge

### *Students will know...*

- wind and water can change the shape of the land.
- maps show where things are located.
- one can map the shapes and kinds of land and water in any area.
- water is found in oceans, rivers, lakes and ponds.
- water exists as solid ice and in liquid form.
- some events happen very quickly, such as volcanic explosions and earthquakes; others, such as erosion, occur very slowly over a time period much longer than one can observe.

## Concepts and Skills

### *Students will be able to...*

- apply their understanding of the idea that wind and water can change the shape of land in order to compare design solutions that slow or prevent such change.
- use information and models to identify and represent the shapes and kinds of land and bodies of water in an area.
- use information and models to identify and represent bodies of water in an area where water is found on Earth.
- identify whether water found on the Earth is solid or liquid.

## Learning Activities

### **Mystery Science:**

1. **Mystery # 1: If You Floated Down a River...** <https://mysteryscience.com/water/mystery-1/mapping-earth-s-surface-landforms/112?r=9342927>
2. **Mystery # 2: Why Is There Sand At The Beach?**  
<https://mysteryscience.com/water/mystery-2/erosion-earth-s-surface-landforms/113?r=9342927>
3. **Mystery # 3: What Is Strong Enough To Make A Canyon?**  
<https://mysteryscience.com/water/mystery-3/erosion-earth-s-surface-landforms/114?r=9342927>

### **BrainPop Jr:**

- ❖ [Slow Land Changes](#)
- ❖ [Fast Land Changes](#)
- ❖ [Landforms](#)
- ❖ [The Water Cycle](#)

### **PebbleGo:**

- ❖ [Lakes, Rivers, Oceans](#)
- ❖ [Landforms](#)

### **Video Resources:**

- ❖ [Fast Moving Changes to Earth](#)
- ❖ [Shape of the Land](#)
- ❖ [Sources of Water](#)
- ❖ [The Water Bodies](#)
- ❖ [Water and Its Uses](#)
- ❖ [Exploring Landforms and Bodies of Water](#)

- ❖ [Landforms of the Earth](#)
- ❖ [Landforms StudyJam](#)

### **Interactive Games and Activities:**

#### **Changes on Earth**

- ❖ <http://sciencenetlinks.com/media/filer/2011/10/07/forces.swf>
- ❖ [Landforms](#)

### **Research Investigations:**

- ❖ [Wonderopolis](#)
- ❖ [Kiddle](#)

### **Literature Connections:**

#### **Changes on Earth**

- ❖ [The Dirt on Dirt](#) Paperback – February 1, 2008 by Paulette Bourgeois
- ❖ [The Magic School Bus Science Chapter Book #15: Voyage to the Volcano](#) Aug 1, 2003 by Judith Stamper and John Speirs
- ❖ [Volcano: The Eruption and Healing of Mount St. Helens](#) Mar 31, 1993 by Patricia Lauber
- ❖ [Earthquake in the Early Morning](#) (Magic Tree House #24) (Magic Tree House (R)) Jul 24, 2001 by Mary Pope Osborne and Sal Murdocca

#### **Wind and Water**

- ❖ [Erosion: Changing Earth's Surface](#) (Amazing Science) Sep 1, 2006 by Robin Koontz and Matthew Harrad
- ❖ [Landforms:](#)
- ❖ [U.S. Landforms](#) (True Books) Mar 2012 by Dana Meachen Rau and Wolfinger, James, Ph.D.
- ❖ [Extreme Planet: Carsten Peter's Adventures in Volcanoes, Caves, Canyons, Deserts, and Beyond!](#) (National Geographic Kids) Oct 13, 2015 by Carsten Peter and Glen Phelan

### **Hands On Activities:**

- ❖ **Develop a model to represent shapes and kind of land and kinds of bodies of water.**  
(real class project to show how the model of the landforms and bodies of water was built)
  - [https://www.youtube.com/watch?v=n7\\_RCRqoXGs](https://www.youtube.com/watch?v=n7_RCRqoXGs)
- ❖ **Changes on Earth Lab**
  - <http://www.sciencecourseware.org/eec/Earthquake/>
- ❖ **Landforms Lab**
  - <http://www.mrnussbaum.com/maps/wl3.swf>
  - <http://mrnussbaum.com/flash/LANDFORMS3.swf>
- ❖ **Mapping Landforms**
  - <https://www.nationalgeographic.org/activity/mapping-landforms/>
- ❖ **Landform Sort**
  - <https://www.superteacherworksheets.com/landforms/landforms->

[1\\_WMWNF.pdf?up=1486029388](#)

❖ **Developing Models of Land and Water**

- <http://mocomi.com/landforms/>
- <http://mocomi.com/landforms/>

**Cross-Curricular Connections**

❖ **Music:**

- Landforms Rap [https://www.youtube.com/watch?v=X\\_IZH2E6GHQ](https://www.youtube.com/watch?v=X_IZH2E6GHQ)
- Landforms Song <https://www.youtube.com/watch?v=iAc6yrdmAbw>

❖ **Art: Constructing Landforms**

❖ **Technology:** <https://www.slideshare.net/eboreman/land-and-water-forms-13662885>

**Landforms Diorama**

❖ [Diorama Project Directions and Sample](#)

**STEAM**

❖ [http://hookedonscience.org/files/2016\\_Experiment\\_Archive\\_EGG\\_GEODE.pdf](http://hookedonscience.org/files/2016_Experiment_Archive_EGG_GEODE.pdf)

**Teacher Resources:**

- ❖ [Slideshare Presentation: Land and Water Forms](#)
- ❖ [Bodies of Water Anchor Chart](#)
- ❖ [How Earth Changes](#)
- ❖ [Bodies of Water Study Cards](#)
- ❖ [Project Rubrics](#)

**Assessments**

**Mystery Science Assessments**

**Landforms of the Earth Interactive Quiz**

**Water and Landforms Quiz**

**Developing Models of Land and Water**

Project Rubrics

**NGSS and NJSLS**

**Standards:** (Note: Include reference to relevant standards in the Core Content Area as well as technology and 21st-century life and careers.)

→ **NGSS:**

- ◆ **2-ESS1-1:** Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
- ◆ **2-ESS2-1:** Compare multiple solutions designed to slow or prevent wind or water

from changing the shape of the land.

- ◆ **2-ESS2-2:** Develop a model to represent the shapes and kinds of land and bodies of water in an area.
- ◆ **2-ESS2-3:** Obtain information to identify where water is found on Earth and that it can be solid or liquid.

→ **NJSLS: ELA**

- ◆ **RI.2.3:** Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
- ◆ **RI.2.9:** Compare and contrast the most important points presented by two texts on the same topic.

→ **NJSLS: Math**

- ◆ **MP.2:** Reason abstractly and quantitatively.
- ◆ **MP.4:** Model with mathematics.
- ◆ **MP.5:** Use appropriate tools strategically.
- ◆ **2.NBT.A.3:** Read and write numbers to 1,000 using base-10 numerals, number names, and expanded form.
- ◆ **2.MDB.5:** Use addition and subtraction with 100 to solve word problems involving lengths that are given in the same unit.

→ **Technology: 8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

- ◆ **8.1.2.A.3:** Compare the common uses of at least two different digital applications and identify the advantages and disadvantages of using each.
- ◆ **8.1.2.A.4:** Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
- ◆ **8.1.5.A.1:** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
- ◆ **8.1.8.A.1:** Demonstrate knowledge of a real world problem using digital tools.

→ ***Strand: Communication and Collaboration:*** *Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.*

- ◆ **8.1.P.C.1:** Collaborate with peers by participating in interactive digital games or activities.
- ◆ **8.1.2.C.1:** Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.
- ◆ **8.1.5.C.1:** Engage in online discussions with learners of other cultures to investigate a worldwide issue from multiple perspectives and sources, evaluate findings and present possible solutions, using digital tools and online resources for all steps.

## **Modifications**

### **Modifications: (ELLs, Special Education, Gifted and Talented)**

- Follow all IEP modifications and 504 plans
- Provide differentiated instruction as needed.
- Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.

**GRADE:** 2

**COURSE:** Science Curriculum 2017 NGSS Aligned

- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings.
- Use project-based science learning to connect science with observable phenomena.
- Structure the learning around explaining or solving a social or community-based issue.
- Provide ELL students with multiple literacy strategies.