



Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

Curriculum Development Timeline

School: Township of Ocean Elementary Schools

Course: Science, Grade 2

Department: Science

Board Approval	Supervisor	Notes
February 2009	Jessica Shaw	Born Date
June 2011	Christine Picerno	Revisions
August 2017	Christine Picerno	Revisions
March 2019	Christine Picerno	Review

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

Marking Period 1		Marking Period 2	
1	Independent Relationships in Ecosystems	11	Independent Relationships in Ecosystems
2	Independent Relationships in Ecosystems	12	Independent Relationships in Ecosystems
3	Independent Relationships in Ecosystems	13	Independent Relationships in Ecosystems
4	Independent Relationships in Ecosystems	14	Independent Relationships in Ecosystems
5	Independent Relationships in Ecosystems	15	Structure and Properties of Matter
6	Independent Relationships in Ecosystems	16	Structure and Properties of Matter
7	Independent Relationships in Ecosystems	17	Structure and Properties of Matter
8	Independent Relationships in Ecosystems	18	Structure and Properties of Matter
9	Independent Relationships in Ecosystems	19	Structure and Properties of Matter
10	Independent Relationships in Ecosystems	20	Structure and Properties of Matter
Marking Period 3		Marking Period 4	
21	Structure and Properties of Matter	31	Earth Systems and Earth's Place in the Universe
22	Structure and Properties of Matter	32	Earth Systems and Earth's Place in the Universe
23	Structure and Properties of Matter	33	Earth Systems and Earth's Place in the Universe
24	Structure and Properties of Matter	34	Earth Systems and Earth's Place in the Universe
25	Structure and Properties of Matter	35	Earth Systems and Earth's Place in the Universe
26	Structure and Properties of Matter	36	Earth Systems and Earth's Place in the Universe
27	Structure and Properties of Matter	37	Earth Systems and Earth's Place in the Universe
28	Structure and Properties of Matter	38	Earth Systems and Earth's Place in the Universe
29	Earth Systems and Earth's Place in the Universe	39	Earth Systems and Earth's Place in the Universe
30	Earth Systems and Earth's Place in the Universe	40	Earth Systems and Earth's Place in the Universe

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Time Frame	14 weeks
Course	
Life Science	
Title of Unit	
Independent Relationships in Ecosystems	
Essential Questions	
<ol style="list-style-type: none">1. What do plants need to grow?2. How do plants depend on animals for seed dispersion and pollination?3. How does habitat affect the diversity of living things?	
Enduring Understandings	
<p><i>Students will understand that...</i></p> <ul style="list-style-type: none">→ plants need water and light.→ plants depend on animals for pollination or to move their seeds around.→ a habitat contains basic needs for an organism to survive (examples: water, food, and shelter).→ different habitats have many different kinds of living things in them (biodiversity) .	
Key Knowledge	
<p><i>Students will know...</i></p> <ul style="list-style-type: none">→ plants depend on water and light to grow.→ plants depend on animals for pollination or to move their seeds around.→ there are many different kinds of living things in any area, and they exist in different places on land and in water.	
Concepts and Skills	
<p><i>Students will be able to.....</i></p> <ul style="list-style-type: none">→ make observations to compare the diversity of plants and animals in different habitats.→ develop a simple model that mimics the function of an animal dispersing seeds or pollinating plants.→ plan and conduct an investigation to determine if	
Learning Activities	
<u>Mystery Science:</u>	

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❖ [Plant Adventure](#)

BrainPop Jr:

- ❖ [Parts of a Plant](#)
- ❖ [Plant Adaptations](#)
- ❖ [Plant Life Cycle](#)
- ❖ [Habitats](#)

PebbleGo:

- ❖ [What are Plants](#)
- ❖ [Parts of a Plant](#)
- ❖ [Plant Habitats](#)
- ❖ [Adaptations](#)

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

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- ❖ <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.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

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:

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- ❖ [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

Formative:

- Parts of a Plant Quiz
- Plant Life Cycle Quiz
- Brain Pop Plants Quiz

Summative:

- Mystery Science Plant Adventure Test

Benchmark:

- Engineering Design Process Rubric Assessment 1

Alternative STEM Assessments:

- [Celery Experiment](#) All Plants Need Water
- [Dispersing Seeds](#)
- [Pollinator](#) Activity Book
- [Pollination Experiment](#)
- [Engineer Your Own Hands on Pollinator](#)
- [Exploring plants- What seed need to grow and seed dispersal](#)

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

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NGSS and Interdisciplinary Connections

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 Integration

Technology Learning Activities:

- Students use Chromebooks to access Mystery Science extension activities.
- Students will use Google Classroom to access links to interactive activities, science labs, interactive stories and video resources.

Alignment to Standards:

- **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.
- **8.1.8.A.1:** Demonstrate knowledge of a real world problem using digital tools.
- **8.1.P.C.1:** Collaborate with peers by participating in interactive

21st-Century Skills

9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

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Career Ready Practices

CRP 4. SW communicate clearly and effectively and with reason while working with partners on various lab assignments.

CRP 8. SW utilize critical thinking to make sense of problems and persevere in solving them when working on the Celery and Pollination experiments.

CRP 11. SW use technology to enhance productivity by accessing the following sites: [The Plant Escape](#), [How Do Plants Get Pollinated](#) and [Interactive Plant Biology](#).

Time Frame

14 weeks

Course

Physical Science

Title of Unit

Structure and Properties of Matter

Essential Questions

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?

Enduring Understandings

Students will understand that...

- 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

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Key Knowledge

Students will know...

- 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

Concepts and Skills

Students will be able to...

- 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.

Learning Activities

Mystery Science:

1. **Why are so many toys made out of plastic? (Phases of Matter/Melting Investigation)**
<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>

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- ❖ 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=KCL8zqjXbME>

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

Properties

- ❖ 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.bbc.co.uk/schools/scienceclips/ages/5_6/sorting_using_matter_fs.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.livescience.com/46946-solids.html>
- ❖ 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/>

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❖ <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

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

Formative:

- Brain Pop Jr: Easy Interactive Quiz
- Kahoot Matter Review
- Matter Properties Sample Test

Summative:

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- Turtle Diary Test
- Quizlet Interactive Solid, Liquid and Gas Test
- Mystery Science Insulation and Conduction Test
- Phases of Matter Test
- States of Matter Project/Rubric

Benchmark:

- Engineering Design Process Rubric Assessment 2

Alternative Assessments:

- 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>

NGSS and Interdisciplinary Connections

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.

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**)

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- **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 Integration

Technology Learning Activities:

- Students use Chromebooks to access Mystery Science extension activities.
- Students will use Google Classroom to access links to interactive activities, science labs, interactive stories and video resources.

Alignment to Standards:

- **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.
- **8.1.P.C.1:** Collaborate with peers by participating in interactive

21st-Century Skills

9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals

Career Ready Practices

CRP 6. Demonstrate creativity and innovation when completing the following activities:

- 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>

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Time Frame	12 weeks
Course	
Earth Sciences	
Title of Unit	
Earth Systems and Earth's Place in the Universe	
Essential Questions	
<ol style="list-style-type: none">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?	
Enduring Understandings	
<p><i>Students will understand that...</i></p> <ul style="list-style-type: none">→ 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	

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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](#)

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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:](#)

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- ❖ 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
- ❖ **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_1ZH2E6GHQ
 - 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

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Teacher Resources:

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

Assessments

Formative:

- Landforms of the Earth Interactive Quiz
- Water and Landforms Quiz

Summative:

- Mystery Science Floated Down the River Test
- Developing Models of Land and Water
- Landform Diorama Project Rubrics

Benchmark:

- Engineering Design Process Rubric Assessment 3

Alternative STEM Assessments:

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

NGSS and Interdisciplinary Connections

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 Integration

Technology Learning Activities:

- Students use Chromebooks to access Mystery Science extension activities.
- Students will use Google Classroom to access links to interactive activities, science labs, interactive stories and video resources.

Alignment to Standards:

- **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.
- **8.1.P.C.1:** Collaborate with peers by participating in interactive

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21st-Century Skills

Career Ready Practices

CRP 4. SW communicate clearly and effectively and with reason on the Mystery Science labs.

CRP 6. SW demonstrate creativity and innovation while completing the following STEM activity:

http://hookedonscience.org/files/2016_Experiment_Archive_EGG_GEODE.pdf

CRP 8. SW utilize critical thinking to make sense of problems and persevere in solving them while working on the following Mystery Science lessons:

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

Modifications (ELL, Special Education, At-Risk Students, Gifted and Talented, and 504 Plans)

ELL:

- Work toward longer passages as skills in English increase
- Use visuals
- Introduce key vocabulary before lesson
- Teacher models reading aloud daily
- Provide peer tutoring
- Use of Bilingual Dictionary
- Guided notes and/or scaffold outline for written assignments
- Provide students with English Learner leveled readers.

Supports for Students With IEPs:

- Allow extra time to complete assignments or tests
- Guided notes and/or scaffold outline for written assignments
- Work in a small group
- Allow answers to be given orally or dictated
- Use large print books, Braille, or books on CD (digital text)
- Follow all IEP modifications

At-Risk Students:

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- Guided notes and/or scaffold outline for written assignments
- Introduce key vocabulary before lesson
- Work in a small group
- Lesson taught again using a differentiated approach
- Allow answers to be given orally or dictated
- Use visuals / Anchor Charts
- Leveled texts according to ability

Gifted and Talented:

- Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles)
- Provide options, alternatives and choices to differentiate and broaden the curriculum
- Organize and offer flexible small group learning activities
- Provide whole group enrichment explorations
- Teach cognitive and methodological skills
- Use center, stations, or contracts
- Organize integrated problem-solving simulations
- Propose interest-based extension activities
- Expose students to beyond level texts.

Supports for Students With 504 Plans:

- Follow all the 504 plan modifications
- Text to speech/audio recorded selections
- Amplification system as needed
- Leveled texts according to ability
- Fine motor skill stations embedded in rotation as needed
- Modified or constrained spelling word lists
- Provide anchor charts with high frequency words and phonemic patterns

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