

Pequannock Township School District

Curriculum Syllabus

STEM- Second Grade

Course Description:

The Second Grade science curriculum has been designed to continue to develop students' scientific practices relating to the world around them. This will be explored through formal laboratory experiences and informal demonstrations/labs. Other methods employed are reading, writing, computer searches, and other technologies that complement or enhance the topics studied. Lab reports using data gathered during experiments engenders critical thinking skills. Topics include: Relationships in Habitats, Properties and Changes in Matter, The Earth's Land and Water and Changes to Earth's Land. Wherever possible, these topics are related to real life situations so that students see the value and importance of their studies.

Course Standards:

The following is a list of NJSLs that describe what students are expected to know and be able to do as a result of successfully completing this course. The following NJSLs are the basis of the assessment of student achievement. The learner will demonstrate mastery of:

- 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.
- 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.
- 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.
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- 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.
- 2-PS1-2: Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
- 2-PS1-3: 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-PS1-4: Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
- W.2.1: Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section. (2-PS1-4)
- W.2.6: With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (K-2-ETS1-1)
- 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). (2-LS2-1)
- W.2.8: Recall information from experiences or gather information from provided sources to answer a question. (2-LS2-1),(K-2-ETS1-1)
- SL.2.2: Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. (2-ESS1-1)
- 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. (2-LS2-2)
- RI.2.1: Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (K-2-ETS1-1)
- RI.2.3: Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. (2-PS1-4)
- RI.2.8: Describe how reasons support specific points the author makes in a text. (2-PS1- 2),(2-PS1- 4)
- RI.2.9: Compare and contrast the most important points presented by two texts on the same topic. (2-ESS2-1)
- MP.2: Reason abstractly and quantitatively. (2-LS2-1),(K-2-ETS1-1)
- MP.4: Model with mathematics. (2-LS2-1),(2-LS2-2),(K-2-ETS1-1)
- MP.5: Use appropriate tools strategically. (2-LS2-1),(K-2-ETS1-1)
- 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. (2-LS2-2)
- 2.NBT.A.3: Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (2-ESS2-2)
- 2.MD.B.5: Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as

- drawings of rulers) and equations with a symbol for the unknown number to represent the problem. (2-ESS2-1)
- 2.NBT.A: Understand place value. (2-ESS1-1)

Scope and Sequence

	Unit Title	STEM or Humanities	Weeks
1	School Rules & Citizenship	Humanities	2
2	Geography of NJ & My Home	Humanities	4
1	Properties of Matter & Changes in Matter	STEM	4
3	The Global Environment	Humanities	4
2	The Earth's Land & Water & Changes to Earth's Land	STEM	6
4	My Natural Resources	Humanities	4
3	Relationship in Habitats	STEM	5
5	Responses to Nature's Challenges	Humanities	4

Assessments

Evaluation of student achievement in this course will be based on the following:

Formative Monitoring (Questioning / Discussion): Class/Group Discussion, Investigations, Simulations, Graphic Organizers

Summative Assessment (Quiz / Project / Report): CER writing, Quiz, Unit Assessment

Curriculum Resources

Brain Pop

Read the book "A Seed is Sleepy"

Read "What are Seeds" by Molly Aloian.

<https://www.opened.com/video/biology-lesson-plan-what-do-plants-need-to-grow-youtube/212167>

"From Seed to Plant" By Gail Gibbons

http://pollinatorlive.pwnet.org/teacher/bug_chicks.php?movie_file=BugChicks5.flv

http://schools.smcps.org/gkes/images/Reproduction_in_Plants.pdf

<http://kidsgrowingstrong.org/Pollinators/>

<https://www.youtube.com/watch?v=MQiszdkOwuU>

<https://youtu.be/xY4JFOSuqvY>

<http://www.pbs.org/wnet/nature/the-seedy-side-of-plants-video-flying-seeds/4664/>

<https://www.youtube.com/watch?v=GzRsyJSSWzg>

Read “What is Pollination?” by Bobbie Kalman.

https://www.youtube.com/watch?v=H_CSILluVZs

<https://www.youtube.com/watch?v=XHFefI04aWc>

<https://youtu.be/BW05vMziy2o>

Wax to Crayon by: Inez Snyder

<https://www.youtube.com/watch?v=5xhbctEcAAA>

https://www.youtube.com/watch?v=XRHBrdhd9_U

<http://www.lessonpaths.com/learn/i/mixtures-and-solutions-6/bbc-schools-science-clips-reversible-and-irreversible-changes>

<http://www.lessonpaths.com/learn/i/mixtures-and-solutions-6/bbc-schools-science-clips-reversible-and-irreversible-changes>

<https://www.youtube.com/watch?v=Z-IGJ82Bl0>

“Land and Water Form Photo” book

https://prezi.com/lv2df-lpi89c/edit/#0_6568153

<https://www.netflix.com/title/80046944>

Our Earth Text

https://youtu.be/Q3_sylZBuPY

<http://sciencenetlinks.com/media/filer/2011/10/07/forces.swf>

<https://youtu.be/VsGBlIWr6O4>

Home and School Connection

The following are suggestions and/or resources that will help parents support their children:

- Engage in reading with your child
- Visit a science museum
- Explore the outdoors
- Watch Bill Nye The Science Guy
- Plant a garden
- Grow plants indoors

