Pequannock Township School District Curriculum Syllabus

STEM- Third Grade

Course Description:

The Third 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: Pushes and Pulls, Weather, The Effects of the Sun, and Basic Needs of Living Things. 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:

- 3-ESS2-1: Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
- 3-ESS2-2: Obtain and combine information to describe climates in different regions of the world.
- 3-ESS3-1: Make a claim about the merits of a design solution that reduces the impacts of a weather-related hazards.
- 3-PS2-1: Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.
- 3-PS2-2: Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
- 3-PS2-3: Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.
- 3-PS2-4:Define a simple design problem that can be solved by applying scientific ideas about magnets.
- 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
- 3-LS2-1: Construct an argument that some animals form groups that help members survive.
- 3-LS3-1: Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

- 3-LS3-2: Use evidence to support the explanation that traits can be influenced by the environment.
- 3-LS4-1: Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.
- 3-LS4-2: Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
- 3-LS4-3: Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- 3-LS4-4: Make a claim about the merits of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.
- 3-5-ETS1-1: Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- RI.3.1: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-ESS2-2)
- RI.3.2: Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS3-1),(3-LS3-2)
- RI.3.3: Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-PS2-3)(3-LS1-1)
- RI.3.7: Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate an understanding of the text (e.g., where, when, why, and how key events occur).
- RI.3.8: Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). (3-PS2-3)
- RI.3.9: Compare and contrast the most important points and key details presented in two texts on the same topic. (3-ESS2-2)
- W.3.1: Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-ESS3-1)
- W.3.2 : Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS3-1),(3-LS3-2),(3-LS4-2)
- W.3.7: Conduct short research projects that build knowledge about a topic. (3-ESS3-1)
- W.3.8: Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-PS2-1),(3-PS2-2)
- W.5.7: Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (3-5-ETS1-1)
- W.5.8: Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (3-5-ETS1-1)
- SL.3.3: Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. (3-PS2-3)

- SL.3.4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS3-1),(3-LS3-2)
- SL.3.5: Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. (3-LS1-1)
- MP.2: Reason abstractly and quantitatively. (3-ESS2-1),(3-ESS2-2),(3-ESS3-1)
- MP.4: Model with mathematics. (3-ESS2-1),(3-ESS2-2), (3-ESS3-1)
- MP.5: Use appropriate tools strategically. (3-ESS2-1)
- 3.NBT: Number and Operations in Base Ten (3-LS1-1)
- 3.NF: Number and Operations—Fractions (3-LS1-1)
- 3.MD.A.2: Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (3-ESS2-1)
- 3.MD.B.3: Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in bar graphs. (3-ESS2-1)
- 3.MD.B.4: Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. (3-LS3-1),(3-LS3-2)
- 3-5.OA: Operations and Algebraic Thinking (3-ETS1-1)

Scope and Sequence

	Unit Title	**STEM or Humanities**	**Weeks**
1	Peq & World: Where are We?	Humanities	4 wks
2	Weather & Climate (*before introduce CER & 5E Model*)	STEM	5 wks
3	Comparing Communities	Humanities	3 wks
4	Traits & Continuing the Cycle	STEM	3 wks
5	Communities Around the World	Humanities	4 wks
6	Coming to the United States	Humanities	4 wks
7	Force & Motion	STEM	3 wks
8	Electrical & Magnetic Forces	STEM	3 wks

8	Traits & Continuing the Cycle	STEM	4 wks
9	How People Live & Work	Humanities	3 wks
10	Organisms/Environment & Understanding Changes in the Environment	STEM	1.5 wks

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, Teacher Observation

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

Curriculum Resources

Brain Pop
http://mathwire.com/templates/bargraph.pdf
http://www.factmonster.com/dk/encyclopedia/climate-zones.html
http://www.physicalgeography.net/fundamentals/7v.html
http://www.weatherforkids.org/climate.html
https://www.youtube.com/watch?v=0idC5I7aDnI
http://somup.com/cDXVo5mIN
http://www.youtube.com/watch?v=KDp1tiUsZw8
http://www.youtube.cohttp://www.hhmi.org/biointeractive/making-fittest-natural-selection-and-adaptationm/watch?v=nB2SXLYwKkM
http://www.vtaide.com/png/bird-adaptations3.htm
http://peppermoths.weebly.com/
http://www.fl-pda.org/independent/courses/elementary/science/section2/2h.htm
http://studyjams.scholastic.com/studyjams/jams/science/animals/animal-life-cycles.htm
http://www.sheppardsoftware.com/scienceforkids/life_cycle/index.htm
http://kcts9.pbslearningmedia.org/resource/tdc02.sci.life.cyc.metamorph/metamorphosis-change-of-plans/
https://www.youtube.com/watch?v=mZ3fRX1yqyM
https://www.youtube.com/watch?v=OTxtkCXS8gA
https://www.youtube.com/watch?v=5QMvt0kbOMM
https://www.youtube.com/watch?v=13H1Pqs3fD4
https://www.youtube.com/watch?v=MqHr51mHBDo
https://www.youtube.com/watch?v=fRX2JtKFUzk
http://swf.tubechop.com/tubechop.swf?vurl=x1MUl8XSZGA&start=0&end=620&cid=8123670
https://www.youtube.com/watch?v=fP54QWi-aiM&feature=youtu.be

https://www.youtube.com/watch?v=42pnfTdzGhw
http://betterlesson.com/lesson/resource/3160357/changing-habitat-student-work
http://betterlesson.com/lesson/resource/3160358/changing-habitat-student-work-2
https://www.youtube.com/watch?v=luDcnAMXUNw
http://lessonplanspage.com/scienceanimaladaptations58-htm/

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
- Review family history for traits