



STEAMOLOGY

What? Why? How?

Inquiry driven activities dominate this Science, Technology, Engineering, Art, and Math-based adventure. Designed to be hands-on, STEAMology will help students deepen their critical thinking skills, foster creativity, and teach collaboration.



STEAMology is a hands-on, 2 hour field trip designed for 3rd-5th grade students.

Each exhibit rotation will house activities based on one or more of the STEAM disciplines (*Science, Technology, Engineering, Art, & Math*).



Each of the exhibit station activities are focused on one or more of the following Louisiana Standards.





STEAMOLOGY CURRICULUM CONNECTIONS

Louisiana Student Standards

Science – Grade 3

Motion and Stability: Forces and Interactions

- 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.

Science – Grade 4

Energy

- 4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
- 4-PS3-3 Ask questions and predict outcomes about the changes in energy that occur when objects collide.
- 4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

Science – Grade 5

Matter and its Interactions

- 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen.
- 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

Mathematics – Grade 3

- 3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
- 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.



STEAMOLOGY CURRICULUM CONNECTIONS

Louisiana Student Standards cont.

Mathematics – Grade 4

- 4.NBT.A.1 Recognize that in a multi-digit whole number less than or equal to 1,000,000, a digit in one place represents ten times what it represents in the place to its right. For example, (1) recognize that $700 \div 70 = 10$; (2) in the number 7,246, the 2 represents 200, but in the number 7,426 the 2 represents 20, recognizing that 200 is ten times as large as 20, by applying concepts of place value and division.
- 4.NBT.B.4 Fluently add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000, using the standard algorithm.
- 4.MD.C.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint and understand concepts of angle measurement.
- 4.G.A.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

Mathematics – Grade 5

- 5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.

English Language Arts – Grade 3

- RF.3.3 Know and apply grade-level phonics and word analysis skills in decoding words.
- RF.3.4 Read with sufficient accuracy and fluency to support comprehension.
- SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
- L.3.1 Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.
- L.3.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- L.3.5 Demonstrate understanding of word relationships and nuances in word meanings.
- L.3.6 Acquire and use accurately grade-appropriate conversational, general academic and domain-specific words and phrases, including those that signal spatial and temporal relationships.



STEAMOLOGY CURRICULUM CONNECTIONS

Louisiana Student Standards cont.

English Language Arts – Grade 4

- RF.4.3 Know and apply grade-level phonics and word analysis skills in decoding words.
- RF.4.4 Read with sufficient accuracy and fluency to support comprehension.
- SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- L.4.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- L.4.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- L.4.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).

English Language Arts – Grade 5

- RF.5.3 Know and apply grade-level phonics and word analysis skills in decoding words.
- RF.5.4 Read with sufficient accuracy and fluency to support comprehension.
- SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
- L.5.1 Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.
- L.5.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- L.5.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).

Social Studies

- *Economics*
 - 3.18 Describe the importance of personal financial decision-making such as budgeting and saving.



STEAMOLOGY CURRICULUM CONNECTIONS

Louisiana Student Standards cont.

Arts – Grades 3, 4, 5

Dance

- *Creative Expression*
 - D-CE-E1 Use kinesthetic awareness, proper use of space, and the ability to move safely.

Theater Arts

- *Creative Expression*
 - TH-CE-E2 Interact in group situations and show differentiation of roles through experimentation and role playing.
 - TH-CE-E3 Exhibit physical and emotional dimensions of characterization through experimentation and role playing.
 - TH-CE-E5 Identify and express differences among reality, fantasy, role playing, and media representation.

Visual Arts

- *Creative Expression*
 - VA-CE-E2 Explore and discuss techniques and technologies for visual expression and communication.
 - VA-CE-E3 Use art vocabulary and the elements and principles of design to convey the language of art (create and discuss own artwork).
 - VA-CE-E5 Draw on imagination, individual experience, and group activities to generate ideas for visual expression.
- *Aesthetic Perception*
 - VA-AP-E4 Recognize that there are many possibilities and choices in the processes for designing and producing visual arts.

Health – Grade 3

- Benchmark 1-E-2: Discuss the relationship between healthy behaviors and personal health.
 - 1-E-2.1 Identify personal health behaviors (e.g., good nutrition, brushing teeth, washing hands, exercise).
 - 1-E-2.2 Explain how personal health behaviors affect individual well-being.
- Benchmark 1-E-5: Identify when it is important to seek health care.
 - 1-E-5.3 Illustrate through role play the ability to seek help when sick or hurt.
- Benchmark 2-E-4: Describe how the school and community can support personal health practices and behaviors.
 - 2-E-4.1 Identify school and community support staff (e.g., school nurse, counselor, social worker, nutritionist).
 - 2-E-4.2 Explain the role of school and community support staff.
 - 2-E-4.3 Identify health care facilities in the community and their functions.



STEAMOLOGY CURRICULUM CONNECTIONS

Louisiana Student Standards cont.

Health – Grade 4

- Benchmark 4-E-4: Demonstrate how to ask for assistance to enhance personal health.
 - 4-E-4.1 Identify situations where personal health assistance may be required.
 - 4-E-4.2 Demonstrate how to seek personal health assistance from a trusted adult.
- Benchmark 7-E-1: Examine personal health behaviors.
 - 7-E-1.1 Discuss how healthy and unhealthy habits influence our health.
 - 7-E-1.2 Demonstrate a positive health behavior.
- Benchmark 8-E-1: Identify and describe community and school health service providers and their function.

Health – Grade 5

- Benchmark 1-E-5: Identify when it is important to seek health care.
 - 1-E-5.1 Identify different areas of healthcare and how to access them.
- Benchmark 4-E-4: Demonstrate how to ask for assistance to enhance personal health.
- Benchmark 7-E-2: Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health.
- Benchmark 8-E-1: Identify and describe community and school health service providers and their function.