CHILDREN'S MUSEUM HOUSTON

Genius Station is aligned to Science TEKS for Kindergarten through Grade 8 and Reading/Language Arts TEKS for Kindergarten through Grade 5.

Kindergarten, Reading/Language Arts

- **communicate ideas effectively through speaking and discussion**
  - K.1(A) listen actively and ask questions to understand information and answer questions using multi-word responses
  - K.1(B) restate and follow oral directions that involve a short, related sequence of actions
  - K.1(C) share information and ideas by speaking audibly and clearly using the conventions of language
  - K.1(D) work collaboratively with others by following agreed-upon rules for discussion, including taking turns
  - K.1(E) develop social communication such as introducing himself/herself, using common greetings, and expressing needs and wants

- **use research skills to plan and present in written, oral, or multimodal formats**
  - K.12(A) generate questions for formal and informal inquiry with adult assistance
  - K.12(B) develop and follow a research plan with adult assistance
  - K.12(C) gather information from a variety of sources with adult assistance
  - K.12(D) demonstrate understanding of information gathered with adult assistance
  - K.12(E) use an appropriate mode of delivery, whether written, oral, or multimodal, to present results

Kindergarten, Science

- **Scientific Investigation and Reasoning**
  - K.1.(A) identify, discuss, and demonstrate safe and healthy practices as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately
  - K.1.(B) demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reusing or recycling paper, plastic, and metal
  - K.2(A) ask questions about organisms, objects, and events observed in the natural world
  - K.2(B) plan and conduct simple descriptive investigations
  - K.2(C) collect data and make observations using simple tools
  - K.2(D) record and organize data and observations using pictures, numbers, and words
  - K.2(E) communicate observations about simple descriptive investigations
  - K.3(A) identify and explain a problem such as the impact of littering and propose a solution

- K.3(B) make predictions based on observable patterns in nature
- K.3(C) explore that scientists investigate different things in the natural world and use tools to help in their investigations
- K.4(A) collect information using tools, including computing devices, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices; non-standard measuring items; weather instruments such as demonstration thermometers; and materials to support observations of habitats of organisms such as terrariums and aquariums
- K.4(B) use the senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment

First Grade, Reading/Language Arts

- **communicate ideas effectively through speaking and discussion**
  - 1.1(A) listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses
  - 1.1(B) follow, restate, and give oral instructions that involve a short, related sequence of actions
  - 1.1(C) share information and ideas about the topic under discussion, speaking clearly at an appropriate pace and using the conventions of language
  - 1.1(D) work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, and making appropriate
  - contributions
  - 1.1(E) develop social communication such as introducing himself/herself and others, relating experiences to a classmate, and expressing needs and feelings

- **use research skills to plan and present in written, oral, or multimodal formats**
  - 1.13(A) generate questions for formal and informal inquiry with adult assistance
  - 1.13(B) develop and follow a research plan with adult assistance
  - 1.13(C) identify and gather relevant sources and information to answer the questions with adult assistance
  - 1.13(D) demonstrate understanding of information gathered with adult assistance
  - 1.13(E) use an appropriate mode of delivery, whether written, oral, or multimodal, to present results

First Grade, Science

- **Scientific Investigation and Reasoning**
  - 1.1(A) identify, discuss, and demonstrate safe and healthy practices as outlined in Texas Education agency-approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately

- 1.1(B) identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals
- 1.2(A) ask questions about organisms, objects, and events observed in the natural world
- 1.2(B) plan and conduct simple descriptive investigations
- 1.3(C) collect data and make observations using simple tools
- 1.4(D) record and organize data using pictures, numbers, and words
- 1.5(E) communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations
- 1.3(A) identify and explain a problem and propose a solution
- 1.3(B) make predictions based on observable patterns
- 1.3(C) describe what scientists do
- 1.4(A) collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; non-standard measuring items; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums
- 1.4(B) measure and compare organisms and objects using non-standard units

Second Grade, Reading/Language Arts

- **communicate ideas effectively through speaking and discussion**
  - 2.1(A) listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses
  - 2.1(B) follow, restate, and give oral instructions that involve a short, related sequence of actions
  - 2.1(C) share information and ideas that focus on the topic under discussion, speaking clearly at an appropriate pace and using the conventions of language
  - 2.1(D) work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others
  - 2.1(E) develop social communication such as conversing politely in all situations

- **use research skills to plan and present in written, oral, or multimodal formats**
  - 2.13(A) generate questions for formal and informal inquiry with adult assistance
  - 2.13(C) identify and gather relevant sources and information to answer the questions
  - 2.13(E) demonstrate understanding of information gathered
  - 2.13(G) use an appropriate mode of delivery, whether written, oral, or multimodal, to present results

Second Grade, Science

- **Scientific Investigation and Reasoning**
  - 2.1(A) identify, describe, and demonstrate safe practices as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately
  - 2.1(B) identify and demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reuse or recycling of paper, plastic, and metal
  - 2.2(A) ask questions about organisms, objects, and events during observations and investigations
  - 2.2(B) plan and conduct descriptive investigations
  - 2.2(C) collect data from observations using scientific tools
  - 2.2(D) record and organize data using pictures, numbers, and words
  - 2.2(E) communicate observations and justify explanations using student-generated data from simple descriptive investigations
  - 2.2(F) compare results of investigations with what students and scientists know about the world
  - 2.3(A) identify and explain a problem and propose a task and solution for the problem
  - 2.3(B) make predictions based on observable patterns
  - 2.3(C) identify what a scientist is and explore what different scientists do
  - 2.4(A) collect, record, and compare information using tools, including computers, hand lenses, rulers, plastic beakers, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; weather instruments such as thermometers, wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums
  - 2.4(B) measure and compare organisms and objects

Third Grade, Reading/Language Arts

- **communicate ideas effectively through speaking and discussion**
  - 3.1(A) listen actively, ask relevant questions to clarify information, and make pertinent comments
  - 3.1(B) follow, restate, and give oral instructions that involve a series of related sequences of action

  - 3.1(C) speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively
  - 3.1(D) work collaboratively with others by following agreed-upon rules, norms, and protocols
  - 3.1(E) develop social communication such as conversing politely in all situations

- **use research skills to plan and present in written, oral, or multimodal formats**
  - 3.13(A) generate questions on a topic for formal and informal inquiry
  - 3.13(C) identify and gather relevant information from a variety of sources
  - 3.13(E) demonstrate understanding of information gathered
  - 3.13(H) use an appropriate mode of delivery, whether written, oral, or multimodal, to present results

Third Grade, Science

- **Scientific Investigation and Reasoning**
  - 3.1(A) demonstrate safe practices as described in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment as appropriate, including safety goggles or chemical splash goggles, as appropriate, and gloves
  - 3.1(B) make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans, and plastics
  - 3.2(A) plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world
  - 3.2(B) collect and record data by observing and measuring using the metric system and recognize differences between observed and measured data
  - 3.2(C) construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data
  - 3.2(D) analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations
  - 3.2(E) demonstrate that repeated investigations may increase the reliability of results
  - 3.2(F) communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion
  - 3.3(A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing

- 3.3(B) represent the natural world using models such as volcanoes or the Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials
- 3.3(C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists
- 3.4(A) collect, record, and analyze information using tools, including cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, magnets, collecting nets, notebooks, and Sun, Earth, and Moon system models; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums

Fourth Grade, Reading/Language Arts

- **communicate ideas effectively through speaking and discussion**
  - 4.1(A) listen actively, ask relevant questions to clarify information, and make pertinent comments
  - 4.1(B) follow, restate, and give oral instructions that involve a series of related sequences of action
  - 4.1(C) express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively
  - 4.1(D) work collaboratively with others to develop a plan of shared responsibilities

- **use research skills to plan and present in written, oral, or multimodal formats**
  - 4.13(A) generate and clarify questions on a topic for formal and informal inquiry
  - 4.13(B) develop and follow a research plan with adult assistance
  - 4.13(C) identify and gather relevant information from a variety of sources
  - 4.13(E) demonstrate understanding of information gathered
  - 4.13(H) use an appropriate mode of delivery, whether written, oral, or multimodal, to present results

Fourth Grade, Science

- **Scientific Investigation and Reasoning**
  - 4.1(A) demonstrate safe practices and the use of safety equipment as described in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment, including safety goggles or chemical splash goggles, as appropriate, and gloves, as appropriate

- 4.1(B) make informed choices in the use and conservation of natural resources and reusing and recycling of materials such as paper, aluminum, glass, cans, and plastic
- 4.2(A) plan and implement descriptive investigations, including asking well defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions
- 4.2(B) collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept maps
- 4.2(C) construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data
- 4.2(D) analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured
- 4.2(E) perform repeated investigations to increase the reliability of results; and
- 4.2(F) communicate valid oral and written results supported by data
- 4.3(A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing
- 4.3(B) represent the natural world using models such as the water cycle and stream tables and identify their limitations, including accuracy and size
- 4.3(C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists
- 4.4(A) collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, springs, magnets, collecting nets, and notebooks; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums

Fifth Grade, Reading/Language Arts

- **communicate ideas effectively through speaking and discussion**
  - 5.1(A) listen actively to interpret verbal and nonverbal messages, ask relevant questions, and make pertinent comments
  - 5.1(B) follow, restate, and give oral instructions that include multiple action steps
  - 5.1(C) give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively
  - 5.1(D) work collaboratively with others to develop a plan of shared responsibilities

- **use research skills to plan and present in written, oral, or multimodal formats**
  - 5.13(A) generate and clarify questions on a topic for formal and informal inquiry

- 5.13(C) identify and gather relevant information from a variety of sources
- 5.13(E) demonstrate understanding of information gathered
- 5.13(H) use an appropriate mode of delivery, whether written, oral, or multimodal, to present results

Fifth Grade, Science

- **Scientific Investigation and Reasoning**
  - 5.1(A) demonstrate safe practices and the use of safety equipment as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment, including safety goggles or chemical splash goggles, as appropriate, and gloves, as appropriate
  - 5.1(B) make informed choices in the conservation, disposal, and recycling of materials
  - 5.2(A) describe, plan, and implement simple experimental investigations testing one variable
  - 5.2(B) ask well defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology
  - 5.2(C) collect and record information using detailed observations and accurate measuring
  - 5.2(D) analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence
  - 5.2(E) demonstrate that repeated investigations may increase the reliability of results
  - 5.2(F) communicate valid conclusions in both written and verbal forms
  - 5.2(G) construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information
  - 5.3(A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing
  - 5.3(B) draw or develop a model that represents how something that cannot be seen such as the Sun, Earth, and Moon system and formation of sedimentary rock works or looks
  - 5.3(C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists
  - 5.4(A) collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices; and materials to support observations of habitats or organisms such as terrariums and aquariums

Sixth Grade, Science

- **Scientific Investigation and Reasoning**
  - 6.1(A) demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards
  - 6.1(B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials
  - 6.2(A) plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology
  - 6.2(B) design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology
  - 6.2(C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers
  - 6.2(D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns
  - 6.2(E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends
  - 6.3(A) analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student
  - 6.3(B) use models to represent aspects of the natural world such as a model of Earth's layers
  - 6.3(C) identify advantages and limitations of models such as size, scale, properties, and materials
  - 6.3(D) relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content
  - 6.4(A) use appropriate tools, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, balances, microscopes, thermometers, calculators, computers, timing devices, and other necessary equipment to collect, record, and analyze information
  - 6.4(B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher

Seventh Grade, Science

- **Scientific Investigation and Reasoning**
  - 7.1(A) demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards
  - 7.1(B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials
  - 7.2(A) plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology
  - 7.2(B) design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology
  - 7.2(C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers
  - 7.2(D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns
  - 7.2(E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends
  - 7.3(A) analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student
  - 7.3(B) use models to represent aspects of the natural world such as human body systems and plant and animal cells
  - 7.3(C) identify advantages and limitations of models such as size, scale, properties, and materials
  - 7.3(D) relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content
  - 7.4(A) use appropriate tools, including life science models, hand lenses, stereoscopes, microscopes, beakers, Petri dishes, microscope slides, graduated cylinders, test tubes, meter sticks, metric rulers, metric tape measures, timing devices, hot plates, balances, thermometers, calculators, water test kits, computers, temperature and pH probes, collecting nets, insect traps, globes, digital cameras, journals/notebooks, and other necessary equipment to collect, record, and analyze information
  - 7.4(B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher

Eighth Grade, Science

- **Scientific Investigation and Reasoning**
  - 8.1(A) demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards
  - 8.1(B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials
  - 8.2(A) plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology
  - 8.2(B) design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology
  - 8.2(C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
  - 8.2(D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns
  - 8.2(E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends
  - 8.3(A) analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student
  - 8.3(B) use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature
  - 8.3(C) identify advantages and limitations of models such as size, scale, properties, and materials
  - 8.3(D) relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content
  - 8.4(A) use appropriate tools, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectroscopes, timing devices, and other necessary equipment to collect, record, and analyze information
  - 8.4(B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher