CHILDREN'S MUSEUM HOUSTON

Power Science Lab is aligned to Reading/Language Arts and Science TEKs for Grade 2 - 5.

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

- (1) **Scientific investigation and reasoning**. The student conducts classroom and outdoor investigations following home and school safety procedures. The student is expected to:
  - 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; and
- (2) **Scientific investigation and reasoning**. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:
  - 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;
  - (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; and
  - 2.2(F) compare results of investigations with what students and scientists know about the world.
- (3) **Scientific investigation and reasoning**. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:

  - 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; and
  - 2.3(C) identify what a scientist is and explore what different scientists do.
- (4) **Scientific investigation and reasoning**. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:
  - 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; and
  - 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

- (1) **Scientific investigation and reasoning**. The student conducts classroom and outdoor investigations following home and school safety procedures and environmentally appropriate practices. The student is expected to:
  - 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; and
  - 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.

- (2) **Scientific investigation and reasoning**. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
    - 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; and
    - 3.2(F) communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion.
- (3) **Scientific investigation and reasoning**. The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:
    - 3.3(A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;
    - 3.3 (C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.
- (4) **Scientific investigation and reasoning**. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to
    - 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

- (1) **Scientific investigation and reasoning**. The student conducts classroom and outdoor investigations, following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:
    - 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; and
- (2) **Scientific investigation and reasoning**. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
    - 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 (F) communicate valid oral and written results supported by data.
- (3) **Scientific investigation and reasoning**. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:
    - 4.3(A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;
    - 4.3 (C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.
- (4) **Scientific investigation and reasoning**. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. The student is expected to
    - 4.4(A)collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, balances, graduated cylinders, beakers, hot plates, meter sticks, 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

- (1) **Scientific investigation and reasoning**. The student conducts classroom and outdoor investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:
  - 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; and
- (2**) Scientific investigation and reasoning**. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
  - 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;
- (3) **Scientific investigation and reasoning**. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:
  - 5.3(A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;

    - 5.3 (C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.
- (4) **Scientific investigation and reasoning**. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to
    - 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.