



## All Region 16 FIFTH Grade Students

### **EARTH AND ENERGY at the Panhandle Plains Historical Museum**

Monday, October 15, 2018 9:30 am – 12:30 pm

Monday, October 22, 2018 9:30 am – 12:30 pm

Monday, October 29, 2018 9:30 am – 12:30 pm

Monday, November 5, 2018 9:30 am – 12:30 p.m.

**All 5<sup>th</sup> graders of Region 16** are invited to participate in the 12th WOWW Science Collaborative. Five hands-on learning stations will allow students to view and participate in activities that will focus on EARTH and ENERGY as it relates to the science curriculum. It promises to be an unforgettable learning experience for 5<sup>th</sup> graders as they make the learning connections for life and better prepare them for state standardized assessments.



*For ALL 5<sup>th</sup> graders of Region 16*

***Panhandle Plains Historical Museum Canyon, Texas***

**Each day will include 5 learning sessions**

**12<sup>th</sup> Annual WOWW SCIENCE COLLABORATIVE Presents.....**

- CNS Pantex “PHASES OF MATTER”
- Weather : John Harris, meteorologist
- Xcel Energy Electrical circuits
- Palo Duro Canyon State Park
- Petroleum Wing investigation station with Panhandle Plains Historical Museum

*Our focus is on fifth grade students; specifically targeting the areas of EARTH and ENERGY in preparation for their first TAKS tests. The following TEKS relate to this project and the objectives we hope to accomplish with your involvement.*

§112.7.Science, Grade 5 Introduction

In Grade 5, the study of science includes planning and implementing field and laboratory investigations using scientific methods, analyzing information, making informed decisions and using tools (such as nets, cameras and computers) to collect and record the information.

As students learn science skills, they identify structures and functions of Earth systems including the core, mantle and crust and the effect of weathering on landforms. They learn that growth, erosion and dissolving are examples of how some past events have affected present day events. Students learn about magnetism, physical states of matter, and conductivity as properties

that are used to classify matter. They also learn that light, heat, and electricity are all forms of energy.

Fifth grade science is a way of learning about the natural world and students should know how science has built a vast body of changing and increasing knowledge described by physical, mathematical and conceptual models. Students should also understand that science may not answer all questions.

Investigations are used to learn about the natural world. Certain types of questions can be answered by investigations, and methods, models and conclusions built from these investigations change as new observations are made. Models of objects and events are tools for understanding the natural world and can show how systems work. However, models and events have limitations and based on new discoveries, are constantly being modified to more closely reflect the natural world.

The following TEKS are listed for the WOWW Science Collaborative:

- 5.1A.B. Scientific processes. The student is expected to (A) demonstrate safe practices during field and laboratory investigations; and (B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.
- 5.2B.C.D. (B) collect information by observing and measuring (C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence; (D) communicate valid conclusions.
- 5.3B.C. (B) draw inferences based on information related to promotional materials for products and services; (C) represent the natural world using models and identify their limitations.
- 5.4 Scientific processes. The student knows how to use a variety of tools and methods to conduct science inquiry.
- 5.8A.C.D. (A) differentiate among forms of energy including light, heat, electrical, and solar energy; (C) demonstrate that electricity can flow in a circuit and can produce heat, light, sound, and magnetic effects; (D) verify that vibrating an object can produce sound
- 5.11A.B.C. (A) identify and observe actions that require time for changes to be measurable, including growth, erosion, dissolving, weathering and flow; (B) draw conclusions about “what happened before” using data such as from tree-growth rings and sedimentary rock sequences; (C) identify past events that led to the formation of the Earth’s renewable, non-renewable, and inexhaustible resources.
- 5.12A.B. (A) interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering; (B) describe processes responsible for the formation of coal, oil, gas, and minerals.

*It is suggested that the following TEKS be applied after your students have experienced the WOWW Science Collaborative to reinforce the specific scientific processes and concepts.*

- 5.2A.E. (A) plan and implement descriptive and simple experimental investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology; (E) construct simple graphs, tables, maps, and charges using tools including computers to organize, examine and evaluate information.
- 5.3A.D.E. (A) analyze, review and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information; (D) evaluate the impact of research on scientific thought, society, and environment (E) connect Grade 5 science concepts with the history of science and contributions of scientists.
- 5.4A (A) collect and analyze information using tools including cameras, microscopes, calculators, sound recorders, computers, hand lenses, rulers, thermometers, compasses, balances, hot plates, meter sticks, timing devices, magnets, collecting nets, and safety goggles.
- 5.8B (B) identify and demonstrate everyday examples of how light is reflected, such as from tinted windows and refracted, such as in cameras, telescopes and eyeglasses.
- 5.12C.D. (C) identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon; (D) identify gravity as the force that keeps planets in orbit around the Sun and the moon in orbit around the Earth.
- §112.1. Implementation of Texas Essential Knowledge and Skills for Science, Elementary. The provisions of this subchapter shall be implemented by school district beginning September 1, 1998, and at that time shall supersede §75.28(a)-(f) of this title (relating to Science). Source: The provisions of this §112.1 adopted to be effective September 1, 1998, 22 TexReg 7647.