Sixth Grade Science Curriculum Bundle # 7

Title	Suggested Dates
Conservation of Energy	Jan. 4-Jan. 28 (18 days)

Big Idea/Enduring Understanding	Guiding Questions
Energy can be transferred from one object to another Energy can be transformed from one type to another	What are different forms of energy and how do they apply to every day activities? Where do energy transformations occur in every day life?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	Specificity & Examples	Suggested Resources (Read the note above)
To access additional resources, go to: S:\!PISD Public\Science Curriculum Resources\6th Grade Resource Activities		
6.9 Force, motion, and energy. The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form. The student is expected to: **6.9C** demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy **6.7 Matter and energy. The student knows that some of Earth's energy resources are available on a nearly perpetual basis, while others can be renewed over a**	Including: --- Forms of energy • Electrical • Thermal • Light • Solar • Chemical • Mechanical • Nuclear ---Energy Transformations • Chemical energy to electrical energy (burning of fuels to power generators) • Kinetic energy to electrical energy (wind turbines) • Potential energy to electrical energy (hydroelectric power) • Chemical energy to sound, heat, and light (radio, TV, etc.) ---Understand transformations may include multi-step transformations ---Understand energy is not lost or gained it is just	**Vocabulary**: energy, potential/kinetic energy, thermal energy/ heat energy, chemical energy, mechanical energy, nuclear energy, light energy, solar energy, electrical energy, energy transfer, energy transformation, nonrenewable/renewable resources, inexhaustible resources, resource, natural resource, fossil fuel **AVID Activity**- Writing in Science pages 22-23 "Pre-write and Quickwrite" www.brainpop.com; Search Energy **Core Activity:** All Wound Up Lab (use as demonstration) pg. 119 (Holt Science and Technology) **Quick Lab:** Hear that Energy! Forms of Energy Lab pg. TE 48 (Region 4-Gateways to Science Grade 6) Journal Entry pg. SE 57 (Region 4-Gateways to Science Grade 6)

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relatively short period of time. Some energy resources, once depleted, are essentially nonrenewable. The student is expected to: **6.7A** research and debate the advantages and disadvantages of using coal, oil, natural gas, nuclear power, biomass, wind, hydropower, geothermal, and solar resources.	transferred ---Classify energy sources as renewable, nonrenewable, or inexhaustible ---Describe how these sources of energy are used ---Describe advantages and disadvantages of each source of energy	**Technology**- Create a powerpoint/photostory about energy resources **Technology**- Create a brochure using Microsoft Publisher about energy resources
6.7 Matter and energy. The student knows that some of Earth's energy resources are available on a nearly perpetual basis, while others can be renewed over a relatively short period of time. Some energy resources, once depleted, are essentially nonrenewable. The student is expected to: **6.7B** design a logical plan to manage energy resources in the home, school, or community	---Examine energy conservation in each of these areas: home, school or community ---Need to know which energy resources are renewable/nonrenewable and which are being used in their home, school or community.	Brochure/Poster: Brochure/poster representing energy conservation within subject chosen
6.1 The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. **6.1A** demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standard	Including: --- Chemical use and disposal --- Electrical & heat safety --- Safe practices with lab equipment --- Implement District Safety Contract --- Operate in accordance with the Texas Safety Standards Teacher Note: Safety skills and process TEKS should be embedded and reinforced throughout the year.	Texas Safety Standards
6.1 The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. **6.1B** practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials	Including: --- Recycle lab material	
6.2 The student uses scientific inquiry methods during laboratory and field investigations. **6.2C** collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;	---Collect qualitative observations about each energy transformation occurring	

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6.3 The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. **6.3A** in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;	Including: ---debate on natural resources based on research	
6.4 The student knows how to use a variety of tools and safety equipment to conduct science inquiry. **6.4A** use appropriate tools to collect, record, and analyze information, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum;	Including: --- Journals/notebooks --- Data collection tools as appropriate	
6.4 The student knows how to use a variety of tools and safety equipment to conduct science inquiry. **6.4B** 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.	Including: ---Use of Safety goggles ---Application of heat safety measures ---Chemical safety	