

Program: Re-Energy

Grade 10 - Alberta Science Curriculum Connections



Activity Name	Organizing Idea	Learning Outcome
Activity: Renewable Energy Sources	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
Activity: What is Renewable Energy?	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
Activity: Build a Solar Car	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
Activity: Build a Solar Oven	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
Activity: Construire un Four Solaire	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
Activity: Introduction to Solar Electricity	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.

Activity: Introduction to Solar Heat Energy	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
Activity: Solar Energy Transition with Six Nations of the Grand River	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
Activity: Electrifying the Future of Transportation Guide		N/A
Activity: Build an Electric Vehicle Model	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Exploring Electric Vehicle Charging Stations	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances

Activity: History of the Electric Vehicle	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: How is Your Community Adapting For Electric Vehicles?	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Planning a Trip in Your Electric Vehicle	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Electric Vehicles and Charging Stations with Six Nations of the Grand River	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances

Activity: What EV Should You Buy?	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Build a Wind Turbine	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Introduction to Wind Energy	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
Activity: Wind Turbine Simulator	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems

Activity: Build a Hydroelectric Generator	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Introduction to Hydro Energy	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
Activity: Pumped Hydro Storage	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
Activity: Build a Biogas Generator	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances

Activity: Introduction to Biomass Energy	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Build a Flywheel Model	10 - Unit B: Energy Flow in Technological Systems	Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Build a Penny Battery	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances
Activity: Endothermic and Exothermic Reactions	10 - Unit A: Energy & Matter in Chemical Change	Describe the basic particles that make up the underlying structure of matter, and investigate related technologies
		Identify and classify chemical changes, and write word and balanced chemical equations for significant chemical reactions, as applications of Lavoisier’s law of conservation of mass
	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems

Activity: Energy Storage Match	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
		Investigate and interpret the role of environmental factors on global energy transfer and climate change
Activity: Exploring Energy Storage in Your Community	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
		Investigate and interpret the role of environmental factors on global energy transfer and climate change
Activity: Exploring How To make a Battery	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	14 - Unit B: Understanding Energy Transfer Technologies	Explain the functioning of common methods and devices designed to control the transfer of thermal energy
		Describe and compare simple machines as devices that transfer energy and multiply forces or distances

Activity: Heat Transfer Lab	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
Activity: The Electrostatic Effect	10 - Unit B: Energy Flow in Technological Systems	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
		Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
		Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
	10 - Unit D: Energy Flow in Global Systems	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species
		Analyze the relationships among net solar energy, global energy transfer processes—primarily radiation, convection and hydrologic cycle—and climate.
		Investigate and interpret the role of environmental factors on global energy transfer and climate change