Program: Energy Revealed

Grade 3 - Alberta Science Curriculum Connections

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Activity Name	Organizing Idea	Learning Outcome
Activity: Knowing Energy: Stair Climb	Energy	Students investigate and explain how forces affect the movement of objects
	Scientific Methods	Students relate investigation to building knowledge.
Activity: Knowing Energy: Tea at Home	Matter	Students investigate and analyze how materials have the potential to be changed.
	Energy	Students investigate and explain how forces affect the movement of objects
	Scientific Methods	Students relate investigation to building knowledge.
Activity: Knowing Energy: Race to a kWh	Energy	Students investigate and explain how forces affect the movement of objects
	Scientific Methods	Students relate investigation to building knowledge.
Activity: Knowing Energy: How Intense is Your Electricity Usage?	Energy	Students investigate and explain how forces affect the movement of objects
	Scientific Methods	Students relate investigation to building knowledge.
Activity: Knowing Energy: The Electricity Grid	Energy	Students investigate and explain how forces affect the movement of objects
	Scientific Methods	Students relate investigation to building knowledge.
Activity: Knowing Energy: Renewables	Energy	Students investigate and explain how forces affect the movement of objects
	Scientific Methods	Students relate investigation to building knowledge.
Activity: Knowing Energy: The Big Picture	Energy	Students investigate and explain how forces affect the movement of objects
	Scientific Methods	Students relate investigation to building knowledge.
Activity: All About the Baseline	**Grade 7-12**	
Activity: Can You Observe How You Conserve?	**Grade 4-12**	
Activity: Energy Hogs	**Grade 4-12**	
Activity: Extra Energy Investigation	**Grade 4-12**	
Activity: How Smart is Your Smart Board?	**Grade 7-12**	

Activity: Imagination Station	**Grade 4-12**	
Activity: Small Appliance Energy Reliance	**Grade 4-12**	
Activity: Start Me Up!	**Grade 4-12**	
Activity: Take a Look	**Grade 4-6**	
Activity: Total Energy vs. Total Cost	**Grade 7-12**	
Activity: Understanding Energy Efficiency in Your School	**Grade 7-12**	
Activity: Community Walk	**Grade 4-12**	
Activity: School Energy Audit	**Grade 7-12**	
Activity: Energy Efficient Lighting	**Grade 4-7**	
Activity: Find the Phantom Load	**Grade 4-12**	
Activity: Home Energy Audit	Energy	Students investigate and explain how forces affect the movement of objects
	Scientific Methods	Students relate investigation to building knowledge.
Activity: Watchers and Seekers	**Grade 4-12**	
Activity: Back to the Future	**Grade 4-7**	
Activity: Changing Our Ways	**Grade 4-7**	
Activity: Exploring Our Energy Ethics	**Grade 4-7**	
Activity: Once Upon a Bike	**Grade 4-7**	
Activity: Puzzling Over Energy Issues	**Grade 4-7**	
Activity: Ride, Roll and Stroll	**Grade 4-7**	
Activity: Speak for the Trees	**Grade 7-12**	
Activity: Taking the Lead	**Grade 4-7**	
Activity: Walk a Mile	**Grade 4-7**	

Program: Energy Revealed

Grade 4 - Alberta Science Curriculum Connections

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Activity Name	Organizing Idea	Learning Outcome
Activity: Knowing Energy: Stair Climb	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Knowing Energy: Tea at Home	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Knowing Energy: Race to a kWh	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Knowing Energy: How Intense is Your Electricity Usage?	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Knowing Energy: The Electricity Grid	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Knowing Energy: Renewables	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Knowing Energy: The Big Picture	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: All About the Baseline	**Grade 7-12**	
Activity: Can You Observe How You Conserve?	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.

Activity: Energy Hogs	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Extra Energy Investigation	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: How Smart is Your Smart Board?	**Grade 7-12**	
Activity: Imagination Station	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Small Appliance Energy Reliance	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Start Me Up!	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Take a Look	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Total Energy vs. Total Cost	**Grade 7-12**	
Activity: Understanding Energy Efficiency in Your School	**Grade 7-12**	
Activity: Community Walk	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: School Energy Audit	**Grade 7-12**	
Activity: Energy Efficient Lighting	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Find the Phantom Load	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.

Activity: Home Energy Audit	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Watchers and Seekers	Energy	Students investigate how forces can act on objects without contact.
	Computer Science	Students examine and apply design processes to meet needs.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Back to the Future	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Changing Our Ways	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Exploring Our Energy Ethics	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Once Upon a Bike	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Puzzling Over Energy Issues	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Ride, Roll and Stroll	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.
Activity: Speak for the Trees	**Grade 7-12**	
Activity: Taking the Lead	Energy	Students investigate how forces can act on objects without contact.
	Scientific Methods	Students investigate evidence and reflect on its role in science.

Activity: Walk a Mile	Energy	Students investigate how forces can act on objects without contact.
	Earth Systems	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
	Scientific Methods	Students investigate evidence and reflect on its role in science.

Program: Energy Revealed	Grade 5 - Alberta Science Curriculum Connections	

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Activity Name	Organizing Idea	Learning Outcome
Activity: Knowing Energy: Stair Climb	Energy	Students investigate and compare how forces affect living things and objects in water and air.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Knowing Energy: Tea at Home	Matter	Students investigate the particle model of matter in relation to the physical properties of solids, liquids, and gases.
	Energy	Students investigate and compare how forces affect living things and objects in water and air.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Knowing Energy: Race to a kWh	Energy	Students investigate and compare how forces affect living things and objects in water and air.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Knowing Energy: How Intense is Your Electricity Usage?	Energy	Students investigate and compare how forces affect living things and objects in water and air.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Knowing Energy: The Electricity Grid	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Knowing Energy: Renewables	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Knowing Energy: The Big Picture	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: All About the Baseline	**Grade 7-12**	
Activity: Can You Observe How You Can Conserve?	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Energy Hogs	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.

Activity: Extra Energy Investigation	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: How Smart is Your Smart Board?	**Grade 7-12**	
Activity: Imagination Station	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Small Appliance Energy Reliance	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Start Me Up!	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Take a Look	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Total Energy vs. Total Cost	**Grade 7-12**	
Activity: Understanding Energy Efficiency in Your School	**Grade 7-12**	
Activity: Community Walk	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: School Energy Audit	**Grade 7-12**	
Activity: Energy Efficient Lighting	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Find the Phantom Load	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Home Energy Audit	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Watchers and Seekers	Energy	Students investigate and analyze various energy resources.
	Computer Science	Students apply design processes when creating artifacts that can be used by a human or machine to address a need.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.

Activity: Back to the Future	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Changing Our Ways	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Exploring Our Energy Ethics	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Once Upon a Bike	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Puzzling Over Energy Issues	Energy	Students investigate and analyze various energy resources.
	Earth Systems	Students analyze climate and connect it to weather conditions and agricultural practices.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Ride, Roll and Stroll	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Speak for the Trees	**Grade 7-12**	
Activity: Taking the Lead	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.
Activity: Walk a Mile	Energy	Students investigate and analyze various energy resources.
	Scientific Methods	Students investigate how evidence is gathered and explain the importance of ethics in science.

Program: Energy Revealed	Grade 6 - Alberta Science Curriculum Connections	

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Activity Name	Organizing Idea	Learning Outcome
Activity: Knowing Energy: Stair Climb	Energy	Students analyze forces and relate them to interactions between objects.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Knowing Energy: Tea at Home	Matter	Students investigate how particles of matter behave when heated or cooled and analyze effects on solids, liquids, and gases.
	Energy	Students analyze forces and relate them to interactions between objects.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Knowing Energy: Race to a kWh	Energy	Students analyze forces and relate them to interactions between objects.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Knowing Energy: How Intense is Your Electricity Usage?	Energy	Students analyze forces and relate them to interactions between objects.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Knowing Energy: The Electricity Grid	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Knowing Energy: Renewables	Energy	Students investigate energy resources and explain factors that influence their use.
	Earth Systems	Students investigate climate, changes in climate, and the impact of climate change on Earth.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Knowing Energy: The Big Picture	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: All About the Baseline	**Grade 7-12**	
Activity: Can You Observe How You Can Conserve?	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.

Activity: Energy Hogs	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Extra Energy Investigation	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: How Smart is Your Smart Board?	**Grade 7-12**	
Activity: Imagination Station	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Small Appliance Energy Reliance	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Start Me Up!	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Take a Look	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Total Energy vs. Total Cost	**Grade 7-12**	
Activity: Understanding Energy Efficiency in Your School	**Grade 7-12**	
Activity: Community Walk	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: School Energy Audit	**Grade 7-12**	
Activity: Energy Efficient Lighting	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Find the Phantom Load	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Home Energy Audit	Energy	Students investigate energy resources and explain factors that influence their use.
	Earth Systems	Students investigate climate, changes in climate, and the impact of climate change on Earth.
	Scientific Methods	Students investigate and describe the role of explanation in science.

Activity: Watchers and Seekers	Energy	Students investigate energy resources and explain factors that influence their use.
	Computer Science	Students examine abstraction in relation to design and coding and describe impacts of technologies.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Back to the Future	Energy	Students investigate energy resources and explain factors that influence their use.
	Earth Systems	Students investigate climate, changes in climate, and the impact of climate change on Earth.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Changing Our Ways	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Exploring Our Energy Ethics	Energy	Students investigate energy resources and explain factors that influence their use.
	Earth Systems	Students investigate climate, changes in climate, and the impact of climate change on Earth.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Once Upon a Bike	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Puzzling Over Energy Issues	Energy	Students investigate energy resources and explain factors that influence their use.
	Earth Systems	Students investigate climate, changes in climate, and the impact of climate change on Earth.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Ride, Roll and Stroll	Energy	Students investigate energy resources and explain factors that influence their use.
	Earth Systems	Students investigate climate, changes in climate, and the impact of climate change on Earth.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Speak for the Trees	**Grade 7-12**	
Activity: Taking the Lead	Energy	Students investigate energy resources and explain factors that influence their use.
	Scientific Methods	Students investigate and describe the role of explanation in science.
Activity: Walk a Mile	Energy	Students investigate energy resources and explain factors that influence their use.
	Earth Systems	Students investigate climate, changes in climate, and the impact of climate change on Earth.
	Scientific Methods	Students investigate and describe the role of explanation in science.

Program: Energy Revealed

Grade 7 - Alberta Science Curriculum Connections

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Activity Name	Organizing Idea	Learning Outcome
Activity: Knowing Energy: Stair Climb	Heat and Temperature	Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Knowing Energy: Tea at Home	Heat and Temperature	Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Knowing Energy: Race to a kWh	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Knowing Energy: How Intense is Your Electricity Usage?	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
		Analyze issues related to the selection and use of thermal technologies, and explain decisions in terms of advantages and disadvantages for sustainability
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Knowing Energy: The Electricity Grid	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
		Analyze issues related to the selection and use of thermal technologies, and explain decisions in terms of advantages and disadvantages for sustainability
	Structures and Forces	Describe and interpret different types of structures encountered in everyday objects, buildings, plants and animals; and identify materials from which they are made
		Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Knowing Energy: Renewables	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
		Analyze issues related to the selection and use of thermal technologies, and explain decisions in terms of advantages and disadvantages for sustainability
	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
		Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
	Structures and Forces	Demonstrate and describe processes used in developing, evaluating and improving structures that will meet human needs with a margin of safety
Activity: Knowing Energy: The Big Picture	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: All About the Baseline	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
		Analyze issues related to the selection and use of thermal technologies, and explain decisions in terms of advantages and disadvantages for sustainability
	Structures and Forces	Describe and interpret different types of structures encountered in everyday objects, buildings, plants and animals; and identify materials from which they are made
		Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Can You Observe How You Conserve?	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Energy Hogs	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
		Analyze issues related to the selection and use of thermal technologies, and explain decisions in terms of advantages and disadvantages for sustainability
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Extra Energy Investigation	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: How Smart is Your Smart Board?	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Imagination Station	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
		Analyze issues related to the selection and use of thermal technologies, and explain decisions in terms of advantages and disadvantages for sustainability
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

[Activity: Small Appliance Energy Reliance]	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
[Activity: Start Me Up!]	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
		Analyze issues related to the selection and use of thermal technologies, and explain decisions in terms of advantages and disadvantages for sustainability
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
[Activity: Take a Look]	**Grade 4-6**	
[Activity: Total Energy vs. Total Cost]	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Understanding Energy Efficiency in Your School	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Community Walk	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: School Energy Audit	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Energy Efficient Lighting	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Find the Phantom Load	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Home Energy Audit	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
		Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Watchers and Seekers	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Back to the Future	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Changing Our Ways	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Exploring Our Energy Ethics	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
		Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Once Upon a Bike	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Puzzling Over Energy Issues	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
		Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures
Activity: Ride, Roll and Stroll	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Speak for the Trees	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
		Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
	Plants for Food and Fibre	Analyze plant environments, and identify impacts of specific factors and controls
		Identify and interpret relationships among human needs, technologies, environments, and the culture and use of living things as sources of food and fibre
	Planet Earth	Describe and demonstrate methods used in the scientific study of Earth and in observing and interpreting its component materials
Activity: Taking the Lead	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Activity: Walk a Mile	Interactions and Ecosystems	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
		Trace and interpret the flow of energy and materials within an ecosystem
	Heat and Temperature	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
		Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
		Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
	Structures and Forces	Investigate and analyze forces within structures, and forces applied to them
		Investigate and analyze the properties of materials used in structures

Program: Energy Revealed	Grade 8 - Alberta Science Curriculum Connections	
Activity Name	**Organizing Idea**	**Learning Outcome**
Activity: Knowing Energy: Stair Climb	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Knowing Energy: Tea at Home	Mix and Flow of Matter	Investigate and describe fluids used in technological devices and everyday materials
		Identify, interpret and apply technologies based on properties of fluids
	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Knowing Energy: Race to a kWh	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Knowing Energy: How Intense is Your Electricity Usage?	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices

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Activity: Knowing Energy: The Electricity Grid	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Knowing Energy: Renewables	Mechanical Systems	Illustrate the development of science and technology by describing, comparing and interpreting mechanical devices that have been improved over time
		Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Knowing Energy: The Big Picture	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: All About the Baseline	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Can You Observe How You Conserve?	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices

Activity: Energy Hogs	Mechanical Systems	Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts
		Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Extra Energy Investigation	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: How Smart is Your Smart Board?	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Imagination Station	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Small Appliance Energy Reliance	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Start Me Up!	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Take a Look	**Grade 4-6**	
Activity: Total Energy vs. Total Cost	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Understanding Energy Efficiency in Your School	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices

Activity: Community Walk	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: School Energy Audit	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Energy Efficient Lighting	**Grade 4-7**	
Activity: Find the Phantom Load	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Home Energy Audit	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Watchers and Seekers	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Back to the Future	**Grade 4-7**	
Activity: Changing Our Ways	**Grade 4-7**	
Activity: Exploring Our Energy Ethics	**Grade 4-7**	
Activity: Once Upon a Bike	**Grade 4-7**	
Activity: Puzzling Over Energy Issues	**Grade 4-7**	
Activity: Ride, Roll and Stroll	**Grade 4-7**	
Activity: Speak for the Trees	Cells and Systems	Investigate living things; and identify and apply scientific ideas used to interpret their general structure, function and organization
	Mechanical Systems	Investigate and describe the transmission of force and energy between parts of a mechanical system
		Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices
Activity: Taking the Lead	**Grade 4-7**	

Activity: Walk a Mile	Grade 4-7	

Program: Energy Revealed

Grade 9 - Alberta Science Curriculum Connections

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Activity Name	Organizing Idea	Learning Outcome
Activity: Knowing Energy: Stair Climb	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Knowing Energy: Tea at Home	Matter and Chemical Change	Investigate materials, and describe them in terms of their physical and chemical properties
		Describe and interpret patterns in chemical reactions
	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Knowing Energy: Race to a kWh	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Knowing Energy: How Intense is Your Electricity Usage?	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions

Activity: Knowing Energy: The Electricity Grid	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Knowing Energy: Renewables	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy
Activity: Knowing Energy: The Big Picture	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: All About the Baseline	Electrical Principles and Technologies	Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy
Activity: Can You Observe How You Conserve?	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Energy Hogs	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions

Activity: Electronic Overload	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Extra Energy Investigation	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: How Smart is Your Smart Board?	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Imagination Station	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Small Appliance Energy Reliance	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy
Activity: Start Me Up!	Electrical Principles and Technologies	Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy

Activity: Total Energy vs. Total Cost	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy
Activity: Understanding Energy Efficiency in Your School	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Community Walk	Electrical Principles and Technologies	Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy
Activity: School Energy Audit	Electrical Principles and Technologies	Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy
Activity: Find the Phantom Load	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Home Energy Audit	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy

Activity: Watchers and Seekers	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
Activity: Science Slam	Electrical Principles and Technologies	Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy
Activity: Speak for the Trees	Biological Diversity	Identify impacts of human action on species survival and variation within species, and analyze related issues for personal and public decision making
	Electrical Principles and Technologies	Investigate and interpret the use of devices to convert various forms of energy to electrical energy and electrical energy to other forms of energy
		Describe technologies for transfer and control of electrical energy
		Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions
		Describe and discuss the societal and environmental implications of the use of electrical energy

Program: Energy Revealed

Grade 10 - Alberta Science Curriculum Connections

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Activity Name	Organizing Idea	Learning Outcome
Activity: Knowing Energy: Stair Climb	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: Knowing Energy: Tea at Home	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	Describe how natural and technological cooling and heating systems are based upon the transfer of thermal energy (heat) from hot to cold objects
		Explain the functioning of common methods and devices designed to control the transfer of thermal energy
Activity: Knowing Energy: Race to a kWh	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: Knowing Energy: How Intense is Your Electricity Usage?	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: Knowing Energy: The Electricity Grid	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: Knowing Energy: Renewables	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
		Investigate and interpret the role of environmental factors on global energy transfer and climate change
Activity: Knowing Energy: The Big Picture	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: All About the Baseline	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: Can You Observe How You Conserve?	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 Hogs	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: Electronic Overload	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: Extra Energy Investigation	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: How Smart is Your Smart Board?	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: Imagination Station	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: Small Appliance Energy Reliance	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	Describe how natural and technological cooling and heating systems are based upon the transfer of thermal energy (heat) from hot to cold objects
		Explain the functioning of common methods and devices designed to control the transfer of thermal energy
Activity: Start Me Up!	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: Total Energy vs. Total Cost	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: Understanding Energy Efficiency in Your School	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: Community Walk	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: School Energy Audit	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: Find the Phantom Load	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: Home Energy Audit	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: Watchers and Seekers	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: Science Slam	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: Speak for the Trees	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
		Investigate and interpret the role of environmental factors on global energy transfer and climate change