

Program: Re-Energy

Grade 8 – Ontario Science and Technology Curriculum Connections



Activity Name	Organizing Idea	Learning Outcome
Activity: Renewable Energy Sources	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
Activity: What is Renewable Energy?	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
Activity: Build a Solar Car	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
Activity: Build a Solar Oven	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
		A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
Activity: Construire un Four Solaire	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
		A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences

Activity: Introduction to Solar Electricity	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
		A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation
Activity: Introduction to Solar Heat Energy	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation
Activity: Solar Energy Transition with Six Nations of the Grand River	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
Activity: Electrifying the Future of Transportation Guide	Grade 9-12	
Activity: Build an Electric Vehicle Model	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
		A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences

Activity: Exploring Electric Vehicle Charging Stations	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
Activity: History of the Electric Vehicle	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
Activity: How is Your Community Adapting for Electric Vehicles?	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
		A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation
Activity: Planning a Trip in your Electric Vehicle	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
	D. Structures and Mechanisms: Systems in Action	D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation
Activity: Electric Vehicles and Charging Stations with Six Nations of the Grand River	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation

Activity: What EV Should You Buy?	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
Activity: Build a Wind Turbine	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
	C. Matter and Energy: Fluids	C1. Relating Science and Technology to Our Changing World – Analyse uses of various technologies that rely on the properties of fluids, and assess the impact of these technologies on society and the environment
		C2. Exploring and Understanding Concepts – Demonstrate an understanding of basic fluid mechanics, including the properties and uses of fluids
Activity: Introduction to Wind Energy	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	C. Matter and Energy: Fluids	C1. Relating Science and Technology to Our Changing World – Analyse uses of various technologies that rely on the properties of fluids, and assess the impact of these technologies on society and the environment
		C2. Exploring and Understanding Concepts – Demonstrate an understanding of basic fluid mechanics, including the properties and uses of fluids
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation

Activity: Wind Turbine Simulator	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	C. Matter and Energy: Fluids	C1. Relating Science and Technology to Our Changing World – Analyse uses of various technologies that rely on the properties of fluids, and assess the impact of these technologies on society and the environment
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation
Activity: Build a Hydroelectric Generator	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
	C. Matter and Energy: Fluids	C1. Relating Science and Technology to Our Changing World – Analyse uses of various technologies that rely on the properties of fluids, and assess the impact of these technologies on society and the environment
Activity: Introduction to Hydro Energy	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	C. Matter and Energy: Fluids	C1. Relating Science and Technology to Our Changing World – Analyse uses of various technologies that rely on the properties of fluids, and assess the impact of these technologies on society and the environment
		C2. Exploring and Understanding Concepts – Demonstrate an understanding of basic fluid mechanics, including the properties and uses of fluids
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation
	E. Earth and Space Systems: Water Systems	E1. Relating Science and Technology to Our Changing World – Assess the impact of human activities and technologies on the sustainability of water resources

Activity: Pumped Hydro Storage	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	C. Matter and Energy: Fluids	C1. Relating Science and Technology to Our Changing World – Analyse uses of various technologies that rely on the properties of fluids, and assess the impact of these technologies on society and the environment
		C2. Exploring and Understanding Concepts – Demonstrate an understanding of basic fluid mechanics, including the properties and uses of fluids
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation
	E. Earth and Space Systems: Water Systems	E1. Relating Science and Technology to Our Changing World – Assess the impact of human activities and technologies on the sustainability of water resources
Activity: Build a Biogas Generator	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	C. Matter and Energy: Fluids	C1. Relating Science and Technology to Our Changing World – Analyse uses of various technologies that rely on the properties of fluids, and assess the impact of these technologies on society and the environment
		C2. Exploring and Understanding Concepts – Demonstrate an understanding of basic fluid mechanics, including the properties and uses of fluids
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
Activity: Introduction to Biomass Energy	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation

Activity: Build a Flywheel Model	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
Activity: Build a Penny Battery	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
Activity: Endothermic and Exothermic Reactions	A. Stem Skills and Connections	A1. STEM Investigation and Communication Skills – Use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
Activity: Energy Storage Match	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
Activity: Exploring Energy Storage in Your Community	A. Stem Skills and Connections	A3. Applications, Connections, and Contributions – Demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
	D. Structures and Mechanisms: Systems in Action	D1. Relating Science and Technology to Our Changing World – Assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs
		D2. Exploring and Understanding Concepts – Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation
Activity: Exploring How to Make a Battery	N/A	
Activity: Heat Transfer Lab	N/A	
Activity: The Electrostatic Effect	N/A	