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January 31, 2022- June 29, 2022

Suggested Time Allocation: Embed as best suited to fit your schedule. **If a combined class is 5/6, Conservation of Energy and Electricity can be taught at the same time.** ***Teachers can determine whether to start with Science or Social Studies or teach them simultaneously.	
Grade 4 Understanding Matter and Energy Light and Sound	**Big Ideas** Light and sound are forms of energy with specific properties. *(Overall expectations 2 and 3)* Sound is created by vibrations. *(Overall expectations 2 and 3)* Light is required to see. (Overall expectation 3) Technological innovations involving light and sound have an impact on the environment. *(Overall expectation 1)* **Possible Framing Questions:** How might you use what you know about sound or about light and mirrors in your device? Which properties of light or sound will be most useful to you in your device? What challenges might you encounter, and how can you overcome them?
Overall Expectations	**Specific Expectations**
Relating Science and Technology to Society and the Environment -assess the impact on society and the environment of technological innovations related to light and sound.	1.1 assess the impacts on personal safety of devices that apply the properties of light and/or sound and propose ways of using these devices to make our daily activities safer. 1.2 assess the impacts on society and the environment of light and/or sound energy produced by different technologies, taking different perspectives into account.

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Developing Investigation and Communication Skills -investigate the characteristics and properties of light and sound.	2.1 follow established safety procedures for protecting eyes and ears. 2.2, 2.3, 2.4, 2.5, 2.6, 2.7
Understanding Basic Concepts - demonstrate an understanding of light and sound as forms of energy that have specific characteristics and properties.	3.1 identify a variety of natural light sources and artificial light sources. 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8
Grade 5 Science	
Grade 5 Understanding Matter and Energy Properties of and Changes in Matter	**Big Ideas** There are three states of matter. *(Overall expectations 2 and 3)* Matter that changes state is still the same matter. *(Overall expectations 2 and 3)* Physical change refers to the fact that a substance can be changed from one form to another. *(Overall expectations 2 and 3)* Chemical change implies the formation of a new substance. *(Overall expectations 2 and 3)* The properties of materials determine their use and may have an effect on society and the environment. *(Overall expectation 1)* ***Possible Framing Questions**:* What change of state happens during condensation? During solidification? Do the changes of state you are observing take place because of a release of heat or an absorption of heat? Explain.

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	What physical changes in matter did you observe? What caused those changes to take place? What would have to happen to reverse those changes? What chemical changes in matter did you observe? What caused those changes to take place? What conclusions did you make about changes in matter? How will you ensure that your test of the materials is fair? What properties of the materials make them useful for the task? What is the environmental impact of using each of the materials? Which of their properties might hamper the task? How might you improve one of these products to make it better suited to the task?
Overall Expectations	**Specific Expectations**
Relating Science and Technology to Society and the Environment - evaluate the social and environmental impacts of processes used to make everyday products;	1.1 evaluate the environmental impacts of processes that change one product into another product through physical or chemical changes 1.2 assess the social and environmental impact of using processes that rely on chemical changes to produce consumer products, taking different perspectives into account (e.g., the perspectives of food manufacturers, consumers, landfill operators, people concerned about the environment), and make a case for maintaining the current level of use of the product or for reducing it
Developing Investigation and Communication Skills - conduct investigations that explore the properties of matter and changes in matter;	2.1 follow established safety procedures for working with heating appliances and hot materials. 2.2, 2.3, 2.4, 2.5, 2.6
Understanding Basic Concepts - demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.	3.1 identify matter as everything that has mass and occupies space. 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8

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GRADE 6 Science	
Grade 6 Understanding Matter and Energy Electricity and Electrical Devices	**Big Ideas** Electrical energy can be transformed into other forms of energy. *(Overall expectations 2 and 3)* Other forms of energy can be transformed into electrical energy. *(Overall expectations 2 and 3)* Electrical energy plays a significant role in society, and its production has an impact on the environment. *(Overall expectation 1)* Society must find ways to minimize the impact of energy production on the environment. *(Overall expectation 1)* **Possible Framing Questions:** Is static electricity really static? Explain. What causes static electricity? Is it easier to generate static electricity in a dry room or a humid room? Why? Which materials accept a charge better than others? Where would you find static electricity in action? How can you find the positive and negative ends of your battery? How much voltage does your battery produce? How can you increase the voltage? What would happen if you exchanged the lemon for an apple? For a potato or a carrot? For other fruits or vegetables? How does a wind turbine produce electricity? Is this a good method of producing electricity? Why? Why not?
Overall Expectations	**Specific Expectations**
Relating Science and Technology to Society and the Environment - evaluate the impact of the use of electricity on both the way we live and the environment.	1.1 assess the short- and long-term environmental effects of the different ways in which electricity is generated in Canada including the effect of each method on natural resources and living things in the environment. 1.2 assess opportunities for reducing electricity consumption at home or at school that could affect the use of non-renewable resources in a positive way or reduce the impact of electricity generation on the environment.

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Developing Investigation and Communication Skills - investigate the characteristics of static and current electricity, and construct simple circuits.	2.1 follow established safety procedures for working with electricity. 2.2, 2.3, 2.4, 2.5, 2.6, 2.7
Understanding Basic Concepts - demonstrate an understanding of the principles of electrical energy and its transformation into and from other forms of energy.	3.1 distinguish between current and static electricity. 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8

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Suggested Time Allocation: Embed as best suited to fit your schedule. ***Teachers can determine whether to start with Science or Social Studies or teach them simultaneously.**	
Grade 4 Understanding Earth and Space Systems Rocks and Minerals	**Big Ideas** Rocks and minerals have unique characteristics and properties that are a result of how they were formed. *(Overall expectations 2 and 3)* The properties of rocks and minerals determine society's possible uses for them. *(Overall expectations 1 and 2)* Our use of rocks and minerals affects the environment. *(Overall expectation 1)* **Possible Framing Questions:** Where might we find products made from rocks and minerals in our daily life? How might you find out other ways in which rocks and minerals are used in everyday items? Why might some people and groups have concerns about the use of some of these rocks and minerals? What might be some alternative materials that could be used instead of the rocks and minerals? How are some of the items made from rocks and/or minerals disposed of when they are no longer useful? Which minerals can be recycled or reused in other products?
Overall Expectations	**Specific Expectations**
Relating Science and Technology to Society and the Environment - assess the social and environmental impacts of human uses of rocks and minerals.	1.1 assess the social and environmental costs and benefits of using objects in the built environment that are made from rocks and minerals. 1.2 analyse the impact on society and the environment of extracting and refining rocks and minerals for human use, taking different perspectives into account.

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Developing Investigation and Communication Skills - investigate, test, and compare the physical properties of rocks and minerals.	2.1 follow established safety procedures for outdoor activities and for working with tools, materials, and equipment. 2.2, 2.3, 2.4, 2.5, 2.6
Understanding Basic Concepts - demonstrate an understanding of the physical properties of rocks and minerals.	3.1 describe the difference between rocks (composed of two or more minerals) and minerals (composed of the same substance throughout) and explain how these differences determine how they are used. 3.2, 3.3, 3.4
Grade 5 Science	
Grade 5 Understanding Earth and Space Systems Conservation of Energy and Resources	**Big Ideas** Energy sources are either renewable or non-renewable. *(Overall expectation 3)* Energy can neither be created nor destroyed, but it can be transformed. *(Overall expectations 2 and 3)* Choices about using energy and resources have both immediate and long-term impacts. *(Overall expectation 1)* Conservation (reducing our use of energy and resources) is one way of reducing the impacts of using energy and resources. *(Overall expectation 1)* ***Possible Framing Questions**:* Why did you choose this issue to research? Where will you find information about it? How will you determine if the source of information is a good one (e.g., unbiased, current, knowledgeable)? Why might some of the sources be biased one way or another on the issue? What are some of the concerns that were raised in your research?

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	How might this issue be relevant to our local community? Who can take action on this issue? How might you as an individual influence the outcome of the issue? Describe the energy transformations that are taking place in your device. What challenges did you encounter in making these transformations take place? As one form of energy is being transformed into another, where is energy being lost in your device? How might you minimize that loss?
Overall Expectations	**Specific Expectations**
Relating Science and Technology to Society and the Environment - analyse the immediate and long-term effects of energy and resource use on society and the environment and evaluate options for conserving energy and resources.	1.1 analyse the long-term impacts on society and the environment of human uses of energy and natural resources and suggest ways to reduce these impacts. 1.2 evaluate the effects of various technologies on energy consumption.
Developing Investigation and Communication Skills - investigate energy transformation and conservation.	2.1 follow established safety procedures for using tools and materials. 2.2, 2.3, 2.4, 2.5
Understanding Basic Concepts - demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.	3.1 identify a variety of forms of energy and give examples from everyday life of how that energy is used. 3.2, 3.3, 3.4, 3.5

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GRADE 6 Science	
Grade 6 Understanding Earth and Space Systems Space	**Big Ideas** Earth is a part of a large interrelated system. *(Overall expectations 2 and 3)* Technological and scientific advances that enable humans to study space affect our lives. *(Overall expectations 1 and 2)* **Possible Framing Questions:** Why is life in space a challenge for humans? How might some of those challenges be overcome? What technologies exist now to allow us to overcome the challenges? In what ways does the International Space Station mimic conditions on Earth? What technologies create conditions similar to Earth's on the space station, and what differences remain? How might robotics play a role in human adaptation to space life? Under what circumstances might robots replace humans in space exploration?
Overall Expectations	**Specific Expectations**
Relating Science and Technology to Society and the Environment - assess the impact of space exploration on society and the environment.	1.1 assess the contributions of Canadians to the exploration and scientific understanding of space. 1.2 evaluate the social and environmental costs and benefits of space exploration, taking different points of view into account.
Developing Investigation and Communication Skills - investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon.	2.1 follow established safety procedures for handling tools and materials and observing the sun. 2.2, 2.3, 2.4, 2.5

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Understanding Basic Concepts - demonstrate an understanding of components of the systems of which the earth is a part and explain the phenomena that result from the movement of different bodies in space.	3.1 identify components of the solar system, including the sun, the earth, and other planets, natural satellites, comets, asteroids, and meteoroids, and describe their physical characteristics in qualitative terms. 3.2, 3.3, 3.4, 3.5