

Grade	Unit	Curricular Outcome	Careers	How it Connects
1	Seasonal Change	Identify human preparations for seasonal change and identify activities that are done on a seasonal basis.	Materials Engineer	When humans prepare for seasonal changes they pick clothing that works for the weather they are experiencing. Materials engineers develop, process, and test materials used to create a wide range of products – including materials for clothing.
1	Building Things	Construct objects and models of objects, using a variety of different materials (most, if not all, curricular outcomes should be applicable to engineering)	Civil Engineer, Mechanical Engineer etc.	<a href="https://exploreengineering.ca/everyday-engineers">https://exploreengineering.ca/everyday-engineers</a>
2	Exploring Liquids	Compare water with one or more other liquids, such as cooking oil, glycerine or water mixed with liquid detergent. Comparisons may be based on characteristics, such as colour, ease of flow, tendency of drops to form a ball shape (bead), interactions with other liquids and interactions with solid materials.	Petroleum Engineer	In order to do their job Petroleum Engineers are exploring the ease of flow of liquids and how liquid interacts with solid materials - knowing how to do this well means that fewer emissions are produced when gathering the resources society needs.
2	Exploring Liquids	Recognize human responsibilities for maintaining clean supplies of water, and identify actions that are taken to ensure that water supplies are safe.	Geophysicist, Geologist and Engineers	These professions work on various projects that deal with water management to ensure safe water supplies for humans and other living things.
2	Buoyancy and Boats	Construct objects that will float on and move through water, and evaluate various designs for watercraft.	Mechanical Engineer and Marine Engineer	A marine engineer (or ship engineer), works in researching, developing, and constructing new marine vessels and their component parts.

Please note that this document is intended as a starting point, and is not an exhaustive list of career and curriculum connections

2	Magnetism	Describe the interaction of magnets with other magnets and with common materials.	Electrical Engineer, Mining Engineer and Geophysicist	Electrical engineers need to know about induced magnetic fields as it pertains to electrical engineering. Geophysicists need to know about magnetism because they study the earth and earth has a magnetic field. Both Geophysicists and Mining Engineers need to know about magnetism for when they are doing resource exploration.
2	Hot and Cold Temperature	Describe how heating and cooling materials can often change them; e.g., melting and freezing, cooking, burning.	Geologist	An understanding of heating and cooling is needed when dealing with volcanology. Also, certain clays can turn into different clays, but only at a certain temperature (needed for geology).
2	Hot and Cold Temperature	Describe, in general terms, how local buildings are heated	Geophysicist	The heating of buildings can build into learning about geothermal in later grades
3	Rocks and Minerals	Demonstrate knowledge of materials that comprise Earth's crust, and demonstrate skill in classifying these materials.	Geophysicist, Geologist and Mining Engineer	Geophysicists and Geologists need to know about rocks and minerals because they study the earth and what it is comprised of. Both Geophysicists and Mining Engineers need to know about the materials that make up the Earth's crust for when they are doing resource exploration.
3	Building with a Variety of Materials	Construct structures, using a variety of materials and designs, and compare the effectiveness of the various materials and designs for their intended purposes (most, if not all, curricular outcomes should be applicable to engineering)	Mechanical Engineer, Civil Engineer, Materials Engineer etc.	<a href="https://exploreengineering.ca/everyday-engineers">https://exploreengineering.ca/everyday-engineers</a>
3	Testing Materials and Designs	Evaluate the suitability of different materials and designs for their use in a building task (most, if not all, curricular outcomes should be applicable to engineering)	Mechanical Engineer, Civil Engineer, Materials Engineer etc.	<a href="https://exploreengineering.ca/everyday-engineers">https://exploreengineering.ca/everyday-engineers</a>

3	Hearing and Sound	Describe the nature of sound, and demonstrate methods for producing and controlling sound.	Geophysicist and Geologist	Understanding sound builds the foundation for working with seismic data – a necessary skill in these professions.
3	Animal Life Cycles	Recognize that habitat preservation can help maintain animal populations, and identify ways that student actions can assist habitat preservation.	Geoscientists	Geoscientists help identify ways we can assist habitat preservation (geophysicists at Geoscientists Without Borders assist with habitat identification = locating wombat tunnels or other homes of burrowing animals)
4	Waste and Our World	Recognize that human activity can lead to the production of wastes, and identify alternatives for the responsible use and disposal of materials.	Environmental Engineer	They are involved in efforts to improve recycling, waste disposal, public health, and control of water and air pollution.
4	Wheels and Levers	Demonstrate a practical understanding of wheels, gears and levers by constructing devices in which energy is transferred to produce motion.	Mechanical Engineer	Engineers create various tools, engines or machines that impact human, society and the environment. These devices can include wheels, gears and levers.
4	Building Devices and Vehicles that Move	Construct a mechanical device for a designated purpose, using materials and design suggestions provided (most, if not all, curricular outcomes should be applicable to engineering).	Mechanical Engineer (this can overlap into other fields of engineering such as marine, manufacturing, aeronautical, or biomedical engineering depending on what type of device is needed)	Engineers create various tools, engines or machines that impact human, society and the environment. These devices can produce motion based on the purpose of the device.

4	Light and Shadows	Identify sources of light, describe the interaction of light with different materials, and infer the pathway of a light beam.	Optical Engineers	They research and design devices that use light and optics (e.g. lenses, microscopes etc.).
4	Plant Growth and Changes	Describe the importance of plants to humans and their importance to the natural environment. Students who meet this expectation should be able to give examples of plants being used as a source of food or shelter, and be aware of the role plants play in the environment; e.g., preventing erosion, maintaining oxygen.	Civil Engineering	Ground Bioengineering makes use of living materials in near-natural constructions - creates methods to stabilize slopes and embankments and helps with erosion control
5	Electricity and Magnetism	Demonstrate safe methods for the study of magnetism and electricity, identify methods for measurement and control, and apply techniques for evaluating magnetic and electrical properties of materials.	Electrical Engineer	Electrical engineers need to know about induced magnetic fields and electricity as it pertains to electrical engineering.
5	Mechanisms Using Electricity	Construct simple circuits, and apply an understanding of circuits to the construction and control of motorized devices.	Electrical Engineer and Mechanical Engineer	In order to design and manufacture mechanical systems, mechanical engineers need to have a deep understanding of mechanics, electricity etc. Electrical engineers needs to understand circuits, electricity etc. to do their work
5	Classroom Chemistry	Describe the properties and interactions of various household liquids and solids, and interpret their interactions.	Chemical Engineer	Chemical Engineers need to understand the properties and interactions of household liquids and solids in order establish safety procedures for handling and working with these chemicals.

5	Weather Watch	Describe the effects of the Sun's energy on daily and seasonal changes in temperature— 24-hour and yearly cycles of change.	Geoscientists	Geoscientists can use their knowledge and techniques/models specific to their field to further investigate the effects of the Sun's energy on changes in temperature and cycles. This is an important part of paleoclimatology.
5	Weather Watch	Understand that climate refers to long term weather trends in a particular region and that climate varies throughout the world.	Geoscientists	Understanding what climate is builds the foundation for paleoclimatology.
5	Weather Watch	Test fabrics and clothing designs to choose those with characteristics that most effectively meet the challenges of particular weather conditions; e.g., water resistance, wind resistance, protection from cold.	Materials Engineer	When humans prepare for seasonal changes they pick clothing that works for the weather they are experiencing. Materials engineers develop, process, and test materials used to create a wide range of products – including materials and fabric for clothing.
6	Air and Aerodynamics	Describe properties of air and the interactions of air with objects in flight.	Aeronautical Engineer	Aerospace engineering is a STEM field focused on the design, development, testing, and operation of aircraft and spacecraft. In order to do their work understanding the properties of air and flight is a must.
6	Flight	Construct devices that move through air, and identify adaptations for controlling flight.	Aeronautical Engineer	Same as above
6	Sky Science	Identify technologies and procedures by which knowledge, about planets and other objects in the night sky, has been gathered.	Geologist	Planetary geology is concerned with the geology of celestial bodies - this field of geology would involve techniques and procedures used to gather information about planets and other objects in the night sky.